Carolina™ Curriculum Correlation to Delaware

Science Content Standards and Grade Level Expectations Grades K-8

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Carolina™ Curriculum Correlation to Delaware Science Content Standards

This document is an alignment of The STC PROGRAM™, GEMS Kits®, GEMS® Space Science for Grades 3-5 and Building Blocks of Science® units with Delaware Science Content Standards and Grade Level Expectations, grades K–8. Although each unit was developed for use at a specific grade level, there is some flexibility in grade placement. Below is a chart of the STC PROGRAM™.

The STC PROGRAM™ is made up of 2 research-based, inquiry-centered core curriculums:

- Science and Technology for Children® (STC®) for grades K–6; and
- Science and Technology Concepts for Middle Schools™ (STC/MS™) for grades 6–8

	Life Science	Earth Science	Physical Science and Technology	
K–2	Organisms	Weather	Solids and Liquids	Comparing and Measuring
1–3	The Life Cycle of Butterflies	Soils	Changes	Balancing and Weighing
2–4	Plant Growth and Development	Rocks and Minerals	Chemical Tests	Sound
3–5	Animal Studies	Land and Water	Electric Circuits	Motion and Design
4–6	Microworlds	Ecosystems	Food Chemistry	Floating and Sinking
5–6	Experiments with Plants	Measuring Time	Magnets and Motors	The Technology of Paper
6–8	Human Body Systems	Catastrophic Events	Properties of Matter	Energy, Machines, and Motion
	Organisms–From Macro to Micro	Earth in Space	Light	Electrical Energy and Circuit Design

Great Explorations in Math and Science® (GEMS Kits®) are standards-based PreK-8 math and science supplemental kits. The kits have been tested for specific grade levels but can also be used at lower or higher levels.

GEMS® Space Science for Grades 3-5 is a research-based science curriculum that teaches fundamental concepts in space science.

Building Blocks of Science® is a K-5 supplementary science curriculum that can be used as stand-alone instruction.

LEGEND - To save paper, the location information in this document has been abbreviated as follows:

- TG = Teacher's Guide, SG=Student Guide
- L01, L02, etc. = Lesson 1, Lesson 2, etc. or Act01, Act02, etc. = Activity 1, Activity 2, etc.
- STC BOOK™ (a science reading book included in some of the grades 3–5 STC® unit kits)
- Exts = Extensions (found at the end of most lessons in the Teacher's Guide)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

Grade K

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Generate questions and predictions using observations and exploration about the natural world. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Building Blocks of Science: Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-16 (pp3-116) • **Organisms** • TG: L01-17 (pp3-182) • **Solids and Liquids** • TG: L01-16 (pp3-136) • **Weather** • TG: L01-16 (pp3-148)
GRADE LEVEL EXPECTATION	1.1.2.	Generate and follow simple plans using systematic observations to explore questions and predictions. • **Building Blocks of Science: Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5)

GRADE LEVEL EXPECTATION	1.1.3.	Collect data using observations, simple tools and equipment. Record data in tables, charts, and bar graphs. Compare data with others to examine and question results.

- **Ant Homes Under the Ground**
- TG: Act01-0 (pp7-73)
- **Bubble Festival**
- TG: Act01-12 (pp54-1214)
- **Buzzing a Hive**
- TG: Les01-06 (pp5-66)
- **Building Blocks of Science**: **Light**
- TG: Act 01 (pp 1-4)
- TG: Act 02 (pp 1-4)
- TG: Act 03 (pp 1-5)
- TG: Act 04 (pp 1-4)
- TG: Act 05 (pp 1-3)
- **Building Blocks of Science: Sky Watchers**
- TG: Act 02 (pp 1-6)
- TG: Act 03 (pp 1-6)
- TG: Act 04 (pp 1-7)
- TG: Act 05 (pp 1-5)
- **Building Blocks of Science: Understanding My Body**
- TG: Act 01 (pp 1-7)
- TG: Act 02 (pp 1-4)
- TG: Act 03 (pp 1-5)
- TG: Act 04 (pp 1-4)
- TG: Act 05 (pp 1-6)
- TG: Act 06 (pp 1-5)
- **Comparing and Measuring**
- TG: L01-16 (pp3-116)
- **Eggs, Eggs, Everywhere**
- TG: Act01-04 (pp5-47)
- **Elephants and Their Young**
- TG: Act01-04 (pp1-65)
- **Hide a Butterfly**
- TG: Ses01-03 (pp3-26)
- **Investigating Artifacts**
- TG: Exts (pp68-69)
- TG: Ses01-06 (pp7-63)
- **Ladybugs**
- TG: Act01-05 (pp13-71)
- **Mother Opossum and Her Babies**
- TG: Act01-03 (pp7-62)
- **Organisms**
- TG: L01-17 (pp3-182)
- **Penguins and Their Young**
- TG: Act01-04 (pp5-45)
- **Sifting Through Science**
- TG: Act01-04 (pp7-56)
- **Solids and Liquids**
- TG: L01-16 (pp3-136)
- **Terrarium Habitats**
- TG: Act01-05 (pp5-48)
- **Tree Homes**
- TG: Act01-06 (pp15-68)
- **Weather**

		• TG: L01-16 (pp3-148)
GRADE LEVEL EXPECTATION	1.1.4.	Construct a simple explanation by analyzing observational data. Revise the explanation when given new evidence or information gained from other resources or from further investigation. • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • **Comparing and Measuring** • TG: L15 (pp99-110) • **Organisms** • TG: L01 (pp3-10) • TG: L02 (pp11-20) • TG: L04 (pp37-52) • TG: L05 (pp53-64) • TG: L17 (pp179-182) • **Sifting Through Science** • TG: Act01-04 (pp7-56) • **Solids and Liquids** • TG: L01-03 (pp3-28) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L07-10 (pp55-86) • TG: L14.Exts (p114) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Weather** • TG: L01 (pp3-10) • TG: L05.Exts (pp47-48) • TG: L15-17 (pp135-150)
GRADE LEVEL EXPECTATION	1.1.5.	Share simple plans, data, and explanations with an audience and justify the results using the evidence from the investigation. • **Building Blocks of Science: Light** • TG: Act 05 (pp 1-3) • **Hide a Butterfly** • TG: Exts (pp27-28) • **Organisms** • TG: L03-16 (pp21-178) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L09 (pp69-80) • TG: L11.Exts (p92) • TG: L17 (pp137-140) • **Weather** • TG: L01-17 (pp3-150)
GRADE LEVEL EXPECTATION	1.1.6.	Use mathematics, reading, writing, and technology when conducting an investigation and communicating the results. • **Ant Homes Under the Ground** • TG: Act01-0 (pp7-73) • **Bubble Festival** • TG: Act01-12 (pp54-1214) • **Buzzing a Hive** • TG: Les01-06 (pp5-66)

		• **Building Blocks of Science**: **Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-3) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-16 (pp3-116) • **Eggs, Eggs, Everywhere** • TG: Act01-04 (pp5-47) • **Elephants and Their Young** • TG: Act01-04 (pp1-65) • **Hide a Butterfly** • TG: Ses01-03 (pp3-26) • **Investigating Artifacts** • TG: Exts (pp68-69) • TG: Ses01-06 (pp7-63) • **Ladybugs** • TG: Act01-05 (pp13-71) • **Mother Opossum and Her Babies** • TG: Act01-03 (pp7-62) • **Organisms** • TG: L01-17 (pp3-182) • **Penguins and Their Young** • TG: Act01-04 (pp5-45) • **Sifting Through Science** • TG: Act01-04 (pp7-56) • **Solids and Liquids** • TG: L01-16 (pp3-136) • **Terrarium Habitats** • TG: Act01-05 (pp5-48) • **Tree Homes** • TG: Act01-06 (pp15-68) • **Weather** • TG: L01-16 (pp3-148)
GRADE LEVEL EXPECTATION	**1.1.7.**	Observe and describe the properties of a variety of non-living materials using the senses (i.e., sight, touch, smell, hearing). • **Organisms** • TG: L01 (pp3-10) • TG: L15-17 (pp155-182)

GRADE LEVEL EXPECTATION	1.1.8.	Use the physical properties of non-living materials (e.g., texture, size, shape, color) to describe similarities and differences. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L02-17 (pp11-140)
GRADE LEVEL EXPECTATION	1.1.9.	Sort, group, and regroup a variety of familiar non-living materials based on their physical properties (e.g., shape, color, texture, size). • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-05 (pp3-42) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • **Investigating Artifacts** • TG: Ses01 (pp7-13) • **Organisms** • TG: L01 (pp3-10) • TG: L02.Exts (pp15-16) • TG: L05.Exts (p59) • TG: L13 (pp135-148) • TG: L14 (pp149-154) • TG: L17 (pp179-182) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Tree Homes** • TG: Act02 (pp25-31) • TG: Act06 (pp65-68) • **Weather** • TG: L03 (pp25-32) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	1.1.10.	Use a hand lens (magnifier) to inspect a variety of non-living materials and demonstrate through discussion or drawings how the lens extends the sense of sight. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats**

		• TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23)
GRADE LEVEL EXPECTATION	1.1.11.	Construct simple class graphs (e.g., pictographs, physical graphs) to organize information. • **Bubble Festival** • TG: Act03 (pp66-73) • **Comparing and Measuring** • TG: L01 (pp3-10) • TG: L04 (pp23-30) • TG: L05 (pp31-42) • TG: L07 (pp49-58) • TG: L09 (pp65-70) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • **Organisms** • TG: L02 (pp11-20) • TG: L03.Exts (pp29-30) • TG: L13-15 (pp135-168) • TG: L16.Exts (pp172-173) • **Sifting Through Science** • TG: Act01-02 (pp7-35) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L10.Exts (p85) • TG: L12 (pp95-100) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Weather** • TG: App-B (pp153-167) • TG: L01-02 (pp3-24) • TG: L04 (pp33-42) • TG: L07-08 (pp63-82) • TG: L10 (pp91-100) • TG: L12 (pp113-122) • TG: L14 (pp129-134) • TG: L15.Exts (p137) • TG: L16 (pp141-148)
GRADE LEVEL EXPECTATION	1.1.12.	Interpret and describe the simple graphs constructed by the class. • **Bubble Festival** • TG: Act03 (pp66-73) • **Comparing and Measuring** • TG: L01 (pp3-10) • TG: L04 (pp23-30) • TG: L05 (pp31-42) • TG: L07 (pp49-58) • TG: L09 (pp65-70) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • **Organisms**

		• TG: L02 (pp11-20) • TG: L03.Exts (pp29-30) • TG: L13-15 (pp135-168) • TG: L16.Exts (pp172-173) • **Sifting Through Science** • TG: Act01-02 (pp7-35) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L10.Exts (p85) • TG: L12 (pp95-100) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Weather** • TG: App-B (pp153-167) • TG: L01-02 (pp3-24) • TG: L04 (pp33-42) • TG: L07-08 (pp63-82) • TG: L10 (pp91-100) • TG: L12 (pp113-122) • TG: L14 (pp129-134) • TG: L15.Exts (p137) • TG: L16 (pp141-148)
GRADE LEVEL EXPECTATION	1.1.13.	Use non-standard units of measure (e.g., string, paper clips) to compare the size and weight of non-living materials. • **Bubble Festival** • TG: Act03 (pp66-73) • **Comparing and Measuring** • TG: L01 (pp3-10) • TG: L03-17 (pp17-120)
GRADE LEVEL EXPECTATION	1.1.15.	Demonstrate that the position of an object can be above or below, in front of or behind, or to the left or right of another object. • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5)
GRADE LEVEL EXPECTATION	1.1.16.	Observe that objects move in different ways such as fast, slow, sideways, zigzag and swaying back and forth. • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Solids and Liquids** • TG: L03-04 (pp19-40) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L09 (pp69-80)
GRADE LEVEL EXPECTATION	1.1.18.	Name and identify objects that can be observed in the sky including the Sun, Moon, and stars and man-

		made objects such as airplanes. • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	1.1.20.	Sort, group, and regroup a variety of earth materials based on their physical properties (e.g., shape, color, texture, size, etc.) to describe their similarities and differences. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09 (pp102-107) • TG: Act11 (pp114-118) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Investigating Artifacts** • TG: Ses01 (pp7-13) • **Solids and Liquids** • TG: L02-03 (pp11-28) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L09 (pp69-80) • TG: L11-12 (pp87-100) • TG: L15 (pp121-130) • **Weather** • TG: L03 (pp25-32) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	1.1.21.	Use a hand lens (magnifier) to inspect a variety of earth materials and demonstrate through discussion or drawings how the lens extends the sense of sight. • **Ant Homes Under the Ground** • TG: Act01-02 (pp7-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23)
GRADE LEVEL EXPECTATION	1.1.22.	Observe and describe the properties of a variety of living and non-living things using the five senses. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L02-17 (pp11-140)

GRADE LEVEL EXPECTATION	1.1.23.	Use the physical properties of living and non-living things to describe their similarities and differences. • **Building Blocks of Science: Sky Watchers** • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4) • **Comparing and Measuring** • TG: L01-17 (pp3-120) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15) • TG: Act02 (pp17-29) • **Organisms** • TG: L01-02 (pp3-20) • TG: L04.Exts (pp43-45) • TG: L05.Exts (p59) • TG: L06 (pp65-74) • TG: L08 (pp87-96) • TG: L09.Exts (p101) • TG: L10-13 (pp105-148) • TG: L15-17 (pp155-182) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L05 (pp43-54) • TG: L12 (pp113-122) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	1.1.24.	Sort, group, and regroup a variety of familiar living and non-living things based on their physical properties (e.g., shape, color, texture, taste, size, etc.). • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-04 (pp3-30) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • TG: Act04 (pp41-47) • **Organisms** • TG: L01 (pp3-10) • TG: L02.Exts (pp15-16) • TG: L05.Exts (p59) • TG: L17 (pp179-182) • **Solids and Liquids** • TG: L02-17 (pp11-140) • **Tree Homes** • TG: Act02 (pp25-31) • TG: Act06 (pp65-68)

GRADE LEVEL EXPECTATION	1.1.25.	Use a hand lens (magnifier) to inspect a variety of living things and demonstrate through discussion and drawings how the lens extends the sense of sight to see structures in greater detail. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23)
GRADE LEVEL EXPECTATION	1.1.26.	Use non-standard units of measure to compare the size and mass of structures of living things (e.g., string around trees, paper clips to measure length of leaves). • **Comparing and Measuring** • TG: L01-04 (pp3-30) • TG: L12 (pp81-86) • TG: L17 (pp117-120) • **Mother Opossum and Her Babies** • TG: Act01 (pp7-29) • **Penguins and Their Young** • TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	1.1.27.	Identify structures on plants and animals and describe how the structure functions (e.g., trees have bark for protection and rabbits have fur to keep them warm). • **Ant Homes Under the Ground** • TG: Act02 (pp15-27) • **Buzzing a Hive** • TG: Les01 (pp5-13) • TG: Les02 (pp15-25) • **Eggs, Eggs, Everywhere** • TG: Act01-04 (pp5-47) • **Hide a Butterfly** • TG: Exts (pp27-28) • TG: Ses01 (pp3-8) • **Ladybugs** • TG: Act01-04 (pp13-63) • **Mother Opossum and Her Babies** • TG: Act01 (pp7-29) • TG: Act02 (pp31-45) • **Organisms** • TG: L07-10 (pp75-118) • TG: L13-15 (pp135-168) • TG: L17 (pp179-182) • **Penguins and Their Young** • TG: Act02 (pp15-31) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **Tree Homes** • TG: Act01 (pp15-23) • TG: Act04 (pp41-49)

		• TG: Act05 (pp51-63)
GRADE LEVEL EXPECTATION	1.1.28.	Observe how the living things in an environment change with the seasons (e.g., trees lose their leaves in the winter). • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	1.1.29.	Observe and describe similarities and differences between parents and offspring (e.g., roots on a mature tree vs. roots on a seedling). Use a hand lens (magnifier) as an appropriate instrument for observing in closer detail. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • TG: Act04 (pp41-47) • **Bubble Festival** • TG: Act08 (pp97-101) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15) • TG: Act02 (pp17-29) • **Hide a Butterfly** • TG: Exts (pp27-28) • TG: Ses03 (pp25-26) • **Ladybugs** • TG: Act03-05 (pp43-71) • **Mother Opossum and Her Babies** • TG: Act02-03 (pp31-62) • **Organisms** • TG: L03.Exts (pp29-30) • TG: L06 (pp65-74) • TG: L10.Exts (p115) • TG: L11-13 (pp119-148) • TG: L16.Exts (pp172-173) • **Penguins and Their Young** • TG: Act02-03 (pp15-37) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23) • TG: Act05 (pp51-63)
GRADE LEVEL EXPECTATION	1.1.30.	Construct, through the use of pictorials, the life cycle of a tree. Describe the tree in different stages of its life cycle. • **Organisms** • TG: L04.Exts (pp43-45) • **Tree Homes** • TG: Act01-06 (pp15-68)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understandings: The development of technology and advancement in science influence each other and drive each other forward.

GRADE LEVEL EXPECTATION	1.2.1.	Use a hand lens (magnifier) to inspect a variety of non-living materials and demonstrate through discussion or drawings how the lens extends the sense of sight. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23)
GRADE LEVEL EXPECTATION	1.2.4.	Describe how the senses can be protected when conducting scientific investigations (e.g., goggles protect eyes, gloves protect hands). • **Ant Homes Under the Ground** • TG: Act01-0 (pp7-73) • **Bubble Festival** • TG: Act01-12 (pp54-1214) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Building Blocks of Science**: **Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-3) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-16 (pp3-116) • **Eggs, Eggs, Everywhere** • TG: Act01-04 (pp5-47) • **Elephants and Their Young** • TG: Act01-04 (pp1-65) • **Hide a Butterfly** • TG: Ses01-03 (pp3-26) • **Investigating Artifacts** • TG: Exts (pp68-69) • TG: Ses01-06 (pp7-63) • **Ladybugs** • TG: Act01-05 (pp13-71) • **Mother Opossum and Her Babies**

		• TG: Act01-03 (pp7-62) • **Organisms** • TG: L01-17 (pp3-182) • **Penguins and Their Young** • TG: Act01-04 (pp5-45) • **Sifting Through Science** • TG: Act01-04 (pp7-56) • **Solids and Liquids** • TG: L01-16 (pp3-136) • **Terrarium Habitats** • TG: Act01-05 (pp5-48) • **Tree Homes** • TG: Act01-06 (pp15-68) • **Weather** • TG: L02.Exts (pp15-16) • TG: Sec3-Safety (pp9-12)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	**2.1.**	Enduring Understandings: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	**2.1.1.**	Observe and describe the properties of a variety of non-living materials using the senses (i.e., sight, touch, smell, hearing). • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L01-17 (pp3-140)
GRADE LEVEL EXPECTATION	**2.1.2.**	Use the physical properties of non-living materials (e.g., texture, size, shape, color) to describe similarities and differences. • **Bubble Festival** • TG: Act05 (pp80-85) • **Building Blocks of Science: Sky Watchers** • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 04 (pp 1-4) • **Comparing and Measuring** • TG: L01-17 (pp3-120) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15) • **Organisms** • TG: L01 (pp3-10) • TG: L04.Exts (pp43-45) • TG: L05.Exts (p59) • TG: L06 (pp65-74) • TG: L08 (pp87-96) • TG: L09.Exts (p101) • TG: L10-13 (pp105-148) • TG: L15-17 (pp155-182) • **Solids and Liquids**

		• TG: L01-17 (pp3-140) • **Weather** • TG: L05 (pp43-54) • TG: L12 (pp113-122) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	**2.1.3.**	Sort, group, and regroup a variety of familiar non-living materials based on their physical properties (e.g., shape, color, texture, size). • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-05 (pp3-42) • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Investigating Artifacts** • TG: Ses01 (pp7-13) • **Organisms** • TG: L01 (pp3-10) • TG: L02.Exts (pp15-16) • TG: L05.Exts (p59) • TG: L13 (pp135-148) • TG: L14 (pp149-154) • TG: L17 (pp179-182) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L03 (pp25-32) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	**2.1.4.**	Use a hand lens (magnifier) to inspect a variety of non-living materials and demonstrate through discussion or drawings how the lens extends the sense of sight. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23)

GRADE LEVEL EXPECTATION	2.1.5.	Construct simple class graphs (e.g., pictographs, physical graphs) to organize information. • **Bubble Festival** • TG: Act03 (pp66-73) • **Comparing and Measuring** • TG: L01 (pp3-10) • TG: L04-05 (pp23-42) • TG: L07 (pp49-58) • TG: L09 (pp65-70) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • **Organisms** • TG: L02 (pp11-20) • TG: L03.Exts (pp29-30) • TG: L13-15 (pp135-168) • TG: L16.Exts (pp172-173) • **Sifting Through Science** • TG: Act01 (pp7-22) • TG: Act02 (pp25-35) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L10.Exts (p85) • TG: L12 (pp95-100) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Weather** • TG: App-B (pp153-167) • TG: L01-02 (pp3-24) • TG: L04 (pp33-42) • TG: L07-08 (pp63-82) • TG: L10 (pp91-100) • TG: L12 (pp113-122) • TG: L14 (pp129-134) • TG: L15.Exts (p137) • TG: L16 (pp141-148)
GRADE LEVEL EXPECTATION	2.1.6.	Interpret and describe simple graphs constructed by the class. • **Bubble Festival** • TG: Act03 (pp66-73) • **Comparing and Measuring** • TG: L01 (pp3-10) • TG: L04-05 (pp23-42) • TG: L07 (pp49-58) • TG: L09 (pp65-70) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • **Organisms** • TG: L02 (pp11-20) • TG: L03.Exts (pp29-30) • TG: L13-15 (pp135-168) • TG: L16.Exts (pp172-173) • **Sifting Through Science** • TG: Act01 (pp7-22)

		• TG: Act02 (pp25-35) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L10.Exts (p85) • TG: L12 (pp95-100) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Weather** • TG: App-B (pp153-167) • TG: L01-02 (pp3-24) • TG: L04 (pp33-42) • TG: L07-08 (pp63-82) • TG: L10 (pp91-100) • TG: L12 (pp113-122) • TG: L14 (pp129-134) • TG: L15.Exts (p137) • TG: L16 (pp141-148)
GRADE LEVEL EXPECTATION	**2.1.7.**	Use non-standard units of measure (e.g., string, paper clips) to compare the size and weight of non-living materials. • **Bubble Festival** • TG: Act03 (pp66-73) • **Comparing and Measuring** • TG: L01 (pp3-10) • TG: L03-17 (pp17-120)
GRADE LEVEL EXPECTATION	**2.1.8.**	Observe and describe changes in the physical properties of objects that occur when they are exposed to a variety of treatments (i.e., temperature, sunlight, water). • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L09.Exts (p73) • TG: L10.Exts (p85) • TG: L12.Exts (p98) • TG: L15.Exts (p124) • TG: L17 (pp137-140) • **Weather** • TG: L05.Exts (pp47-48) • TG: L08.Exts (p76) • TG: L11 (pp101-112) • TG: L13.Exts (p126)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.1.**	Enduring Understandings: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and with energy fields (potential energy).
GRADE LEVEL EXPECTATION	**3.1.1.**	Recognize that the Sun warms and lights the Earth. • **Building Blocks of Science: Sky Watchers**

		• TG: Act 03 (pp 1-6)
GRADE LEVEL EXPECTATION	3.1.2.	Recognize that air surrounds us and that moving air (wind) has energy that can make things move. • **Weather** • TG: L04 (pp33-42)
CONTENT STANDARD	DE.3.	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.2.	Enduring Understandings: Changes take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the transfer of the different forms of energy.
GRADE LEVEL EXPECTATION	3.2.1.	Demonstrate that the position of an object can be above or below, in front of or behind, or to the left or right of another object. • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5)
GRADE LEVEL EXPECTATION	3.2.2.	Observe that objects move in different ways such as fast, slow, sideways, zigzag, and swaying back and forth. • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Solids and Liquids** • TG: L03-04 (pp19-40) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L09 (pp69-80)
CONTENT STANDARD	DE.3.	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.3.	Enduring Understandings: Energy readily transforms from one form to another, but these transformations are not always reversible. The details of these transformations depend upon the initial form of the energy and the properties of the materials involved. Energy may transfer into or out of a system and it may change forms, but the total energy cannot change.
GRADE LEVEL EXPECTATION	3.3.1.	Using the sense of touch, recognize that objects placed in direct sunlight feel warmer than objects in the shade. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Light** • TG: Act 01 (pp 1-4) • TG: Act 05 (pp 1-3) • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** TG: L13.Exts (pp104-105) • **Weather** • TG: L05.Exts (pp47-48) • TG: L08.Exts (p76)

CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	**4.1.**	Enduring Understandings: There are observable, predictable patterns of movement in the Earth, Moon, and Sun system that account for day and night.
GRADE LEVEL EXPECTATION	**4.1.2.**	Name and identify objects that can be observed in the sky including the Sun, Moon, and stars and man-made objects such as airplanes. • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	**4.1.3.**	Describe the repeating cyclic pattern of day and night and include in this description that we can see the Sun only during the daytime. • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.1.**	Enduring Understandings: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	**5.1.1.**	Observe and describe the properties of a variety of earth materials (i.e., rock, soil, sand, water) using the senses. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L02-17 (pp11-140)
GRADE LEVEL EXPECTATION	**5.1.2.**	Sort, group, and regroup a variety of earth materials based on their physical properties (e.g., shape, color, texture, size, etc.) to describe their similarities and differences. • **Bubble Festival** • TG: Act01-03 (pp54-73) • TG: Act05 (pp80-85) • TG: Act09 (pp102-107) • TG: Act11 (pp114-118) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Investigating Artifacts** • TG: Ses01 (pp7-13) • **Solids and Liquids** • TG: L02 (pp11-18) • TG: L03 (pp19-28) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L09 (pp69-80) • TG: L11 (pp87-94) • TG: L12 (pp95-100)

		• TG: L15 (pp121-130) • **Weather** • TG: L03 (pp25-32) • TG: L14 (pp129-134)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.3.**	Enduring Understandings: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	**5.3.1.**	Use a hand lens (magnifier) to inspect a variety of earth materials and demonstrate through discussion or drawings how the lens extends the sense of sight. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.1.**	Enduring Understandings: Living systems demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	**6.1.1.**	Observe and describe the properties of a variety of living and non-living things using the five senses. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L01-17 (pp3-140)
GRADE LEVEL EXPECTATION	**6.1.2.**	Identify the five sense structures and tell which sense is associated with which structure. • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L05.Exts (pp43-45)
GRADE LEVEL EXPECTATION	**6.1.3.**	Use the physical properties of living and non-living things to describe their similarities and differences. • **Building Blocks of Science: Sky Watchers** • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4) • **Comparing and Measuring** • TG: L01-17 (pp3-120) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15)

		• TG: Act02 (pp17-29) • **Organisms** • TG: L01 (pp3-182) • TG: L02 (pp11-20) • TG: L04.Exts (pp43-45) • TG: L05.Exts (p59) • TG: L06 (pp65-74) • TG: L09.Exts (p101) • TG: L10-17 (pp105-182) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L05 (pp43-54) • TG: L12 (pp113-122) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	6.1.4.	Sort, group, and regroup a variety of familiar living and non-living things based on their physical properties (e.g., shape, color, texture, taste, size, etc.). • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: L01-04 (pp3-30) • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29) • TG: Act04 (pp41-47) • **Organisms** • TG: L01 (pp3-10) • TG: L02.Exts (pp15-16) • TG: L05.Exts (p59) • TG: L17 (pp179-182) • **Solids and Liquids** • TG: L02-17 (pp11-140) • **Tree Homes** • TG: Act02 (pp25-31) • TG: Act06 (pp65-68)
GRADE LEVEL EXPECTATION	6.1.5.	Use a hand lens (magnifier) to inspect a variety of living things and demonstrate through discussion and drawings how the lens extends the sense of sight to see structures in greater detail. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13)

		• **Tree Homes** • TG: Act01 (pp15-23)
GRADE LEVEL EXPECTATION	6.1.6.	Use non-standard units of measure to compare the size and mass of structures of living things (e.g., string around trees, paper clips to measure length of leaves). • **Comparing and Measuring** • TG: L01-04 (pp3-30) • TG: L12 (pp81-86) • TG: L12.Exts (p84) • TG: L17 (pp117-120) • **Mother Opossum and Her Babies** • TG: Act01 (pp7-29) • **Penguins and Their Young** • TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	6.1.7.	Identify structures on plants and animals and describe how the structure functions (e.g., trees have bark for protection and rabbits have fur to keep them warm). • **Ant Homes Under the Ground** • TG: Act02 (pp15-27) • **Buzzing a Hive** • TG: Les01 (pp5-13) • TG: Les02 (pp15-25) • **Eggs, Eggs, Everywhere** • TG: Act01-04 (pp5-47) • **Hide a Butterfly** • TG: Exts (pp27-28) • TG: Ses01 (pp3-8) • **Ladybugs** • TG: Act01-04 (pp13-63) • **Mother Opossum and Her Babies** • TG: Act01 (pp7-29) • TG: Act02 (pp31-45) • **Organisms** • TG: L07-10 (pp75-118) • TG: L13-15 (pp135-168) • TG: L17 (pp179-182) • **Penguins and Their Young** • TG: Act02 (pp15-31) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **Tree Homes** • TG: Act01 (pp15-23) • TG: Act04 (pp41-49) • TG: Act05 (pp51-63)
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.2.	Enduring Understandings: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	6.2.1.	Identify the basic needs that plants and animals need to survive including light, air, water, and nutrients. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13)

		• Organisms • TG: L03-04 (pp21-52) • TG: L06-10 (pp65-118) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **Tree Homes** • TG: Act04 (pp41-49) • **Weather** • TG: L10.Exts (p95)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.3.**	Enduring Understandings: Organisms respond to and internal external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	**6.3.1.**	Describe how the five senses help humans react to their environment, (e.g., hear a whistle and line up, feel cold air and put on a jacket). • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L05.Exts (pp43-45)
GRADE LEVEL EXPECTATION	**6.3.2.**	Observe how the living things in an environment change with the seasons (e.g., trees lose their leaves in the winter). • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.4.**	Enduring Understandings: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	**6.4.1.**	Describe how the senses can be protected when conducting scientific investigations, e.g. goggles protect eyes, gloves protect hands. • **Ant Homes Under the Ground** • TG: Act01-05 (pp7-73) • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Building Blocks of Science: Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-3) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body**

		• TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Comparing and Measuring** • TG: Sec3-Safety (pp8-11) • **Eggs, Eggs, Everywhere** • TG: Act01-04 (pp5-47) • **Elephants and Their Young** • TG: Act01-04 (pp1-65) • **Hide a Butterfly** • TG: Ses01-03 (pp3-26) • **Investigating Artifacts** • TG: Ses01-06 (pp7-63) • **Ladybugs** • TG: Act01-05 (pp13-71) • **Mother Opossum and Her Babies** • TG: Act01-03 (pp7-62) • **Organisms** • TG: Sec3-Safety (pp19-24) • **Penguins and Their Young** • TG: Act01-04 (pp5-45) • **Sifting Through Science** • TG: Act01-04 (pp7-56) • **Solids and Liquids** • TG: Sec3-Safety (pp9-18) • **Terrarium Habitats** • TG: Act01-05 (pp5-48) • **Tree Homes** • TG: Act01-06 (pp15-68) • **Weather** • TG: L02.Exts (pp15-16) • TG: Sec3-Safety (pp9-12)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.1.**	Enduring Understandings: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	**7.1.1.**	Observe and describe similarities and differences between parents and offspring (e.g., roots on a mature tree vs. roots on a seedling). Use a hand lens (magnifier) as an appropriate instrument for observing in closer detail. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • TG: Act04 (pp41-47) • **Bubble Festival** • TG: Act08 (pp97-101) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15) • TG: Act02 (pp17-29) • **Hide a Butterfly**

		• TG: Exts (pp27-28) • TG: Ses03 (pp25-26) • **Ladybugs** • TG: Act03-05 (pp43-71) • **Mother Opossum and Her Babies** • TG: Act02 (pp31-45) • TG: Act03 (pp47-62) • **Organisms** • TG: L03.Exts (pp29-30) • TG: L06 (pp65-74) • TG: L10.Exts (p115) • TG: L11-13 (pp119-148) • TG: L16.Exts (pp172-173) • **Penguins and Their Young** • TG: Act02 (pp15-31) • TG: Act03 (pp33-37) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23) • TG: Act05 (pp51-63)
GRADE LEVEL EXPECTATION	7.1.2.	Realize that organisms reproduce organisms of the same kind (e.g., dogs have puppies). • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4)
GRADE LEVEL EXPECTATION	7.1.3.	Construct, through the use of pictorials, the life cycle of a tree. Describe the tree in different stages of its life cycle. • **Organisms** • TG: L04.Exts (pp43-45) • **Tree Homes** • TG: Act01-06 (pp15-68)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understandings: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with advantageous traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	Recognize that there are many different kinds of trees in the world. While there are many similarities and differences among the trees, they are all trees. • **Organisms** • TG: L04.Exts (pp43-45) • **Tree Homes** • TG: Act01-06 (pp15-68)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.3.	Enduring Understandings: The development of technology has allowed us to apply our knowledge of genetics, reproduction, development and evolution to meet human wants and needs.
GRADE LEVEL EXPECTATION	7.3.1.	Identify and list the many different ways in which trees are used by people to meet human wants and needs (i.e., food, shelter, shade, paper products, wood for fuel, furniture, etc.).

		• **Organisms** • TG: L04.Exts (pp43-45) • **Tree Homes** • TG: Act01-06 (pp15-68)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.1.**	Enduring Understandings: Organisms and their environments are interconnected. Changes in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	**8.1.1.**	Recognize that humans interact with the environment through the use of their five senses. • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Solids and Liquids** • TG: L05.Exts (pp43-45)
GRADE LEVEL EXPECTATION	**8.1.2.**	Identify ways in which living organisms interact with each other and their environment (e.g., birds nest in trees, birds eat worms). • **Buzzing a Hive** • TG: Exts (p67) • TG: Les04 (pp39-53) • TG: Les05 (pp55-59) • **Hide a Butterfly** • TG: Ses01 (pp3-8) • TG: Ses02 (pp11-22) • **Ladybugs** • TG: Act01 (pp13-31) • TG: Act02 (pp33-41) • TG: Act05 (pp65-71) • **Organisms** • TG: L04.Exts (pp43-45) • TG: L11 (pp119-126) • TG: L12 (pp127-134) • TG: L14.Exts (pp152-153) • **Penguins and Their Young** • TG: Act03 (pp33-37) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.2.**	Enduring Understandings: Matter needed to sustain life is continually recycled among and between organisms and the environment. Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.
GRADE LEVEL EXPECTATION	**8.2.2.**	Enduring Understandings: Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system. • **Solids and Liquids** • TG: L14.Exts (p114)
GRADE LEVEL EXPECTATION	**8.2.3.**	Recognize that trees are replanted in an attempt to replace those that are cut down. • **Organisms** • TG: L04.Exts (pp43-45) • **Tree Homes**

		• TG: Act01-06 (pp15-68)

Grade 1

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Generate questions and predictions using observations and exploration about the natural world. • **All Units**
GRADE LEVEL EXPECTATION	1.1.2.	Generate and follow simple plans using systematic observations to explore questions and predictions. • **Building Blocks of Science: Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5)
GRADE LEVEL EXPECTATION	1.1.3.	Collect data using observations, simple tools and equipment. Record data in tables, charts, and bar graphs. Compare data with others to examine and question results. • **All Units**
GRADE LEVEL EXPECTATION	1.1.4.	Construct a simple explanation by analyzing observational data. Revise the explanation when given new evidence or information gained from other resources or from further investigation. • **Balancing and Weighing** • TG: L05 (pp35-44) • TG: L06 (pp45-54) • TG: L12.Exts (p104) • TG: L15 (pp123-128) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • **Changes** • TG: L04 (pp43-52) • TG: L05 (pp53-62) • **Comparing and Measuring** • TG: L15 (pp99-110) • **Organisms** • TG: L01 (pp3-10)

		• TG: L02 (pp11-20) • TG: L04 (pp37-52) • TG: L05 (pp53-64) • TG: L17 (pp179-182) • **Secret Formulas** • TG: Exts (p99) • TG: Ses02-09 (pp27-97) • **Sifting Through Science** • TG: Act01-04 (pp7-56) • **Solids and Liquids** • TG: L01-03 (pp3-28) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L07-10 (pp55-86) • TG: L14.Exts (p114) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Weather** • TG: L01 (pp3-10) • TG: L05.Exts (pp47-48) • TG: L15-17 (pp135-150)
GRADE LEVEL EXPECTATION	**1.1.5.**	Share simple plans, data, and explanations with an audience and justify the results using the evidence from the investigation. • **Balancing and Weighing** • TG: L01-17 (pp3-138) • **Building Blocks of Science: Light** • TG: Act 05 (pp 1-3) • **Organisms** • TG: L03-16 (pp21-78) • **Soils** • TG: L01-17 (pp3-172) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L09 (pp69-80) • TG: L11.Exts (p92) • TG: L17 (pp137-140) • **The Life Cycle of Butterflies** • TG: L01-16 (pp3-96) • **Weather** • TG: L01-17 (pp3-150)
GRADE LEVEL EXPECTATION	**1.1.6.**	Use mathematics, reading, writing, and technology when conducting an investigation and communicating the results. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.7.**	Conduct simple investigations to identify the physical properties (e.g., ability to sink or float, dissolve in water, roll or stack) of solids and liquids. Record the results on charts, diagrams, graphs, and/or drawings. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Balancing and Weighing** • TG: L12 (pp101-106)

		• **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Changes** • TG: L01 (pp3-20) • TG: L11 (pp103-110) • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Organisms** • TG: L11-13 (pp119-148) • TG: L15 (pp155-168) • **Secret Formulas** • TG: Ses01-09 (pp15-97) • **Sifting Through Science** • TG: Act01 (pp7-22) • **Soils** • TG: L01-08 (pp3-86) • TG: L17 (pp169-172) • **Solids and Liquids** • TG: L01-17 (pp3-140) • The Life Cycle of Butterflies • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	**1.1.8.**	Sort and group solids based on physical properties such as color, shape, ability to roll or stack, hardness, magnetic attraction, or whether they sink or float in water. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Balancing and Weighing** • TG: L03.Exts (p20) • TG: L08-09 (pp61-78) • TG: L10.Exts (pp84-85) • TG: L11.Exts (p94) • TG: L12 (pp101-106) • TG: L13 (pp107-114) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Changes** • TG: L01-02 (pp3-30) • TG: L04-07 (pp43-52) • TG: L09-11 (pp85-110) • TG: L13.Exts (p123) • TG: L14 (pp129-136) • TG: L17 (pp155-158) • **Comparing and Measuring** • TG: L01-04 (pp3-47) • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47)

		• **Investigating Artifacts** • TG: Ses01 (pp7-13) • **Liquid Explorations** • TG: Act01 (pp5-13) • **Organisms** • TG: L01 (pp3-10) • TG: L02.Exts (pp15-16) • TG: L05.Exts (p59) • TG: L13 (pp135-148) • TG: L14 (pp149-154) • TG: L17 (pp179-182) • **Sifting Through Science** • TG: Act01 (pp7-22) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **The Life Cycle of Butterflies** • TG: L02 (pp11-18) • TG: L10 (pp63-68) • TG: L14 (pp85-88) • TG: L15 (pp89-94) • **Weather** • TG: L03 (pp25-32) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	1.1.9.	Compare and describe similarities and differences in physical properties of various solid objects. • **Bubble Festival** • TG: Act03 (pp66-73) • **Changes** • TG: L01-02 (pp3-30) • TG: L04-07 (pp43-78) • TG: L09-11 (pp85-110) • TG: L13.Exts (p123) • TG: L14 (pp129-136) • TG: L17 (pp155-158) • **Penguins and Their Young** • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L01-09 (pp3-80) • TG: L12.Exts (p98) • TG: L16-17 (pp131-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.10.	Sort and group liquids based on physical properties such as color, odor, tendency to flow, and whether they sink, or float. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Changes** • TG: L01-03 (pp3-42) • TG: L06 (pp63-70) • TG: L09.Exts (pp89-90) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Liquid Explorations**

		• TG: Act01-05 (pp5-49) • **Solids and Liquids** • TG: L09.Exts (p73) • TG: L10-17 (pp81-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.11.	Compare and describe similarities and differences in physical properties of various liquids. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Changes** • TG: L01-03 (pp3-42) • TG: L06 (pp63-70) • TG: L09.Exts (pp89-90) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act01-05 (pp5-49) • **Solids and Liquids** • TG: L09.Exts (p73) • TG: L10-17 (pp81-140) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Weather** • TG: L10.Exts (p95) • TG: L11 (pp101-112)
GRADE LEVEL EXPECTATION	1.1.12.	Construct individual and class diagrams (e.g., Venn, pictographs) to compare the similarities and differences between the properties of solids and liquids. • **Bubble Festival** • TG: Act03 (pp66-73) • **Changes** • TG: L01 (pp3-20) • **Penguins and Their Young** • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.13.	Observe and describe **Changes** in the physical properties of solids and liquids after exposure to various treatments (i.e., temperature, sunlight, water). • **Changes** • TG: L01-04 (pp3-52) • TG: L08.Exts (p82) • TG: L09 (pp85-94) • TG: L12 (pp111-118) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act03 (pp25-31) • **Penguins and Their Young**

		• TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L09.Exts (p73) • TG: L10.Exts (p85) • TG: L12.Exts (p98) • TG: L15.Exts (p124) • TG: L17 (pp137-140) • **Weather** • TG: L05.Exts (pp47-48) • TG: L08.Exts (p76) • TG: L11 (pp101-112) • TG: L13.Exts (p126)
GRADE LEVEL EXPECTATION	1.1.14.	Use writing, drawing, and discussion to communicate observations, descriptions, investigations, and experiences concerning solids and liquids. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Changes** • TG: L01-07 (pp3-78) • TG: L09-11 (pp85-110) • TG: L13.Exts (p123) • TG: L14 (pp129-136) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act01-05 (pp5-49) • **Penguins and Their Young** • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.15.	Observe that heat energy makes things warmer. • **Bubble Festival** • TG: Act10 (pp108-113) • **Changes** • TG: L02 (pp21-30) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L13.Exts (pp104-105) • **Weather** • TG: L05.Exts (pp47-48) • TG: L08.Exts (p76)
GRADE LEVEL EXPECTATION	1.1.16.	Observe the evidence of the force of air pushing on objects and materials such as pinwheels and kites. Compare how the direction and speed (fast, slow) of the moving air affects the motion of the objects. • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Solids and Liquids** • TG: L03-04 (pp19-40)

		• TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L09 (pp69-80)
GRADE LEVEL EXPECTATION	1.1.17.	Observe and measure the temperature of hot and cold water. Investigate what happens when hot and cold water are mixed. Record data on a graph and use the data to summarize the results. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Changes** • TG: L02 (pp21-30) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L13.Exts (pp104-105) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L05-09 (pp43-90)
GRADE LEVEL EXPECTATION	1.1.18.	Investigate what happens to the temperature of an object when it is placed in direct sunlight. Record data and conclude that the energy in the sunlight was changed into heat energy in the object. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Changes** • TG: L02 (pp21-30) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L13.Exts (pp104-105) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L05-09 (pp43-90)
GRADE LEVEL EXPECTATION	1.1.19.	Compare what happens when sunlight strikes dark and light colored objects. Draw conclusions that dark colored objects feel warmer and increase more in temperature in sunlight than do light colored objects. • **Bubble Festival** • TG: Act05 (pp80-85) • **Building Blocks of Science: Light** • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-3) • **Changes** • TG: L10 (pp95-102) • **Weather** • TG: L09 (pp83-90)

GRADE LEVEL EXPECTATION	1.1.20.	List objects that can be observed in the sky in the daytime and objects that can be observed in the sky at nighttime. Discuss which objects are on which lists (e.g., the Moon can be observed sometimes in the day and sometimes at night). • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	1.1.21.	Safely observe the location of the Sun at the same time in the morning, noon, and afternoon over several days. Describe the Sun's movement across the sky over the course of the day. • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	1.1.22.	Observe the Moon in the day sky over several months. Draw a sequence of pictures that shows the repeating cyclic pattern of the Moon. • **Building Blocks of Science: Sky Watchers** • TG: Act 04 (pp 1-7)
GRADE LEVEL EXPECTATION	1.1.23.	Use simple models to demonstrate how Earth's rotation causes day and night. • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7)
GRADE LEVEL EXPECTATION	1.1.24.	Keep daily records of weather conditions (wind speed, type and amount of precipitation, cloud cover and type, temperature) and use these records to identify patterns over short and long periods of time. • **Weather** • TG: L03-05 (pp25-54) • TG: L07 (pp63-70) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	1.1.25.	Demonstrate that there is air all around and that the wind is moving air. Use instruments to qualitatively measure wind speed and describe this by using a simplified Beaufort scale. • **Weather** • TG: L04-07 (pp33-70) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	1.1.26.	Use a thermometer to measure temperature in degrees Fahrenheit. Describe how hot or cold an object or weather event feels by using a thermometer. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167)

		• TG: L05-09 (pp43-90)
GRADE LEVEL EXPECTATION	1.1.27.	Identify three basic cloud types (cirrus, cumulus, stratus) all of which are made of water and/or ice. Conclude that wind moves clouds in the sky. • **Weather** • TG: L13 (pp123-128) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	1.1.28.	Use a rain gauge to measure precipitation and describe how this measurement would change when frozen precipitation such as snow or ice melts. • **Weather** • TG: L03-07 (pp25-70) • TG: L10 (pp91-100)
GRADE LEVEL EXPECTATION	1.1.29.	Organize weather data on graphs and on long-term data collection charts and use this data to describe typical seasonal weather patterns. • **Weather** • TG: L03-07 (pp25-70) • TG: L10 (pp91-100) • TG: L15 (pp135-140)
GRADE LEVEL EXPECTATION	1.1.30.	Describe different weather conditions and discuss how these conditions affect plants, animals, and human activity. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01 (pp3-10) • TG: L06 (pp55-62) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	1.1.31.	Select the hand lens as an appropriate instrument for observing the structure of aquatic and terrestrial organisms in greater detail. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Solids and Liquids** • TG: L11.Exts (p92) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** • TG: Act01 (pp15-23) • **The Life Cycle of Butterflies** • TG: L01.Exts (p7) • TG: L11.Exts (pp71-73)
GRADE LEVEL EXPECTATION	1.1.32.	Observe individuals of the same plant or animal group. Describe physical differences (e.g., size, color,

		shape, markings). • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47)
GRADE LEVEL EXPECTATION	1.1.33.	Identify and describe structures of plants and animals that help them survive in aquatic and terrestrial environments. • **Organisms** • TG: L05 (pp53-64)
GRADE LEVEL EXPECTATION	1.1.34.	Sort and group plants and animals based on the structures that enable them to function in their environment (e.g., animals that have fins for swimming versus animals that have legs for movement on land). • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29)
GRADE LEVEL EXPECTATION	1.1.35.	Compare and contrast the observable structures of humans to those of other animals and plants. Record and communicate the similarities and differences in their structures. • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4)
GRADE LEVEL EXPECTATION	1.1.36.	Observe a variety of plants and animals and identify basic needs that are common to plants or animals of the same group, such as food, water, air, shelter, space and light. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • **Organisms** • TG: L03-04 (pp21-52) • TG: L06-10 (pp65-118) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Soils** • TG: L09 (pp87-96) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **Tree Homes** • TG: Act04 (pp41-49) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-52) • TG: L10-12 (pp63-80) • TG: L15-16 (pp89-96) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.37.	Using the senses to detect environmental conditions, respond by selecting the appropriate clothing for certain weather conditions based on temperature, wind speed, cloud cover and/or precipitation. Justify the selection of clothing and activity. • **Tree Homes** • TG: Act03 (pp33-39)

		• **Weather** • TG: L01 (pp3-10) • TG: L06 (pp55-62) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	1.1.38.	Design terrestrial and aquatic habitats that provide healthy environments for the plant and animal inhabitants. • **Ant Homes Under the Ground** • TG: Act01-05 (pp7-73) • **Organisms** • TG: L03-04 (pp21-52) • TG: L05.Exts (p59) • TG: L06-13 (pp65-148) • TG: L15-16 (pp155-178) • **Soils** • TG: L09 (pp87-96) • **Terrarium Habitats** • TG: Act01-05 (pp5-48) • **Tree Homes** • TG: Act04 (pp41-49) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-52) • TG: L10-12 (pp63-80) • TG: L15-16 (pp89-96) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.39.	Recognize that organisms change over time. Record and communicate **Changes** observed in living things over time. • **Ant Homes Under the Ground** • TG: Act04 (pp41-47) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15) • TG: Act02 (pp17-29) • **Ladybugs** • TG: Act03-05 (pp43-71) • **Mother Opossum and Her Babies** • TG: Act02 (pp31-45) • TG: Act03 (pp47-62) • **Organisms** • TG: L03.Exts (pp29-30) • TG: L06 (pp65-74) • TG: L10.Exts (p115) • TG: L11-13 (pp119-148) • TG: L1617 (pp169-182) • **Soils** • TG: L16.Exts (pp164-166) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110)

		• TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	1.1.40.	Construct, through the use of pictorials, the life cycle of guppies. Describe the guppy in different stages of its life cycle. • **Eggs, Eggs, Everywhere** • TG: Act03 (pp31-39) • **Organisms** • TG: L08 (pp87-96) • **The Life Cycle of Butterflies** • TG: L03.Exts (p21)
GRADE LEVEL EXPECTATION	1.1.41.	Describe similarities and differences between parents and offspring, such as size and color. • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4)
GRADE LEVEL EXPECTATION	1.1.42.	Recognize that there are many different kinds of plants and animals in the world. Sort terrestrial animals from aquatic animals. Identify the characteristics used to separate the terrestrial from aquatic animals. • **Organisms** • TG: L05 (pp53-64)
GRADE LEVEL EXPECTATION	1.1.43.	Describe the impact weather conditions (e.g., sun, fog, rain, snow) have on plant and animal activities. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01 (pp3-10) • TG: L06 (pp55-62) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	1.1.44.	Identify the number of different kinds of living things in an aquatic or terrestrial environment. Recognize that living things coexist in these environments. • **Buzzing a Hive** • TG: Exts (p67) • **Eggs, Eggs, Everywhere** • TG: Act01-03 (pp5-39) • Organisms • TG: L04-06 (pp37-74) • TG: L11.Exts (pp122-123) • TG: L12.Exts (p131) • TG: L13-14 (pp135-154) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **Tree Homes** • TG: Act01 (pp15-23) • TG: Act06 (pp65-68) • **The Life Cycle of Butterflies** • TG: L02.Exts (pp14-15) • **Weather**

		• TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.46.	Describe how terrestrial plants and animals interact with each other and their environment (e.g., millipedes eat decaying bark). • **Buzzing a Hive** • TG: Exts (p67) • TG: Les04 (pp39-53) • TG: Les05 (pp55-59) • **Ladybugs** • TG: Act05 (pp65-71) • **Organisms** • TG: L04.Exts (pp43-45) • TG: L11 (pp119-126) • TG: L12 (pp127-134) • TG: L14.Exts (pp152-153) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: L10 (pp63-68)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understandings: The development of technology and advancement in science influence each other and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Observe that sunlight can be used to heat the inside of homes and other buildings by allowing the sunlight to pass through windows. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Investigating Artifacts** • TG: Ses01-06 (pp7-63)
GRADE LEVEL EXPECTATION	1.2.2.	Select and use appropriate instruments such as wind scales, thermometers, cloud charts, and rain gauges to measure weather conditions. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L03-10 (pp25-100) • TG: L15 (pp135-140)
GRADE LEVEL EXPECTATION	1.2.3.	Identify a meteorologist as a scientist who uses technology to study, observe, and record information about the weather and who uses this information to forecast the weather. Use weather forecasts to make decisions such as choice of clothing or outdoor activities. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01-02 (pp3-24) • TG: L06 (pp55-62) • TG: L15-17 (pp135-150)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.1.	Enduring Understandings: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	2.1.1.	Conduct simple investigations to identify the physical properties (e.g., ability to sink or float, dissolve in water, roll or stack) of solids and liquids. Record the results on charts, diagrams, graphs, and/or drawings. • **Bubble Festival** • TG: Act01-05 (pp54-85) • TG: Act09-12 (pp102-124) • **Balancing and Weighing** • TG: L12 (pp101-106) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Changes** • TG: L01 (pp3-20) • TG: L11 (pp103-110) • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Organisms** • TG: L11-13 (pp119-148) • TG: L15 (pp155-168) • **Secret Formulas** • TG: Ses01-09 (pp15-97) • **Sifting Through Science** • TG: Act01 (pp7-22) • **Soils** • TG: L01 (pp3-16) • TG: L03-08 (pp27-86) • TG: L17 (pp169-172) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **The Life Cycle of Butterflies** • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	2.1.2.	Sort and group solids based on physical properties such as color, shape, ability to roll or stack, hardness, magnetic attraction, or whether they sink or float in water. • **All Units**
GRADE LEVEL EXPECTATION	2.1.3.	Compare and describe similarities and differences in physical properties of various solid objects. • **Bubble Festival** • TG: Act03 (pp66-73) • **Changes** • TG: L01 (pp3-20) • **Penguins and Their Young** • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	2.1.4.	Sort and group liquids based on physical properties such as color, odor, tendency to flow, and whether they sink, or float.

		• **Bubble Festival** • TG: Act01-12 (pp54-124) • **Changes** • TG: L01-03 (pp3-42) • TG: L06 (pp63-70) • TG: L09.Exts (pp89-90) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act01-05 (pp5-49) • Solids and Liquids • TG: L09.Exts (p73) • TG: L10-17 (pp81-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	**2.1.5.**	Compare and describe similarities and differences in physical properties of various liquids. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Changes** • TG: L01-03 (pp3-42) • TG: L06 (pp63-70) • TG: L08 (pp79-84) • TG: L09.Exts (pp89-90) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act01-05 (pp5-49) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L09.Exts (p73) • TG: L10-17 (pp81-140) • **Weather** • TG: L10.Exts (p95) • TG: L11 (pp101-112)
GRADE LEVEL EXPECTATION	**2.1.6.**	Construct individual and class diagrams (e.g., Venn, pictographs) to compare the similarities and differences between the properties of solids and liquids. • **Bubble Festival** • TG: Act03 (pp66-73) • **Changes** • TG: L01 (pp3-20) • **Penguins and Their Young** • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	**2.1.7.**	Observe and describe **Changes** in the physical properties of solids and liquids after exposure to various treatments (i.e., temperature, sunlight, water).

		• **Changes** • TG: L01-04 (pp3-52) • TG: L08.Exts (p82) • TG: L09 (pp85-94) • TG: L12 (pp111-118) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act03 (pp25-31) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L09.Exts (p73) • TG: L10.Exts (p85) • TG: L12.Exts (p98) • TG: L15.Exts (p124) • TG: L17 (pp137-140) • **Weather** • TG: L05.Exts (pp47-48) • TG: L08.Exts (p76) • TG: L11 (pp101-112) • TG: L13.Exts (p126)
GRADE LEVEL EXPECTATION	**2.1.8.**	Use writing, drawing, and discussion to communicate observations, descriptions, investigations, and experiences concerning solids and liquids. • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Changes** • TG: L01-11 (pp3-110) • TG: L13.Exts (p123) • TG: L14 (pp129-136) • TG: L17 (pp155-158) • **Liquid Explorations** • TG: Act01-05 (pp5-49) • **Penguins and Their Young** • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L01-17 (pp3-140) • **Weather** • TG: L10.Exts (p95)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.1.**	Enduring Understandings: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and with energy fields (potential energy).
GRADE LEVEL EXPECTATION	**3.1.1.**	Identify the Sun as the source of energy that warms and lights the Earth. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6)
GRADE LEVEL EXPECTATION	**3.1.3.**	Observe that heat energy makes things warmer. • **Bubble Festival**

		• TG: Act10 (pp108-113) • **Changes** • TG: L02 (pp21-30) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L13.Exts (pp104-105) • **Weather** • TG: L05.Exts (pp47-48) • TG: L08.Exts (p76)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.2.**	Enduring Understandings: **Changes** take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the transfer of the different forms of energy.
GRADE LEVEL EXPECTATION	**3.2.1.**	Observe the evidence of the force of air pushing on objects and materials such as pinwheels and kites. Compare how the direction and speed (fast, slow) of the moving air affects the motion of the objects. • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47) • **Solids and Liquids** • TG: L03 (pp19-28) • TG: L04 (pp29-40) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L09 (pp69-80)
GRADE LEVEL EXPECTATION	**3.2.2.**	Observe and measure the temperature of hot and cold water. Investigate what happens when hot and cold water are mixed. Record data on a graph and use the data to summarize the results. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Changes** • TG: L02 (pp21-30) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L13.Exts (pp104-105) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L05-09 (pp43-90)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.3.**	Enduring Understandings: Energy readily transforms from one form to another, but these transformations are not always reversible. The details of these transformations depend upon the initial form of the energy and the properties of the materials involved. Energy may transfer into or out of a system and it may change forms, but the total energy cannot change.
GRADE LEVEL EXPECTATION	**3.3.1.**	Investigate what happens to the temperature of an object when it is placed in direct sunlight. Record data and conclude that the energy in the sunlight was changed into heat energy in the object.

		• **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Changes** • TG: L02 (pp21-30) • **Penguins and Their Young** • TG: Act01 (pp5-13) • TG: Act04 (pp39-45) • **Solids and Liquids** • TG: L13.Exts (pp104-105) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L05-09 (pp43-90)
GRADE LEVEL EXPECTATION	3.3.2.	Compare what happens when sunlight strikes dark and light colored objects. • **Bubble Festival** • TG: Act05 (pp80-85) • **Building Blocks of Science: Light** • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-3) • **Changes** • TG: L10 (pp95-102) • **Weathe**r • TG: L09 (pp83-90)
GRADE LEVEL EXPECTATION	3.3.3.	Draw conclusions that dark colored objects feel warmer and increase more in temperature in sunlight than do light colored objects. • **Bubble Festival** • TG: Act05 (pp80-85) • **Building Blocks of Science: Light** • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-3) • **Changes** • TG: L10 (pp95-102) • **Weathe**r • TG: L09 (pp83-90)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.4.	Enduring Understandings: People utilize a variety of resources to meet the basic and specific needs of life. Some of these resources cannot be replaced. Other resources can be replenished or exist in such vast quantities they are in no danger of becoming depleted. Often the energy stored in resources must be transformed into more useful forms and transported over great distances before it can be helpful to us.
GRADE LEVEL EXPECTATION	3.4.1.	Observe that sunlight can be used to heat the inside of homes and other buildings by allowing the sunlight to pass through windows. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Investigating Artifacts** • TG: Ses01-06 (pp7-63)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	**4.1.**	Enduring Understandings: There are observable, predictable patterns of movement in the Earth, Moon, and Sun system that account for day and night.
GRADE LEVEL EXPECTATION	**4.1.1.**	List objects that can be observed in the sky in the daytime and objects that can be observed in the sky at nighttime. Discuss which objects are on which lists (e.g., the Moon can be observed sometimes in the day and sometimes at night). • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	**4.1.2.**	Safely observe the location of the Sun at the same time in the morning, noon, and afternoon over several days. Describe the Sun's movement across the sky over the course of the day. • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3) • TG: Act 02 (pp 1-6)
GRADE LEVEL EXPECTATION	**4.1.3.**	Observe the Moon in the day sky over several months. Draw a sequence of pictures that shows the repeating cyclic pattern of the Moon. • **Building Blocks of Science: Sky Watchers** • TG: Act 04 (pp 1-7)
GRADE LEVEL EXPECTATION	**4.1.4.**	Use simple models to demonstrate how Earth's rotation causes day and night. • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.1.**	Enduring Understandings: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	**5.1.1.**	Identify the earth materials (i.e., rocks, soil, water, air) found in aquatic and terrestrial environments. • **Organisms** • TG: L01 (pp3-10) • TG: L17 (pp179-182) • **Soils** • TG: L01-17 (pp3-172)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.2.**	Enduring Understandings: Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.
GRADE LEVEL EXPECTATION	**5.2.1.**	Keep daily records of weather conditions (wind speed, type and amount of precipitation, cloud cover and type, temperature) and use these records to identify patterns over short and long periods of time. • **Weather** • TG: L03-05 (pp25-54) • TG: L07 (pp63-70) • TG: L10 (pp91-100) • TG: L15 (pp135-140)

		• TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	5.2.2.	Demonstrate that there is air all around and that the wind is moving air. Use instruments to qualitatively measure wind speed and describe this by using a simplified Beaufort scale. • **Weather** • TG: L04-07 (pp33-70) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	5.2.3.	Use a thermometer to measure temperature in degrees Fahrenheit. Describe how hot or cold an object or weather event feels by using a thermometer. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L05-09 (pp43-90)
GRADE LEVEL EXPECTATION	5.2.4.	Identify three basic cloud types (cirrus, cumulus, stratus) all of which are made of water and/or ice. Conclude that wind moves clouds in the sky. • **Weather** • TG: L03 (pp25-32) • TG: L13-14 (pp123-134)
GRADE LEVEL EXPECTATION	5.2.5.	Use a rain gauge to measure precipitation and describe how this measurement would change when frozen precipitation such as snow or ice melts. • **Weather** • TG: L03-07 (pp25-70) • TG: L10 (pp91-100)
GRADE LEVEL EXPECTATION	5.2.6.	Organize weather data on graphs and on long-term data collection charts and use this data to describe typical seasonal weather patterns. • **Weather** • TG: L03-07 (pp25-70) • TG: L10 (pp91-100) • TG: L15 (pp135-140)
GRADE LEVEL EXPECTATION	5.2.7.	Describe different weather conditions and discuss how these conditions affect plants, animals, and human activity. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01 (pp3-10) • TG: L06 (pp55-62) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)

CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.3.**	Enduring Understandings: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	**5.3.1.**	Select and use appropriate instruments such as wind scales, thermometers, cloud charts, and rain gauges to measure weather conditions. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6) • **Weather** • TG: App-A (pp151-152) • TG: App-B (pp153-167) • TG: L03-10 (pp25-100) • TG: L15 (pp135-140)
GRADE LEVEL EXPECTATION	**5.3.2.**	Identify a meteorologist as a scientist who uses technology to study, observe, and record information about the weather and who uses this information to forecast the weather. Use weather forecasts to make decisions such as choice of clothing or outdoor activities. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01-02 (pp3-24) • TG: L06 (pp55-62) • TG: L15-17 (pp135-150)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.1.**	Enduring Understandings: Living systems demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	**6.1.1.**	Select the hand lens as an appropriate instrument for observing the structure of aquatic and terrestrial organisms in greater detail. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • TG: Act02 (pp15-27) • **Bubble Festival** • TG: Act08 (pp97-101) • **Terrarium Habitats** • TG: Act01 (pp5-13) • **Tree Homes** T • G: Act01 (pp15-23)
GRADE LEVEL EXPECTATION	**6.1.2.**	Observe individuals of the same plant or animal group. Describe physical differences (e.g., size, color, shape, markings). • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • **Eggs, Eggs, Everywhere** • TG: Act04 (pp41-47)
GRADE LEVEL EXPECTATION	**6.1.3.**	Identify and describe structures of plants and animals that help them survive in aquatic and terrestrial environments. • **Organisms**

		• TG: L05 (pp53-64)
GRADE LEVEL EXPECTATION	6.1.4.	Sort and group plants and animals based on the structures that enable them to function in their environment (e.g., animals that have fins for swimming versus animals that have legs for movement on land). • **Eggs, Eggs, Everywhere** • TG: Act02 (pp17-29)
GRADE LEVEL EXPECTATION	6.1.5.	Compare and contrast the observable structures of humans to those of other animals and plants. Record and communicate the similarities and differences in their structures. • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	6.2.	Enduring Understandings: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	6.2.1.	Observe a variety of plants and animals and identify basic needs that are common to plants or animals of the same group, such as food, water, air, shelter, space and light. • **Ant Homes Under the Ground** • TG: Act01 (pp7-13) • **Organisms** • TG: L03-04 (pp21-52) • TG: L06-10 (pp65-118) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Soils TG:** • L09 (pp87-96) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **Tree Homes** • TG: Act04 (pp41-49) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-46) • TG: L10-12 (pp63-80) • TG: L15-16 (pp89-96) • **Weather** • TG: L10.Exts (p95)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	6.3.	Enduring Understandings: Organisms respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	6.3.1.	Using the senses to detect environmental conditions, respond by selecting the appropriate clothing for certain weather conditions based on temperature, wind speed, cloud cover and/or precipitation. Justify the selection of clothing and activity. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01 (pp3-10)

		• TG: L06 (pp55-62) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.4.**	Enduring Understandings: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	**6.4.1.**	Design terrestrial and aquatic habitats that provide healthy environments for the plant and animal inhabitants. • **Ant Homes Under the Ground** • TG: Act01-05 (pp7-73) • **Organisms** • TG: L03-13 (pp21-148) • TG: L15 (pp155-168) • TG: L16.Exts (pp172-173) • **Soils** • TG: L09 (pp87-96) • TG: L09.Exts (p92) • **Terrarium Habitats** • TG: Act01-05 (pp5-48) • **Tree Homes** • TG: Act04 (pp41-49) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-52) • TG: L10-12 (pp63-80) • TG: L15 (pp89-94) • TG: L16 (pp95-96) • **Weather** • TG: L10.Exts (p95)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.1.**	Enduring Understandings: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	**7.1.1.**	Recognize that organisms change over time. Record and communicate **Changes** observed in living things over time. • **Ant Homes Under the Ground** • TG: Act04 (pp41-47) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Changes** • TG: L01 (pp3-20) • TG: L03-04 (pp31-52) • TG: L12 (pp111-118) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Eggs, Eggs, Everywhere** • TG: Act01 (pp5-15) • TG: Act02 (pp17-29) • **Ladybugs** • TG: Act03-05 (pp43-71) • **Liquid Explorations**

		• TG: Act03 (pp25-31) • **Mother Opossum and Her Babies** • TG: Act02 (pp31-45) • TG: Act03 (pp47-62) • **Organisms** • TG: L10.Exts (p115) • TG: L11-12 (pp119-134) • TG: L16-17 (pp169-182) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	7.1.2.	Construct, through the use of pictorials, the life cycle of guppies. Describe the guppy in different stages of its life cycle. • **Eggs, Eggs, Everywhere** • TG: Act03 (pp31-39) • **Organisms** • TG: L08 (pp87-96) • **The Life Cycle of Butterflies** • TG: L03.Exts (p21)
GRADE LEVEL EXPECTATION	7.1.3.	Describe similarities and differences between parents and offspring, such as size and color. • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understandings: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with advantageous traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	Recognize that there are many different kinds of plants and animals in the world. Sort terrestrial animals from aquatic animals. Identify the characteristics used to separate the terrestrial from aquatic animals. • **Organisms** • TG: L05 (pp53-64)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.3.	Enduring Understandings: The development of technology has allowed us to apply our knowledge of genetics, reproduction, development and evolution to meet human wants and needs.
GRADE LEVEL EXPECTATION	7.3.1.	Recognize that some plants and animals are maintained in artificial environments to meet human wants and needs (i.e., scientific study, education, food). • **Ant Homes Under the Ground** • TG: Act01-05 (pp7-73) • **Organisms** • TG: L04.Exts (pp43-45) • TG: L05.Exts (p59) • TG: L11 (pp119-126) • TG: L12 (pp127-134) • TG: L15.Exts (pp159-160) • **Terrarium Habitats**

		• TG: Act01-05 (pp5-48)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.1.**	Enduring Understandings: Organisms and their environments are interconnected. **Changes** in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	**8.1.1.**	Describe the impact of weather conditions (e.g., sun, fog, rain, snow) on plant and animal activities. • **Tree Homes** • TG: Act03 (pp33-39) • **Weather** • TG: L01 (pp3-10) • TG: L06 (pp55-62) • TG: L10 (pp91-100) • TG: L15 (pp135-140) • TG: L17 (pp149-150)
GRADE LEVEL EXPECTATION	**8.1.2.**	Identify and describe the different kinds of living things in an aquatic or terrestrial environment. Recognize that living things coexist in these environments. • **Organisms** • TG: L05 (pp53-64)
GRADE LEVEL EXPECTATION	**8.1.4.**	Describe how terrestrial plants and animals interact with each other and their environment (e.g., millipedes eat decaying bark). • **Buzzing a Hive** • TG: Exts (p67) • TG: Les04 (pp39-53) • TG: Les05 (pp55-59) • **Ladybugs** • TG: Act05 (pp65-71) • **Organisms** • TG: L04.Exts (pp43-45) • TG: L11 (pp119-126) • TG: L12 (pp127-134) • TG: L14.Exts (pp152-153) • **Terrarium Habitats** • TG: Act0-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: L10 (pp63-68)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.2.**	Enduring Understandings: Matter needed to sustain life is continually recycled among and between organisms and the environment. Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.
GRADE LEVEL EXPECTATION	**8.2.1.**	Recognize that energy needed by all living things originates from the Sun. • **Building Blocks of Science: Sky Watchers** • TG: Act 03 (pp 1-6)

Grade 2

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Generate questions and predictions using observations and exploration about the natural world. • **All Units**
GRADE LEVEL EXPECTATION	1.1.2.	Generate and follow simple plans using systematic observations to explore questions and predictions. • **Building Blocks of Science: Light** • TG: Act 01 (pp 1-4) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • **Building Blocks of Science: Sky Watchers** • TG: Act 02 (pp 1-6) • TG: Act 03 (pp 1-6) • TG: Act 04 (pp 1-7) • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 01 (pp 1-7) • TG: Act 02 (pp 1-4) • TG: Act 03 (pp 1-5) • TG: Act 04 (pp 1-4) • TG: Act 05 (pp 1-6) • TG: Act 06 (pp 1-5) • **Changes** • TG: L15 (pp137-146) • **Chemical Tests** • TG: L14 (pp125-134) • **Plant Growth and Development** • TG: L03 (pp13-24) • TG: L09 (pp47 - 54) • TG: L16.Exts (pp96-97) • **Sound** • TG: L12.Exts (p88)
GRADE LEVEL EXPECTATION	1.1.3.	Collect data using observations, simple tools and equipment. Record data in tables, charts, and bar graphs. Compare data with others to examine and question results. • **All Units**
GRADE LEVEL EXPECTATION	1.1.4.	Construct a simple explanation by analyzing observational data. Revise the explanation when given new evidence or information gained from other resources or from further investigation. • **Balancing and Weighing** • TG: L05 (pp35-44) • TG: L06 (pp45-54) • TG: L12.Exts (p104) • TG: L15 (pp123-128) • **Building Blocks of Science: Sky Watchers** • TG: Act 01 (pp 1-3)

		• **Changes** • TG: L04 (pp43-52) • TG: L05 (pp53-62) • **Chemical Tests** • TG: App-A (pp159-160) • TG: L03.Exts (pp28-29) • TG: L17 (pp155-158) • **Comparing and Measuring** • TG: L15 (pp99-110) • **Organisms** • TG: L01-02 (pp3-20) • TG: L04-05 (pp37-64) • TG: L17 (pp179-182) • **Plant Growth and Development** • TG: L01 (pp3-8) • TG: L09 (pp47 - 54) • TG: L17 (pp99-100) • **Rocks and Minerals** • TG: L04-09 (pp27-70) • TG: L11-13 (pp79-94) • TG: L15 (pp103-112) • **Secret Formulas** • TG: Exts (p99) • TG: Ses02-09 (pp27-97) • **Sifting Through Science** • TG: Act01-04 (pp7-56) • **Solids and Liquids** • TG: L01-03 (pp3-28) • TG: L05.Exts (pp43-45) • TG: L06.Exts (pp51-52) • TG: L07-10 (pp55-86) • TG: L14.Exts (p114) • TG: L16.Exts (pp135-136) • TG: L17 (pp137-140) • **Sound** • TG: L04 -05(pp23-38) • TG: L16 (pp113-116) • **The Life Cycle of Butterflies** • TG: L13 (pp81-84) • **Weather** • TG: L01 (pp3-10) • TG: L05.Exts (pp47-48) • TG: L15-17 (pp135-150)
GRADE LEVEL EXPECTATION	**1.1.5.**	Share simple plans, data, and explanations with an audience and justify the results using the evidence from the investigation. • **Balancing and Weighing** • TG: L01-17 (pp3-138) • **Building Blocks of Science: Light** • TG: Act 05 (pp 1-3) • **Chemical Tests** • TG: L01 -17(pp3-158) • **Mystery Festival** • TG: Exts (p94) • **Organisms**

		• TG: L03-16 (pp21-178) • **Plant Growth and Development** • TG: L01 (pp3-8) • TG: L09.Exts (p50) • TG: L12 (pp67-70) • **Rocks and Minerals** • TG: L15-16 (pp103-126) • **Soils** • TG: L01-17 (pp3-172) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L09 (pp69-80) • TG: L11.Exts (p92) • TG: L17 (pp137-140) • **Sound** • TG: L01-17 (pp3-118) • **The Life Cycle of Butterflies** • TG: L01-16 (pp3-96) • **Weather** • TG: L01-17 (pp3-150)
GRADE LEVEL EXPECTATION	1.1.6.	Use mathematics, reading, writing, and technology when conducting an investigation and communicating the results. • **All Units**
GRADE LEVEL EXPECTATION	1.1.7.	Use an equal arm balance to weigh and compare a variety of objects and recognize that weighing is the process of balancing an object against a certain number of standard units. • **Balancing and Weighing** • TG: L01-17 (pp3-138)
GRADE LEVEL EXPECTATION	1.1.8.	Predict the serial order for the weights of a variety of objects and test these predictions by weighing the objects. • **Balancing and Weighing** • TG: L01-17 (pp3-138)
GRADE LEVEL EXPECTATION	1.1.10.	Investigate how to change an object's movement by giving it a push or pull. Demonstrate that the greater the force, the greater the change in motion of the object. Summarize this understanding through the use of visuals or writing. • **Solids and Liquids** • TG: L04 (pp29-40)
GRADE LEVEL EXPECTATION	1.1.12.	Observe and identify basic components of soil. Use the senses to observe and then describe the physical properties of soil components. • **On Sandy Shores** • TG: Act02 (pp27-43) • **Soils** • TG: L01-08 (pp3-86) • TG: L11-13 (pp109-138) • TG: L14.Exts (p143) • **Terrarium Habitats**

		• TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	1.1.13.	Conduct simple tests to identify the three basic components of soil (sand, clay, humus) and to compare and contrast the properties of each of the components. • **On Sandy Shores** • TG: Act02 (pp27-43) • **Soils** • TG: L01-08 (pp3-86) • TG: L11-13 (pp109-138) • TG: L14.Exts (p143) • **Terrarium Habitats** • TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	1.1.16.	Reflect on the test results and predict how plants will grow in different soil components. • **Organisms** • TG: L03-04 (pp21-52) • TG: L06 (pp65-74) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Plant Growth and Development** • TG: L03-04 (pp13-28) • TG: L16.Exts (pp96-97) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp09-11), (pp14-15) • **Soils** • TG: L09 (pp87-96) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L03.Exts (p21) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.17.	Apply this knowledge to describe how the properties of each soil component contribute to an appropriate soil mixture in growing plants. • **Organisms** • TG: L03-04 (pp21-52) • TG: L06 (pp65-74) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Plant Growth and Development** • TG: L03-04 (pp13-28) • TG: L16.Exts (pp96-97) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp09-11), (pp14-15) • **Soils** • TG: L01-05 (pp3-56) • TG: L07 (pp65-72) • TG: L08.Exts (p79) • TG: L09 (pp87-96) • TG: L11-13 (pp109-138) • **Terrarium Habitats**

		• TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L03.Exts (p21) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.18.	Identify and describe the structures of insects and various other organisms that enable them to function in their environment. • **Ant Homes Under the Ground** • TG: Act0-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L07-10 (pp75-118) • TG: L14 (pp149-154) • TG: L15 (pp155-168) • TG: L17 (pp179-182) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14 (pp79-88) • **STC Book: Plant Growth and Development:** • (pp42-45) • **Sound** • TG: L04.Exts (pp26-27) • TG: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	1.1.20.	Given several pictures of adult organisms, identify and explain which organisms are insects and which are not. • **Ant Homes Under the Ground** • TG: Act0-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118 • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14 (pp79-88) • **STC Book: Plant Growth and Development:** • (pp42-45) • **Sound** • TG: L04.Exts (pp26-27) • TG: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies**

		• TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	1.1.21.	Observe common structures of different insects (e.g., mouth parts or legs). Describe the similarities and differences among the structures. Recognize that the structure is related to the function it performs (e.g., a caterpillar mouth for chomping leaves differs from a butterfly proboscis for obtaining nectar). • **Ant Homes Under the Ground** • TG: Act01-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118 • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14 (pp79-88) • **STC Book: Plant Growth and Development:** • (pp42-45) • **Sound** • TG: L04.Exts (pp26-27) • TG: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	1.1.22.	Observe a variety of plants and animals. Compare specific needs that are common to plants or animals of the same group (i.e., all fish need water but some fish need cold water to live and some need warm water to live, all plants need water but some need a humid environment and some need a dry environment). • **Ant Homes Under the Ground** • TG: Act01 (pp13-23) • **Organisms** • TG: L03-04 (pp21-52) • TG: L06-10 (pp65-118) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Plant Growth and Development** • TG: L03-04 (pp13-28) • TG: L16.Exts (pp96-97) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp09-11), (pp14-15) • **Soils** • TG: L09 (pp87-96) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-52) • TG: L10-12 (pp63-80) • TG: L15-16 (pp89-96)

		• **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.23.	Conduct simple investigations to determine and describe how insects and various other organisms respond to different kinds of stimuli, (e.g., light versus dark environment). • **Ant Homes Under the Ground** • TG: Act01-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4) • **Organisms** • TG: L09 (pp97-104) • TG: L10 (pp105-118) • TG: L14 (pp149-154) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: L02.Exts (pp14-15) • TG: L04 (pp23-28) • TG: L10 (pp63-68) • TG: L11 (pp69-74)
GRADE LEVEL EXPECTATION	1.1.24.	Investigate and evaluate how plant growth is affected by varying amounts of different soil components. • **Organisms** • TG: L03-04 (pp21-52) • TG: L06 (pp65-74) • TG: L13 (pp135-148) • TG: L15-16 (pp155-178) • **Plant Growth and Development** • TG: L03-04 (pp13-28) • TG: L16.Exts (pp96-97) • **STC Book: Plant Growth and Development:** • (pp028-30), (pp09-11), (pp14-15) • **Soils** • TG: L01-03 (pp3-36) • TG: L04.Exts (p41) • TG: L05 (pp45-56) • TG: L07 (pp65-72) • TG: L08.Exts (p79) • TG: L09 (pp87-96) • TG: L11-13 (pp109-138) • **Terrarium Habitats** T • G: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L03.Exts (p21) • **Weather**

		• TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.1.25.	Conduct simple investigations using artificial habitats to describe how the survival of insects is affected by the environment. • **Ant Homes Under the Ground** • TG: Act01-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09 (pp97-104) • TG: L10 (pp105-118) • TG: L14 (pp149-154) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110 • TG: L01-14 (pp3-88)
GRADE LEVEL EXPECTATION	1.1.26.	Observe the life cycle of a selected organism (e.g., plant, butterfly, frog, etc.) and recognize that the stages of the life cycle are predictable and describable. • **Ant Homes Under the Ground** • TG: Act04-05 (pp45-70) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Balancing and Weighing** • TG: L03.Exts (p20) • TG: L08.Exts (p67) • **Building Blocks of Science: Sky Watchers** • TG: Act 05 (pp 1-5) • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4) • **Changes** • TG: L02.Exts (pp26-27) • TG: L03 (pp31-42) • TG: L05 (pp53-62) • TG: L07-09 (pp71-94) • TG: L12-16 (pp111-154) • **Chemical Tests** • TG: L01-16 (pp3-154) • **Comparing and Measuring** • TG: L01-17 (pp3-120) • **Organisms** • TG: L01-17 (pp3-182) • **Plant Growth and Development** • TG: L09.Exts (p50) • TG: L10 (pp55-60) • TG: L12 (pp67-70)

		• TG: L15-16 (pp89-98) • **Rocks and Minerals** • TG: L04-15 (pp27-112) • **STC Book: Plant Growth and Development:** • (pp39-41), (pp46-47) • **Soils** • TG: L16.Exts (pp164-166) • **Solids and Liquids** • TG: L01.Exts (pp7-8) • TG: L02.Exts (pp15-16) • TG: L03-17 (pp19-140) • **Sound** • TG: L03.Exts (p20) • TG: L04.Exts (pp26-27) • TG: L05 (pp33-38) • TG: L06.Exts (p42) • TG: L09-10 (pp67-78) • TG: L12 (pp85-90) • TG: L17 (pp117-118) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-16 (pp3-96) • **Weather** • TG: L05 (pp43-54) • TG: L12 (pp113-122) • TG: L14 (pp129-134)
GRADE LEVEL EXPECTATION	**1.1.27.**	Identify the stages in a life cycle of an organism that goes through complete metamorphosis (e.g., butterfly, mealworm). • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Organisms** • TG: L10.Exts (p115) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01 (pp3-10) • TG: L03 (pp19-22) • TG: L04.Exts (pp26-27) • TG: L06.Exts (p37) • TG: L07-09 (pp39-62) • TG: L12.Exts (p77) • TG: L13 (pp81-84)
GRADE LEVEL EXPECTATION	**1.1.29.**	Identify the stages in the life cycle of an organism that goes through simple (incomplete) metamorphosis (e.g., grasshopper, cricket). Describe the similarities and differences in the structures and behaviors of the egg, nymph, and adult insect. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70)

		• **Buzzing a Hive** • TG: Les04 (pp39-53) • **Organisms** • TG: L10.Exts (p115) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01 (pp3-10) • TG: L03 (pp19-22) • TG: L04.Exts (pp26-27) • TG: L06.Exts (p37) • TG: L07-09 (pp39-62) • TG: L12.Exts (p77) • TG: L13 (pp81-84)
GRADE LEVEL EXPECTATION	1.1.30.	Recognize that there are many different kinds of animals in the world, of which insects are one grouping. Sort insects from animals that are not insects. Identify the characteristics used to sort the insects (i.e., three body parts, six legs). • **Ant Homes Under the Ground** • TG: Act01-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09 (pp97-104) • TG: L10 (pp105-118) • TG: L14 (pp149-154) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110 • TG: L01-14 (pp3-88)
GRADE LEVEL EXPECTATION	1.1.31.	Describe the effects that result from plants, insects and other animals changing the environment in which they live (e.g., worms make tunnels in the earth, crickets eat the grass). • **STC Book: Plant Growth and Development:** • (pp58-61)
GRADE LEVEL EXPECTATION	1.1.32.	Observe the plants and animals living in an environment. Identify ways in which plants and animals benefit from each other (e.g., animals use plants for food and shelter, and plants need insects to spread pollen). • **Buzzing a Hive** • TG: Exts (p67) • **Organisms** • TG: L11 (pp119-126) • TG: L12 (pp127-134) • TG: L14.Exts (pp152-153) • **Plant Growth and Development**

		• TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp28-30) (pp39-43), (pp48-50), (pp58-61) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: L10 (pp63-68)
GRADE LEVEL EXPECTATION	1.1.34.	Investigate how natural composting recycles plants and other discarded organic matter. Recognize the importance of this process to the environment. • **Soils** • TG: L02 (pp17-26) • TG: L13 (pp125-138)
CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understandings: The development of technology and advancement in science influence each other and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Select and use appropriate instruments (e.g., hand lens/magnifier, droppers, funnels, filter paper, sieves) to analyze soil samples. • **Plant Growth and Development** • TG: L01 (pp3-8)
GRADE LEVEL EXPECTATION	1.2.2.	Recognize that some insects are considered harmful to humans, plants, and other animals while other insects can be beneficial. Technology allows us to help control the harmful insects (i.e., control of mosquitoes, termites, ticks, etc.). • **Ant Homes Under the Ground** • TG: Act01-04 (pp25-59) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09 (pp97-104) • TG: L10 (pp105-118) • TG: L14 (pp149-154) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110 • TG: L01-14 (pp3-88)
CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.1.	Enduring Understandings: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	2.1.1.	Use an equal arm balance to weigh and compare a variety of objects and recognize that weighing is the

		process of balancing an object against a certain number of standard units. • **Balancing and Weighing** • TG: L01-17 (pp3-138)
GRADE LEVEL EXPECTATION	2.1.2.	Predict the serial order for the weights of a variety of objects and test these predictions by weighing the objects. • **Balancing and Weighing** • TG: L01-17 (pp3-138)
GRADE LEVEL EXPECTATION	2.1.3.	Recognize that equal volumes of different materials may have different weights. • **Balancing and Weighing** • TG: L13.Exts (pp110-111) • TG: L15 (pp123-128) • **Soils** • TG: L07 (pp65-72) • **Solids and Liquids** • TG: L01 (pp3-10) • TG: L06 (pp47-54) • TG: L14 (pp109-120) • TG: L15 (pp121-130)
CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.1.	Enduring Understandings: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	5.1.1.	Observe and identify basic components of soil. Use the senses to observe and then describe the physical properties of soil components. • **On Sandy Shores** • TG: Act02 (pp27-43) • **Soils** • TG: L01-05 (pp3-56) • TG: L07-08 (pp65-86) • TG: L11-13 (pp109-138) • TG: L14.Exts (p143) • **Terrarium Habitats** • TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	5.1.2.	Conduct simple tests to identify the three basic components of soil (sand, clay, humus) and to compare and contrast the properties of each of the components. • **On Sandy Shores** • TG: Act02 (pp27-43) • **Soils** • TG: L01-05 (pp3-56) • TG: L07-08 (pp65-86) • TG: L11-13 (pp109-138) • TG: L14.Exts (p143) • **Terrarium Habitats** • TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	5.1.5.	Reflect on the test results and predict how plants will grow in different soil components. Apply this knowledge to describe how the properties of each soil component contribute to an appropriate soil

		mixture in growing plants. • **Organisms** • TG: L03 (pp21-36) • TG: L04 (pp37-52) • TG: L06 (pp65-74) • TG: L13 (pp135-148) • TG: L15 (pp155-168) • TG: L16 (pp169-178) • **Plant Growth and Development** • TG: L03 (pp13-24) • TG: L04 (pp25-28) • TG: L16.Exts (pp96-97) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp09-11), (pp14-15) • **Soils** • TG: L01-03 (pp3-36) • TG: L04.Exts (p41) • TG: L05 (pp45-56) • TG: L07 (pp65-72) • TG: L08.Exts (p79) • TG: L09 (pp87-96) • TG: L11-13 (pp109-138) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L03.Exts (p21) • **Weather** • TG: L10.Exts (p95)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.2.**	Enduring Understandings: Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.
GRADE LEVEL EXPECTATION	**5.2.1.**	Use worms to enhance decomposition of plant material in composting. Explain how composting is an effective method to recycle plants and other discarded organic matter. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **STC Book: Plant Growth and Development:** • (pp48-50) • **Soils** • TG: L02 (pp17-26) • TG: L13 (pp125-138) • TG: L13.Exts (pp129-130) • **Terrarium Habitats** • TG: Act03 (pp23-31)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.3.**	Enduring Understandings: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	**5.3.1.**	Select and use appropriate instruments (e.g., hand lens/magnifier, droppers, funnels, filter paper,

		sieves) to analyze soil samples. • **Plant Growth and Development** • TG: L01 (pp3-8)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.1.**	Enduring Understandings: Living systems demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	**6.1.1.**	Identify and describe the structures of insects and various other organisms that enable them to function in their environment. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-14 (pp3-88)
GRADE LEVEL EXPECTATION	**6.1.3.**	Given several pictures of adult organisms, identify and explain which organisms are insects and which are not. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110)

		• TG: L01-14 (pp3-88)
GRADE LEVEL EXPECTATION	6.1.4.	Observe common structures of different insects (e.g., mouth parts or legs). Describe the similarities and differences among the structures. Recognize that the structure is related to the function it performs (e.g., a caterpillar mouth for chomping leaves differs from a butterfly proboscis for obtaining nectar). • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-14 (pp3-88)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	6.2.	Enduring Understandings: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	6.2.1.	Identify the basic needs of all insects for survival. These include food, water, air, space, light, and shelter. Recognize that insects also have specific needs according to their kind, (i.e., specific food such as nectar or mulberry leaves). • **Ant Homes Under the Ground** • TG: Act01 (pp13-23) • **Organisms** • TG: L07-10 (pp75-118) • TG: L15-16 (pp155-178) • **Terrarium Habitats** • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-52) • TG: L10-12 (pp63-80) • TG: L15-16 (pp89-96)
GRADE LEVEL EXPECTATION	6.2.2.	Propose changes to an aquatic or terrestrial habitat that increase the health of organisms (i.e., moisten the soil in a terrarium, add water to an aquarium). • **Changes** • TG: L06.Exts (pp67-69) • **Chemical Tests** • TG: L05.Exts (p50)

CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.3.	Enduring Understandings: **Organisms** respond to external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	6.3.1.	Conduct simple investigations to determine and describe how insects and various other organisms respond to different kinds of stimuli, (e.g., light versus dark environment). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Act05 (pp61-70) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Exts (p67) • TG: Les01-06 (pp5-66) • **Building Blocks of Science: Understanding My Body** • TG: Act 04 (pp 1-4) • **Organisms** • TG: L09-10 (pp97-118) • TG: L14 (pp149-154) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: L02.Exts (pp14-15) • TG: L04 (pp23-28) • TG: L10-11 (pp63-74)

CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.4.	Enduring Understandings: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	6.4.1.	Investigate and evaluate how plant growth is affected by varying amounts of different soil components. • **Organisms** • TG: L03 (pp21-36) • TG: L04 (pp37-52) • TG: L06 (pp65-74) • TG: L13 (pp135-148) • TG: L15 (pp155-168) • G: L16 (pp169-178) • **Plant Growth and Development** • TG: L03-04 (pp13-28) • TG: L16.Exts (pp96-97) • STC Book: Plant Growth and Development: • (pp028-30), (pp09-11), (pp14-15) • **Soils** • TG: L09 (pp87-96) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies**

		• TG: L03.Exts (p21) • **Weather** • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	6.4.2.	Conduct simple investigations using artificial habitats to describe how the survival of insects is affected by the environment. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118) • **Plant Growth and Development** • TG: L08-09 (pp43-46) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-14 (pp3-88)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understandings: **Organisms** reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	Observe the life cycle of a selected organism (e.g., plant, butterfly, frog, etc.) and recognize that the stages of the life cycle are predictable and describable. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Organisms** • TG: L03.Exts (pp29-30) • TG: L06 (pp65-74) • TG: L10.Exts (p115) • TG: L11 -13(pp119-148) • TG: L16-17 (pp169-182) • **Plant Growth and Development** • TG: L10 (pp55-60) • TG: L12 (pp67-70) • TG: L15 (pp89-94) • TG: L16 (pp95-98) • **STC Book: Plant Growth and Development:** • (pp39-41), (pp46-47) • **Soils** • TG: L16.Exts (pp164-166) • **The Life Cycle of Butterflies**

		• TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-16 (pp3-96)
GRADE LEVEL EXPECTATION	7.1.2.	Identify the stages in a life cycle of an organism that goes through complete metamorphosis (e.g., butterfly, mealworm). Describe the similarities and differences in the structures and behaviors of the egg, larvae, pupae, and adult insect. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Organisms** • TG: L10.Exts (p115) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01 (pp3-10) • TG: L03 (pp19-22) • TG: L04.Exts (pp26-27) • TG: L06.Exts (p37) • TG: L07-09 (pp39-62) • TG: L12.Exts (p77) • TG: L13 (pp81-84)
GRADE LEVEL EXPECTATION	7.1.3.	Identify the stages in the life cycle of an organism that goes through simple (incomplete) metamorphosis (e.g., grasshopper, cricket). Describe the similarities and differences in the structures and behaviors of the egg, nymph, and adult insect. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Buzzing a Hive** • TG: Les04 (pp39-53) • **Organisms** • TG: L10.Exts (p115) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01 (pp3-10) • TG: L03 (pp19-22) • TG: L04.Exts (pp26-27) • TG: L06.Exts (p37) • TG: L07-09 (pp39-62) • TG: L12.Exts (p77) • TG: L13 (pp81-84)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understandings: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with advantageous traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	Recognize that there are many different kinds of animals in the world, of which insects are one grouping. Sort insects from animals that are not insects. Identify the characteristics used to sort the insects (i.e., three body parts, six legs).

		• **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118) • **Plant Growth and Development** • TG: L08 -09(pp43-54) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-14 (pp3-88)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.3.**	Enduring Understandings: The development of technology has allowed us to apply our knowledge of genetics, reproduction, development and evolution to meet human wants and needs.
GRADE LEVEL EXPECTATION	**7.3.1.**	Recognize that some insects are considered harmful to humans, plants, and other animals while other insects can be beneficial. Technology allows us to help control the harmful insects (i.e., control of mosquitoes, termites, ticks, etc.). • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Organisms** • TG: L09-10 (pp97-118) • **Plant Growth and Development** • TG: L08 -09(pp43-54) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-14 (pp3-88)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.1.**	Enduring Understandings: **Organisms** and their environments are interconnected. **Changes** in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	**8.1.1.**	Describe the effects that result from plants, insects, and other animals changing the environment in

		which they live (e.g., worms make tunnels in the earth, crickets eat the grass). • **STC Book: Plant Growth and Development:** • (pp58-61)
GRADE LEVEL EXPECTATION	8.1.2.	Observe the plants and animals living in an environment. Identify ways in which plants and animals benefit from each other (e.g., animals use plants for food and shelter, and plants need insects to spread pollen). • **Buzzing a Hive** • TG: Exts (p67) • **Organisms** • TG: L11 (pp119-126) • TG: L12 (pp127-134) • TG: L14.Exts (pp152-153) • **Plant Growth and Development** • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Plant Growth and Development:** • (pp028-30), (pp39-43) (pp48-50), (pp58-61) • **Terrarium Habitats** • TG: Act03-05 (pp23-48) • **The Life Cycle of Butterflies** • TG: L10 (pp63-68)
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.2.	Enduring Understandings: Matter needed to sustain life is continually recycled among and between organisms and the environment. Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.
GRADE LEVEL EXPECTATION	8.2.1.	Investigate how natural composting recycles plants and other discarded organic matter. Recognize the importance of this process to the environment. • **Soils** • TG: L02 (pp17-26) • TG: L13 (pp125-138)

Grade 3

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Generate questions and predictions using observations and exploration about the natural world. • **All Units**
GRADE LEVEL EXPECTATION	1.1.2.	Generate and follow simple plans using systematic observations to explore questions and predictions. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01-12 (pp 19-84) • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 05 (p 46) • TG: Ext 06 (p 51) • TG: Pre Assessment (pp 13-17) • **Building Blocks of Science: Measure It!** • TG: L01-05 (pp 11-47) • **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 01-06 (pp 21-79) • TG: Ext 02 (p 32) • TG: Ext 04 (p 58) • **Changes** • TG: L15 (pp137-146) • **Chemical Tests** • TG: L14 (pp125-134) • **Plant Growth and Development** • TG: L03 (pp13-24) • TG: L09 (pp47 - 54) • TG: L16.Exts (pp96-97) • **Sound** • TG: L12.Exts (p88)
GRADE LEVEL EXPECTATION	1.1.3.	Collect data using observations, simple tools and equipment. Record data in tables, charts, and bar graphs. Compare data with others to examine and question results. • **All Units**
GRADE LEVEL EXPECTATION	1.1.4.	Construct a simple explanation by analyzing observational data. Revise the explanation when given new evidence or information gained from other resources or from further investigation. • **Animal Studies** T • G: L11.Exts (p119) • **Balancing and Weighing** • TG: L05-06 (pp35-54) • TG: L12.Exts (p104) • TG: L15 (pp123-128) • **Building Blocks of Science: Human Bodyworks** • TG: Act 03 (pp 31-35) • TG: Act 06 (pp 49-53) • **Building Blocks of Science: Measure It!** • TG: L01-04 (pp 11-44)

		• **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 04 (pp 51-63) • **Changes** • TG: L04-05 (pp43-62) • **Chemical Tests** • TG: App-A (pp159-160) • TG: L03.Exts (pp28-29) • TG: L17 (pp155-158) • **GEMS: Electric Circuits** • TG: Ses11 (pp171-175) • **Land and Water** • TG: L01 (pp3-10) • TG: L04 (pp37-50) • TG: L05.Exts (p56) • TG: L07.Exts (p79) • TG: L09 (pp99-108) • TG: L17 (pp183-186) • **Plant Growth and Development** • TG: L01 (pp3-8) • TG: L09 (pp47 - 54) • TG: L17 (pp99-100) • **Rocks and Minerals** • TG: L04-09 (pp27-70) • TG: L11-13 (pp79-94) • TG: L15 (pp103-112) • **Secret Formulas** • TG: Exts (p99) • TG: Ses02-09 (pp27-97) • **Sound** • TG: L04 (pp23-32) • TG: L05 (pp33-38) • TG: L16 (pp113-116) • **Space Science for Grades 3-5** • TG: Ses 1.1-1.9 (pp 28-167) • TG: Ses 2.1-2.6 (pp 172-281) • TG: Ses 3.1-3.4 (pp 286-335) • TG: Ses 4.1-4.5 (pp 340-423) • **The Life Cycle of Butterflies** • TG: L13 (pp81-84)
GRADE LEVEL EXPECTATION	**1.1.5.**	Share simple plans, data, and explanations with an audience and justify the results using the evidence from the investigation. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.6.**	Use mathematics, reading, writing, and technology when conducting an investigation and communicating the results. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.7.**	Observe and describe changes in the properties of water as it changes from solid to liquid to gas. • **Changes** • TG: L01-04 (pp3-52) • TG: L08 (pp79-84) • TG: L09 (pp85-94)

		• TG: L12 (pp111-118) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Chemical Tests** • TG: L08.Exts (p82) • TG: L11.Exts (pp103-104) • TG: L16.Exts (pp152-153) • TG: L17 (pp155-158) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Liquid Explorations** • TG: Act03 (pp25-31) • **Land and Water** • TG: L02.Exts (p19) • **STC Book: Land and Water:** • (pp21-25)
GRADE LEVEL EXPECTATION	1.1.8.	Determine the effect of adding heat energy (warming) or removing heat energy (cooling) on the properties of water as it changes state (gas to liquid to solid, and vice versa). • **Bubble Festival** • TG: Act10 (pp108-113) • **Changes** • TG: L01-03 (pp3-42) • TG: L08.Exts (p82) • TG: L09 (pp85-94) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Chemical Tests** • TG: L08.Exts (p82) • TG: L10 (pp93-100) • TG: L10.Exts (p97) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Land and Water** • TG: L02.Exts (p19)
GRADE LEVEL EXPECTATION	1.1.9.	Investigate and describe what happens when an object at a higher temperature is placed in direct contact with an object at a lower temperature. Record data and use the data to describe which way the heat energy is moving between the objects. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Measure It!** • TG: L04-05 (pp 39-47) • **Changes** • TG: L02 (pp21-30) • **Chemical Tests** • TG: L10 (pp93-100) • **Schoolyard Ecology** • TG: Act01 (pp7-18)
GRADE LEVEL EXPECTATION	1.1.10.	Demonstrate that energy of motion can be transferred from one object to another (e.g., moving air transfers energy to make a pinwheel spin). Give examples of energy transfer from one object to another. • **Motion and Design**

		• TG: L06 (pp57-64) • **STC Book: Electric Circuits:** • (pp13-21), (pp24-28), (pp32-33), (pp36-38)
GRADE LEVEL EXPECTATION	1.1.11.	Simulate how bones, muscles and joints in the human body work to transfer energy to objects, making them move. • **Building Blocks of Science: Human Bodyworks** • TG: Act 04 (pp 37-43)
GRADE LEVEL EXPECTATION	1.1.12.	Examine rocks in order to observe their composition and describe the many components found in rocks. • **On Sandy Shores** • TG: Act02 (pp27-43) • **Rocks and Minerals** • TG: L01-02 (pp3-18) • TG: L03.Exts (p22) • TG: L04 (pp27-34) • TG: L16 (pp113-126) • TG: L17 (pp127-128) • **STC Book: Land and Water:** • (pp15-18) • **STC Book: Rocks and Minerals:** • (pp10-12), (pp25-27)
GRADE LEVEL EXPECTATION	1.1.13.	Sort and group an assortment of minerals based on similarities and differences in their physical properties. • **Rocks and Minerals** • TG: L04 -10(pp27-78) • TG: L14-17 (pp95-128) • **STC Book: Rocks and Minerals:** • (pp13-22), (pp42-44)
GRADE LEVEL EXPECTATION	1.1.14.	Sort and group minerals based on the physical properties of hardness, color, luster, and reaction to vinegar (weak acid). Use these properties to identify common minerals (quartz, fluorite, calcite, and gypsum). • **Rocks and Minerals** • TG: L04 -10(pp27-78) • TG: L14-17 (pp95-128) • **STC Book: Rocks and Minerals:** • (pp13-22), (pp42-44)
GRADE LEVEL EXPECTATION	1.1.15.	Describe water in terms of its observable properties (transparency, shapelessness, flow). • **Changes** • TG: L02-03 (pp21-42) • TG: L08 (pp79-84) • **STC Book: Land and Water:** • (pp21-25)
GRADE LEVEL EXPECTATION	1.1.16.	Examine an assortment of rocks and use appropriate measuring tools (balances, meter tapes, syringes) to gather data about the rocks' physical properties (length, circumference, weight). • **On Sandy Shores**

		• TG: Act02 (pp27-43) • **Rocks and Minerals** • TG: L01-02 (pp3-18) • TG: L03.Exts (p22) • TG: L04 (pp27-34) • TG: L16 (pp113-126) • TG: L17 (pp127-128) • **STC Book: Land and Water:** • (pp15-18) • **STC Book: Rocks and Minerals:** • (pp10-12), (pp25-27)
GRADE LEVEL EXPECTATION	1.1.17.	Describe how bones, muscles, and joints function together in humans to enable movement, protection and support. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01-04 (pp 19-43) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 03 (p 33) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57)
GRADE LEVEL EXPECTATION	1.1.18.	Identify the structures of different types of joints (gliding, hinged, ball and socket) and describe the movement enabled by each. Recognize the importance of each type of joint to human movement. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01-04 (pp 19-43) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 03 (p 33) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57) • **STC Book: Motion and Design:** (pp07-11)
GRADE LEVEL EXPECTATION	1.1.19.	Compare and contrast the structure and function of the human skeleton to that of other vertebrate animals. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83)
GRADE LEVEL EXPECTATION	1.1.20.	Conduct simple investigations to determine and describe how different body parts respond to visual, auditory, and tactile stimuli. • **Animal Studies** • TG: L10 (pp107-114) • TG: L10.Exts (p110) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp44-45)

GRADE LEVEL EXPECTATION	1.1.21.	Research and report on common diseases or problems of the muscular and skeletal systems. Explain how these systems can be affected by external factors (i.e., bones can be broken and healed, good nutrition leads to strong bones). • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83)
GRADE LEVEL EXPECTATION	1.1.22.	Observe and describe similarities and differences in the skeleton of an infant to that of an adult human. Recognize that as a human grows and develops the number of bones does not change but the sizes of the bones do change. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26)
GRADE LEVEL EXPECTATION	1.1.23.	Recognize that there are many different kinds of vertebrates in the world. One way to sort or group vertebrates is according to the structure and function of their skeletons (i.e., bird wings and human arms). • **Animal Studies** • TG: L13.Exts (p138) • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • **The Life Cycle of Butterflies** • TG: L05 (pp29-34)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understandings: The development of technology and advancement in science influence each other and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Investigate and describe how moving water and air can be used to make objects and machines, such as a waterwheel and windmill, move. • **Motion and Design** • TG: L09.Exts (pp84-85) • TG: L10.Exts (p95)
GRADE LEVEL EXPECTATION	1.2.2.	Identify rocks and minerals as natural resources and list ways that humans use these resources to meet needs and wants (i.e., fluorite for toothpaste, marble for statues). • **Rocks and Minerals** • TG: L16 (pp113-126) • STC Book: Rocks and Minerals: • (pp07--22), (pp25-27), (pp42-44), (pp59-61) • **Soils** • TG: L01-17 (pp3-172)
GRADE LEVEL	1.2.3.	Recognize that technology extends the sense of sight for observing bones, muscles and joints in greater

EXPECTATION		detail (i.e., X-Rays). • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57) • TG: Pre Assessment (pp 13-17)
GRADE LEVEL EXPECTATION	1.2.4.	Describe the changes to the environment that result from humans obtaining rock and mineral resources (e.g., strip mining). • **STC Book: Rocks and Minerals:** • (pp07-09), (pp42-44)
CONTENT STANDARD	DE.2.	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	2.1.	Enduring Understandings: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	2.1.1.	Explore evaporation and condensation. Identify the changes of state from liquid to gas in evaporation and gas to liquid in condensation using water as an example. • **Changes** • TG: L01-03 (pp3-42) • TG: L08.Exts (p82) • TG: L09 (pp85-94) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Chemical Tests** • TG: L08.Exts (p82) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Land and Water** • TG: L02.Exts (p19)
GRADE LEVEL EXPECTATION	2.1.2.	Observe and describe changes in the properties of water as it changes from solid to liquid to gas. • **Changes** • TG: L01-04 (pp3-52) • TG: L08-09 (pp79-94) • TG: L12 (pp111-118) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Chemical Tests** • TG: L08.Exts (p82) • TG: L11.Exts (pp103-104) • TG: L16.Exts (pp152-153) • TG: L17 (pp155-158) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Liquid Explorations** • TG: Act03 (pp25-31) • **Land and Water** • TG: L02.Exts (p19) • **STC Book: Land and Water:**

		• (pp21-25)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.1.**	Enduring Understandings: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and with energy fields (potential energy).
GRADE LEVEL EXPECTATION	**3.1.1.**	Identify heat energy as the energy that makes things warmer. • **Bubble Festival** • TG: Act10 (pp108-113) • **Changes** • TG: L02 (pp21-30) • **Chemical Tests** • TG: L10 (pp93-100)
GRADE LEVEL EXPECTATION	**3.1.2.**	Identify electrical energy as a form of energy that is used to operate many of our machines and tools. • **Electric Circuits** • TG: L01 Exts (p5) • **STC Book: Electric Circuits:** • (pp17-21), (pp24-28), (pp36-38) • **STC Book: Rocks and Minerals:** • (pp42-44)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.2.**	Enduring Understandings: **Changes** take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the transfer of the different forms of energy.
GRADE LEVEL EXPECTATION	**3.2.1.**	Determine the effect of adding heat energy (warming) or removing heat energy (cooling) on the properties of water as it changes state (gas to liquid to solid, and vice versa). • **Bubble Festival** • TG: Act10 (pp108-113) • **Changes** • TG: L01-03 (pp3-42) • TG: L08.Exts (p82) • TG: L09 (pp85-94) • TG: L13.Exts (p123) • TG: L17 (pp155-158) • **Chemical Tests** • TG: L08.Exts (p82) • TG: L10 (pp93-100) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Land and Water** • TG: L02.Exts (p19)
GRADE LEVEL EXPECTATION	**3.2.2.**	Investigate and describe what happens when an object at a higher temperature is placed in direct contact with an object at a lower temperature. Record data and use the data to describe which way the heat energy is moving between the objects. • **Bubble Festival** • TG: Act10 (pp108-113) • **Changes**

		• TG: L02 (pp21-30) • **Chemical Tests** • TG: L10 (pp93-100)
GRADE LEVEL EXPECTATION	3.2.3.	Demonstrate that energy of motion can be transferred from one object to another (e.g., moving air transfers energy to make a pinwheel spin). Give examples of energy transfer from one object to another. • **Motion and Design** • TG: L06 (pp57-64) • STC Book: Electric Circuits: • (pp13--21), (pp24-28), (pp32-33), (pp36-38)
GRADE LEVEL EXPECTATION	3.2.4.	Simulate how bones, muscles, and joints in the human body work to transfer energy to objects, making them move. • **Building Blocks of Science: Human Bodyworks** • TG: Act 04 (pp 37-43)
CONTENT STANDARD	DE.3.	Energy and Its Effects
PERFORMANCE INDICATOR / GLE	3.4.	Enduring Understandings: People utilize a variety of resources to meet the basic and specific needs of life. Some of these resources cannot be replaced. Other resources can be replenished or exist in such vast quantities they are in no danger of becoming depleted. Often the energy stored in resources must be transformed into more useful forms and transported over great distances before it can be helpful to us.
GRADE LEVEL EXPECTATION	3.4.1.	Investigate and describe how moving water and air can be used to make objects and machines, such as a waterwheel and windmill, move. • **Motion and Design** • TG: L09.Exts (pp84-85) • TG: L10.Exts (p95)
CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.1.	Enduring Understandings: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	5.1.1.	Examine rocks in order to observe their composition and describe the many components found in rocks. • **On Sandy Shores** • TG: Act02 (pp27-43) • **Rocks and Minerals** • TG: L01-02 (pp3-18) • TG: L03.Exts (p22) • TG: L04 (pp27-34) • TG: L16-17 (pp113-128) • **STC Book: Land and Water:** • (pp15-18) • **STC Book: Rocks and Minerals:** • (pp10-12), (pp25-27)
GRADE LEVEL EXPECTATION	5.1.2.	Identify minerals as materials that cannot be physically broken apart any further and may be a rock component. • **Rocks and Minerals** • TG: L04-17 (pp27-128) • **STC Book: Rocks and Minerals:**

		• (pp13-16), (pp17-19), (pp20-22)< (pp42-44)
GRADE LEVEL EXPECTATION	5.1.3.	Sort and group an assortment of minerals based on similarities and differences in their physical properties. • **Rocks and Minerals** • TG: L04-17 (pp27-128) • **STC Book: Rocks and Minerals:** • (pp13-22), (pp42-44)
GRADE LEVEL EXPECTATION	5.1.4.	Sort and group minerals based on the physical properties of hardness, color, luster, and reaction to vinegar (weak acid). Use these properties to identify common minerals (quartz, fluorite, calcite, and gypsum). • **Rocks and Minerals** • TG: L04-17 (pp27-128) • **STC Book: Rocks and Minerals:** • (pp13--22), (pp42-44)
GRADE LEVEL EXPECTATION	5.1.5.	Describe water in terms of its observable properties (transparency, shapelessness, flow). • **Changes** • TG: L02-03 (pp21-42) • TG: L08 (pp79-84) • **STC Book: Land and Water:** • (pp21-25)
CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.3.	Enduring Understandings: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	5.3.1.	Examine an assortment of rocks and use appropriate measuring tools (balances, meter tapes, syringes) to gather data about the rocks' physical properties (length, circumference, weight). • **On Sandy Shores** • TG: Act02 (pp27-43) • **Rocks and Minerals** • TG: L01 (pp3-12) • TG: L02 (pp13-18) • TG: L03.Exts (p22) • TG: L04 (pp27-34) • TG: L16 (pp113-126) • TG: L17 (pp127-128) • **STC Book: Land and Water:** • (pp15-18) • **STC Book: Rocks and Minerals:** • (pp10-12), (pp25-27)
GRADE LEVEL EXPECTATION	5.3.2.	Identify rocks and minerals as natural resources and list ways that humans use these resources to meet needs and wants (i.e., fluorite for toothpaste, marble for statues). • **Rocks and Minerals** • TG: L16 (pp113-126) • STC Book: Rocks and Minerals: • (pp07-61) • **Soils**

		• TG: L01-17 (pp3-172)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.1.**	Enduring Understandings: Living systems demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	**6.1.1.**	Describe how bones, muscles, and joints function together in humans to enable movement, protection and support. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01-04 (pp 19-43) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 03 (p 33) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57)
GRADE LEVEL EXPECTATION	**6.1.2.**	Identify the structures of different types of joints (gliding, hinged, ball and socket) and describe the movement enabled by each. Recognize the importance of each type of joint to human movement. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01-04 (pp 19-43) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 03 (p 33) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57) • **STC Book: Motion and Design:** • (pp07-11)
GRADE LEVEL EXPECTATION	**6.1.3.**	Compare and contrast the structure and function of the human skeleton to that of other vertebrate animals. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83)
GRADE LEVEL EXPECTATION	**6.1.4.**	Observe a variety of plants and animals. Compare specific needs that are common to plants or animals of the same group (i.e., all fish need water but some fish need cold water to live and some need warm water to live, all plants need water but some need a humid environment and some need a dry environment). • **Ant Homes Under the Ground** • TG: Act01 (pp13-23) • **Animal Studies** • TG: L01.Exts (p6) • TG: L02.Exts (pp15-16) • TG: L05.Exts (p58) • **Land and Water** • TG: L14.Exts (p156) • **Plant Growth and Development** • TG: L03-04 (pp13-28) • TG: L16.Exts (pp96-97)

		• STC Book: Animal Studies: • (pp16-19), (pp58-61) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp09-11), (pp14-15) • **Soils** • TG: L09 (pp87-96) • **Terrarium Habitats** • TG: Act01 (pp5-13) • TG: Act02 (pp15-21) • **The Life Cycle of Butterflies** • TG: L02-03 (pp11-22) • TG: L05-08 (pp29-52) • TG: L10-12 (pp63-80) • TG: L15-16 (pp89-96)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.2.**	Enduring Understandings: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	**6.2.1.**	Explain that humans have basic needs for survival as do other animals. Recognize that, like other animals, these basic needs may be specific, such as range of temperature and nutrients. • **Animal Studies** • TG: L11.Exts (p119)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.3.**	Enduring Understandings: **Organisms** respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	**6.3.1.**	Recognize that muscles move bones in response to signals from the brain. • **Building Blocks of Science: Human Bodyworks** • TG: Act 03-04 (pp 31-43) • TG: Ext 03 (p 33) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57)
GRADE LEVEL EXPECTATION	**6.3.2.**	Conduct simple investigations to determine and describe how different body parts respond to of visual, auditory, and tactile stimuli. • **Animal Studies** • TG: L10 (pp107-114) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp44-45)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.4.**	Enduring Understandings: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	**6.4.1.**	Research and report on common diseases or problems of the muscular and skeletal systems. Explain how these systems can be affected by external factors (i.e., bones can be broken and healed, good nutrition leads to strong bones). • **Building Blocks of Science: Human Bodyworks** • TG: Act 01-04 (pp 19-43) • TG: Ext 01 (p 21)

		• TG: Ext 02 (p 26) • TG: Ext 03 (p 33) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.1.**	Enduring Understandings: **Organisms** reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	**7.1.1.**	Observe and describe similarities and differences in the skeleton of an infant to that of an adult human. Recognize that as a human grows and develops the number of bones does not change but the sizes of the bones do change. • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 02 (p 26)
GRADE LEVEL EXPECTATION	**7.1.2.**	Recognize that some insects are considered harmful to humans, plants, and other animals while other insects can be beneficial. Technology allows us to help control the harmful insects (i.e., control of mosquitoes, termites, ticks, etc.). • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Exts (pp70-78) • **Animal Studies** • TG: L06.Exts (p69) • **Buzzing a Hive** • TG: Les01-06 (pp5-66) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Motion and Design:** • (pp12-13) • **STC Book: Plant Growth and Development:** • (pp42-43) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • TG: Act04 (pp43-49) • **Space Science for Grades 3-5** • TG: Ses 1.6 (pp 104-121) • **Terrarium Habitats** • TG: Act04 (pp33-41) • TG: Act05 (pp43-48) • **The Life Cycle of Butterflies** • TG: App-A (pp97-100) • TG: App-B (pp101-110) • TG: L01-14 (pp3-88)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.2.**	Enduring Understandings: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with advantageous traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL	**7.2.1.**	Recognize that there are many different kinds of vertebrates in the world. One way to sort or group

EXPECTATION		vertebrates is according to the structure and function of their skeletons (i.e., bird wings and human arms). • **Animal Studies** • TG: L13.Exts (p138) • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • G: Ext 02 (p 26) • **The Life Cycle of Butterflies** • TG: L05 (pp29-34)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.3.	Enduring Understandings: The development of technology has allowed us to apply our knowledge of genetics, reproduction, development and evolution to meet human wants and needs.
GRADE LEVEL EXPECTATION	7.3.1.	Recognize that technology extends the sense of sight for observing bones, muscles and joints in greater detail (i.e., X-Rays). • **Building Blocks of Science: Human Bodyworks** • TG: Act 01 (pp 19-24) • TG: Act 02 (pp 25-29) • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 07 (p 57) • TG: Pre Assessment (pp 13-17)
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.3.	Enduring Understandings: Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system.
GRADE LEVEL EXPECTATION	8.3.1.	Describe the changes to the environment that result from humans obtaining rock and mineral resources (e.g., strip mining). • **STC Book: Rocks and Minerals:** • (pp07-09), (pp42-44)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

Grade 4

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Generate focused questions and informed predictions about the natural world. • **All Units**
GRADE LEVEL EXPECTATION	1.1.2.	Design and conduct simple to multi-step investigations in order to test predictions. Keep constant all but the condition being tested. • **Ant Homes Under the Ground** • TG: Act05 (pp61-70) • **Building Blocks of Science: Human Bodyworks** • TG: Act 06 (pp 49-53) • TG: Act 11 (pp 77-80) • TG: Ext 06 (p 51) • **Building Blocks of Science: Measure It!** • TG: L03 (pp 23-38) • TG: L04 (pp 39-44) • **Crime Lab Chemistry** • TG: Act03 (pp47-62) • TG: Exts (pp63-64) • **Land and Water** • TG: L15 (pp163-172) • **Plant Growth and Development** • TG: L11.Exts (p63) • TG: L16.Exts (pp96-97) • **Sound** • TG: L12.Exts (p88)
GRADE LEVEL EXPECTATION	1.1.3.	Accurately collect data using observations, simple tools and equipment. Display and organize data in tables, charts, diagrams, and bar graphs or plots over time. Compare and question results with and from others. • **All Units**
GRADE LEVEL EXPECTATION	1.1.4.	Construct a reasonable explanation by analyzing evidence from the data. Revise the explanation after comparing results with other sources or after further investigation. • **Animal Studies** • TG: L11.Exts (p119) • **Building Blocks of Science: Human Bodyworks** • TG: Act 03 (pp 31-35) • TG: Act 06 (pp 49-53) • TG: Ext 06 (p 51) • **Building Blocks of Science: Measure It!** • TG: L01-04 (pp 11-44) • **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 04 (pp 51-63) • **Chemical Tests** • TG: App-A (pp159-160) • TG: L03.Exts (pp28-29) • TG: L17 (pp155-158) • **Ecosystems**

		• TG: L08 (pp83-94) • TG: L12 (pp117-124) • **Floating and Sinking** • TG: L02 (pp13-20) • TG: L06.Exts (p52) • TG: L07.Exts (pp57-58) • **Food Chemistry** • TG: L08.Exts (p81) • **GEMS: Electric Circuits** • TG: Ses11 (pp171-175) • **Land and Water** • TG: L01 (pp3-10) • TG: L04 (pp37-50) • TG: L05.Exts (p56) • TG: L07.Exts (p79) • TG: L09 (pp99-108) • TG: L17 (pp183-186) • **Microworlds** • TG: L06 (pp31-36) • TG: L10-12 (pp55-70) • TG: L14-16 (pp75-86) • **Plant Growth and Development** • TG: L01 (pp3-8) • TG: L09 (pp47 - 54) • TG: L17 (pp99-100) • **Rocks and Minerals** • TG: L04-09 (pp27-70) • TG: L1-13 (pp79-94) • TG: L15 (pp103-112) • **Sound** • TG: L04 (pp23-32) • TG: L05 (pp33-38) • TG: L16 (pp113-116) • **Space Science for Grades 3-5** • TG: Ses 1.1-1.9 (pp 28-167) • TG: Ses 2.1-2.6 (pp 172-281) • TG: Ses 3.1-3.4 (pp 286-335) • TG: Ses 4.1-4.5 (pp 340-423)
GRADE LEVEL EXPECTATION	**1.1.5.**	Communicate procedures, data, and explanations to a variety of audiences. Justify the results by using evidence to form an argument. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.6.**	Use mathematics, reading, writing, and technology when conducting scientific inquiries. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.7.**	Test objects for their conductivity and classify the objects based on whether they conduct electricity (conductors) or do not conduct electricity (insulators). • **Electric Circuits** • TG: L02 (pp7-14) • TG: L07 (pp39-44) • TG: L09 (pp49-52) • **GEMS: Electric Circuits**

		• TG: Ses02 (pp35-71) • TG: Ses03 (pp73-87) • TG: Ses05 (pp111-119) • **STC Book: Electric Circuits:** • (pp11-21), (pp29-31)
GRADE LEVEL EXPECTATION	**1.1.8.**	Test objects for their magnetism and classify objects based on whether they are attracted to a magnet or not attracted to a magnet. • **Rocks and Minerals** • TG: L11 (pp79-84)
GRADE LEVEL EXPECTATION	**1.1.9.**	Investigate evaporation and condensation. Recognize the relationship between temperature and changes of state from liquid to gas in evaporation and gas to liquid in condensation using water as an example. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Measure It!** • TG: L04 (pp 39-44) • TG: L05 (pp 45-47) • **Chemical Tests** • TG: L08.Exts (p82) • TG: L10 (pp93-100) • **Ecosystems** • TG: L11.Exts (p114) • **Food Chemistry** • TG: L12.Exts (pp112-113) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Hot Water Warm Homes From Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Land and Water** • TG: L02.Exts (p19) • **STC Book: Floating and Sinking** : • (pp24-26), (pp48-50) • **STC Book: Land and Water:** • (pp21-25)
GRADE LEVEL EXPECTATION	**1.1.10.**	Identify the basic components (i.e., battery, wires, bulbs, switch) of an electric circuit and understand their function. Draw an example circuit and label the important parts. Relate that circuits must take the form of complete (closed) loops before electrical energy can pass. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**1.1.11.**	Use diagrams to illustrate ways that two light bulbs can be attached in simple series and in parallel to a battery to make a complete circuit. Explain any differences that will result in the brightness of the bulbs, depending upon the way they are connected to the battery. • **Electric Circuits** • TG: L11 Exts (p63)

		• TG: L13 (pp69-72) • TG: L16 (pp81-84) • **GEMS: Electric Circuits** • TG: Ses03-04 (pp73-108) • TG: Ses06-10 (pp121-168)
GRADE LEVEL EXPECTATION	**1.1.12.**	Test objects for their conductivity and classify the materials based on whether they conduct electricity (conductors) or do not conduct electricity (insulators). Choose which materials would be used to construct a circuit and justify your choices. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**1.1.13.**	Demonstrate, through writing and drawing, a variety of ways to construct open, closed, simple parallel and series circuits. List the advantages and/or disadvantages of series and parallel circuits. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**1.1.14.**	Observe diagrams or pictures of a variety of circuits and demonstrate how the switch can be used to open or close the circuit. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**1.1.15.**	Observe that electricity can be transformed into heat, light, and sound as well as the energy of motion. Explain that electrical circuits provide a means of transferring electrical energy from sources such as batteries to devices where it is transformed into heat, light, sound, and the energy of motion. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**1.1.16.**	Observe and describe the path of the Sun at it appears to move across the sky from east to west during the course of a day. • **Moons From Jupiter** • TG: Act01 (pp7-17) • **Space Science for Grades 3-5** • TG: Ses 1.2 (pp 46-55) • TG: Ses 1.6 (pp 104-121)

		• TG: Ses 3 Post Assessment (pp 1-2) • TG: Ses 3 Pre Assessment (pp 1-2) • TG: Ses 3.1-3.4 (pp 286-335)
GRADE LEVEL EXPECTATION	1.1.17.	Use models to describe how the Earth's rotation on its axis causes one half of the Earth to always be illuminated by the Sun (day) and one half to not be illuminated by the Sun (night). Apply this model of the rotating Earth to explain why the Sun appears to move across the sky each day from east to west. • **Space Science for Grades 3-5** • TG: Ses 3.1-3.4 (pp 286-335 TG: Ses 4.1-4.5 (pp 340-423)
GRADE LEVEL EXPECTATION	1.1.18.	Observe the size of the Sun and Moon in the sky. Use models to illustrate the approximate size and distance relationship between the Sun and Moon. Explain why the Sun and Moon appear to be similar in size when observed in the sky. • **Space Science for Grades 3-5** • TG: Ses 1.1-1.3 (pp 28-69) • TG: Ses 3 Post Assessment (pp 1-2) • TG: Ses 3 Pre Assessment (pp 1-2) • TG: Ses 3 Reading (pp 1-2) • TG: Ses 4.1 (pp 340-364)
GRADE LEVEL EXPECTATION	1.1.19.	Research and develop a short report on one of the planets in the Solar System. Compare the information learned in the reports. • **Moons From Jupiter** • TG: Act04 (pp41-51) • Space Science for Grades 3-5 • TG: Ses 1 Post Assessment (pp 1-2) • TG: Ses 1 Pre Assessment (p 1) • 3-5 TG: Ses 1.1-1.9 (pp 28-167)
GRADE LEVEL EXPECTATION	1.1.20.	Examine materials that compose soil (i.e., sand, clay, humus, gravel, water) and describe these on the basis of their properties (i.e., color, luster, granularity, texture, mass relative to size, particle size, ability to absorb water, pore space, ability to compact). Describe how certain soil properties affect the way in which soil is eroded and deposited by water. • **Land and Water** • TG: L05-06 (pp51-74) • TG: L14.Exts (p156) • **Microscopic Explorations** • TG: Act06 (pp69-73) • **On Sandy Shores** • TG: Act02 (pp27-43) • **Stories in Stone** • TG: Ses05 (pp65-73) • **Terrarium Habitats** • TG: Act01 (pp5-13)
GRADE LEVEL EXPECTATION	1.1.21.	Create a model that can be used to describe how water moves from one place on Earth to another in a continuous cycle through the processes of evaporation, condensation, and precipitation. • **Chemical Tests** • TG: L05.Exts (p50) • **Land and Water** • TG: L01-03 (pp3-36)

		• TG: L06 (pp63-74) • TG: L09.Exts (p103) • TG: L14.Exts (p156) • TG: L15.Exts (p167)
GRADE LEVEL EXPECTATION	1.1.22.	Use stream tables to observe the creation of landforms as water flows over and through the land. Describe changes that result from the flowing of water, using correct geographic terminology (i.e., canyon, delta, tributary). Describe changes to the water as it flows over land (i.e., color, transparency). • **Land and Water** • TG: L03-16 (pp29-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	1.1.23.	Describe how fast-moving water and slow-moving water over the land affect erosion and deposition. • **Land and Water** • TG: L03-16 (pp29-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	1.1.24.	Use stream tables to model and describe the effects of slope. • **Land and Water** • TG: L03-15 (pp29-172) • **STC Book: Land and Water:** • (pp36-38) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	1.1.25.	Describe how the flow of water (fast or slow) is affected by the slope of the land, the amount and type of vegetation, and the landforms. • **Land and Water** • TG: L09 (pp99-108) • TG: L11 (pp119-128) • TG: L14 (pp153-162)
GRADE LEVEL EXPECTATION	1.1.28.	Identify and describe different types of storm systems that occur in Delaware (i.e., tornadoes, hurricanes, thunderstorms, blizzards). From observed and gathered historical data, identify times of the year when these storms are most likely to occur. • **Land and Water** • TG: L12 (pp129-142) • **STC Book: Land and Water:** • (pp10-14), (pp36-38) • **STC Book: Microworlds:** • (pp13- 15) • **STC Book: Rocks and Minerals:**

		• (pp28-30)
GRADE LEVEL EXPECTATION	1.1.29.	Select and use a variety of appropriate instruments (i.e., graduated cylinders, stream tables, hand lens, ruler, balances) for collecting, recording, and analyzing data obtained from stream table investigations. Communicate the results of stream table investigations through record sheets, oral and written observations, and drawings. • **Building Blocks of Science: Human Bodyworks** • TG: Act 04 (pp 37-43) • TG: Act 11 (pp 77-80) • **Building Blocks of Science: Measure It!** • TG: L02 (pp 17-22) • TG: L05 (pp 45-47) • **Land and Water** • TG: L03-06 (pp29-74) • TG: L07.Exts (p79) • TG: L09.Exts (p103) • TG: L10-16 (pp109-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49) • **Space Science for Grades 3-5** • TG: Ses 1.3-1.9 (pp 56-167)
GRADE LEVEL EXPECTATION	1.1.30.	Compare and contrast structures that have similar functions in various organisms (e.g. eyes, ears, mouths). Explain that the function of the structure is similar although the structures may have different physical appearances (e.g., compare eyes of an owl with the eyes of a crayfish). • **Ant Homes Under the Ground** • TG: Act02-03 (pp25-43) • TG: Exts (pp70-78) • **Animal Studies** • TG: L03-06 (pp21-74) • TG: L08 (pp87-96) • TG: L13.Exts (p138) • TG: L14-15 (pp143-164) • TG: L16.Exts (p167) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83) • **Microscopic Explorations** • TG: Act08-10 (pp81-97) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L14 (pp79-88) • **STC Book: Animal Studies:** • (pp06-08), (pp16-19) • **STC Book: Electric Circuits:** • (pp11-12), (pp47-49) • **STC Book: Floating and Sinking** : • (pp54--61) • **STC Book: Microworlds:** • (pp31-33), (pp40-43), (pp58-61) • **STC Book: Motion and Design:**

		• (pp07-09) • **STC Book: Plant Growth and Development:** • (pp44-45) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • TG: Act04 (pp43-49) • **Sound** • TG: L04.Exts (pp26-27) • TG: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	**1.1.31.**	Observe and identify structures of plants and describe the function of each structure. Explain that most plants produce many seeds, most of which do not germinate and grow into new plants. • **Land and Water** • TG: L14.Exts (p156) • **Plant Growth and Development** • TG: L02 (pp9-12) • TG: L04-06 (pp25-38) • TG: L10 (pp55-60) • TG: L11.Exts (p63) • TG: L13 (pp71-78) • **STC Book: Plant Growth and Development:** • (pp14-17), (pp22-27), (pp39-41)
GRADE LEVEL EXPECTATION	**1.1.32.**	Sort and group plants and animals according to similarities in structures or functions of structures. Explain why the plants and animals have been grouped in this manner. • **Plant Growth and Development** • TG: L10 (pp55-60)
GRADE LEVEL EXPECTATION	**1.1.33.**	Select a living organism and develop descriptions of how the organism responds to a variety of stimuli (i.e., light/dark, warm temperature/cold temperature) based on multiple observations and data collection (e.g., crayfish and Bess Beatles). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Act05 (pp61-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01.Exts (p6) • TG: L02.Exts (pp15-16) • TG: L03-07 (pp21-36) • TG: L09-10 (pp97-114) • TG: L12-15 (pp123-164) • TG: L16.Exts (p167) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Animal Studies:** • (pp22-32), (pp50-52) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45)

		• **Schoolyard Ecology** • TG: Act02-04 (pp21-49) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	1.1.35.	Compare the similarities and differences of offspring to their parents (e.g., crayfish, bean sprouts). Know that offspring receive characteristics from both parents. • **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 05 (pp 65-73) • TG: Act 06 (pp 75-79) • TG: Ext 05 (p 71) • TG: Post Assessment (pp 85-91) • TG: Pre Assessment (pp 17-19) • **STC Book: Plant Growth and Development:** • (pp34-36)
GRADE LEVEL EXPECTATION	1.1.36.	Construct the life cycle of a bean plant through the use of diagrams. Describe the plant in different stages of its life cycle from seed, to seedling, to mature plant, to death, and explain how the structures of the plant change over time. Recognize that these stages of the life cycle are predictable and describable. • **Ecosystems** • TG: L03.Exts (p29) • TG: L05 (pp53-60) • TG: L06 (pp61-74) • **Plant Growth and Development** • TG: L04-07 (pp25-42) • TG: L10 (pp55-60) • TG: L12 (pp67-70) • TG: L15-17 (pp89-100) • **STC Book: Ecosystems:** • (pp31-34) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp39-41), (pp46-47)
GRADE LEVEL EXPECTATION	1.1.37.	Research the life cycle of an organism. Diagram the life cycle of the organism and describe how the organism changes over time. Compare the life cycle of this organism to the life cycle of various other organisms. Recognize that all organisms go through a life cycle. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Animal Studies** • TG: L04.Exts (pp41-42) • TG: L07.Exts (pp79-80) • TG: L09.Exts (pp101-102) • **Ecosystems** • TG: L03.Exts (p29) • TG: L05 (pp53-60) • TG: L06 (pp61-74) • **Plant Growth and Development** • TG: L10 (pp55-60) • TG: L12 (pp67-70) • TG: L15 (pp89-94) • TG: L16 (pp95-98) • **STC Book: Animal Studies:** • (pp06-08), (pp12-15), (pp35-39)

		• **STC Book: Ecosystems:** • (pp31-34) • **STC Book: Food Chemistry:** • (pp21-23) • **STC Book: Microworlds:** • (pp28-30) • **STC Book: Plant Growth and Development:** • (pp39-41), (pp46-47)
GRADE LEVEL EXPECTATION	**1.1.38.**	Describe how similar structures found on different organisms (e.g., eyes, ears, mouths) have similar functions and enable those organisms to survive and reproduce in different environments (e.g., eyes of owls versus eyes of crustaceans). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Exts (pp70-78) • **Animal Studies** • TG: L03-06 (pp21-74) • TG: L08 (pp87-96) • TG: L13.Exts (p138) • TG: L14 (pp143-156) • TG: L15 (pp157-164) • TG: L16.Exts (p167) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83) • **Microscopic Explorations** • TG: Act08-10 (pp81-97) • **Plant Growth and Development** • TG: L08 (pp43-46) • TG: L09 (pp47 - 54) • TG: L14 (pp79-88) • **STC Book: Animal Studies:** • (pp06-08), (pp16-19) • **STC Book: Electric Circuits:** • (pp11-12), (pp47-49) • **STC Book: Floating and Sinking** : • (pp54-61) • **STC Book: Microworlds:** • (pp31-33), (pp40-43), (pp58-61) • **STC Book: Motion and Design:** • (pp07-09) • **STC Book: Plant Growth and Development:** • (pp44-45) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • TG: Act04 (pp43-49) • **Sound** • TG: L04.Exts (pp26-27) • TG: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)

GRADE LEVEL EXPECTATION	1.1.39.	Recognize that there are variations among organisms of the same kind. Observe organisms of the same kind and describe how their physical appearances differ. • **Animal Studies** • TG: L05.Exts (p58) • TG: L08.Exts (p94) • **STC Book: Animal Studies:** • (pp45-49)
GRADE LEVEL EXPECTATION	1.1.40.	Predict, investigate and describe how plants can affect water flow, run off and erosion. Relate this knowledge to an ecosystem in Delaware (i.e., planting beach grass to stabilize dunes, planting grass on a slope to decrease soil erosion). • **Land and Water** • TG: L03-07 (pp29-84) • TG: L10-15 (pp109-172) • **On Sandy Shores** • TG: Act05 (pp91-108) • **STC Book: Animal Studies:** • (pp40-42) • **STC Book: Ecosystems:** • (pp31-37), (pp45-48), (pp57-59) • **STC Book: Land and Water:** • (pp36-38) • **STC Book: Plant Growth and Development:** • (pp18-19), (pp53-55) • **STC Book: Rocks and Minerals:** • (pp47-49)
CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understandings: The development of technology and advancement in science influence each other and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Using books, computers, and other resources, search for ways that people use natural resources to supply energy needs for lighting, heating, and electricity. Report your results by making a poster, written report or oral presentation. • **Hot Water Warm Homes From Sunlight** • TG: Ses01-05 (pp7-41) • **Investigating Artifacts** • TG: Ses01-06 (pp7-63) • **On Sandy Shores** • TG: Act05 (pp91-108) • **STC Book: Rocks and Minerals:** • (pp07-09)
GRADE LEVEL EXPECTATION	1.2.2.	Using newspapers, the internet, and actual sky observations when possible, chart the appearance of the Moon in the night sky over the course of at least two months. Identify the basic pattern of the Moon's appearance. Classify the Moon's appearance by using the terms new, first quarter, full, last (third) quarter. • **Space Science for Grades 3-5** • TG: Ses 4 Post Assessment (pp 1-2) • TG: Ses 4 Pre Assessment (pp 1-2) • TG: Ses 4.1-4.5 (pp 340-423)
GRADE LEVEL EXPECTATION	1.2.3.	Use photos gathered from robot probes, the Hubble telescope, and manned exploration of the Moon, to

		examine pictures of the planets and Moon. • **Moons From Jupiter** • TG: Act02 (pp19-29) • **STC Book: Rocks and Minerals:** • (pp39-41) • **Space Science for Grades 3-5** • TG: Ses 1 Post Assessment (pp 1-2) • TG: Ses 1 Pre Assessment (p 1) • TG: Ses 1.4-1.9 (pp 70-167) • TG: Ses 2.6 (pp 260-281) • TG: Ses 4 Post Assessment (pp 1-2) • TG: Ses 4 Pre Assessment (pp 1-2) • TG: Ses 4.1-4.5 (pp 340-423)
GRADE LEVEL EXPECTATION	1.2.4.	Using newspapers, computer internet sites, and other information resources, identify weather conditions in different parts of the world. Compare this with the local weather in Delaware and discuss how weather conditions for a specific day may vary around the USA and world. • **STC Book: Electric Circuits:** • (pp56-59) • **STC Book: Land and Water:** • (pp57-61)
GRADE LEVEL EXPECTATION	1.2.5.	Observe satellite photos showing change over time of landforms (i.e., Chesapeake Bay, Cape Henlopen, Delaware coastline) and predict future changes that may occur. Describe how these predictions may affect human activities (i.e., locations for building). • **Land and Water** • TG: L03-10 (pp29-118) • TG: L14-15 (pp153-172) • **STC Book: Rocks and Minerals:** • (pp17-19), (pp28-30)
GRADE LEVEL EXPECTATION	1.2.7.	Observe seeded and seedless varieties of fruits (i.e., watermelon). Provide reasoning for why seedless fruits have been developed by scientists. • **STC Book: Plant Growth and Development:** • (pp34-36)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	2.1.	Enduring Understandings: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	2.1.1.	Test objects for their conductivity and classify the objects based on whether they conduct electricity (conductors) or do not conduct electricity (insulators). • **Electric Circuits** • TG: L02 (pp7-14) • TG: L07 (pp39-44) • TG: L09 (pp49-52) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • TG: Ses03 (pp73-87) • TG: Ses05 (pp111-119) • **STC Book: Electric Circuits:**

		• (pp11-21), (pp29-31)
GRADE LEVEL EXPECTATION	2.1.2.	Test objects for their magnetism and classify objects based on whether they are attracted to a magnet or not attracted to a magnet. • **Rocks and Minerals** • TG: L11 (pp79-84)
GRADE LEVEL EXPECTATION	2.1.3.	Investigate evaporation and condensation. Recognize the relationship between temperature and changes of state from liquid to gas in evaporation and gas to liquid in condensation using water as an example. • **Bubble Festival** • TG: Act10 (pp108-113) • **Building Blocks of Science: Measure It!** • TG: L04 (pp 39-44) • TG: L05 (pp 45-47) • **Chemical Tests** • TG: L08.Exts (p82) • TG: L10 (pp93-100) • TG: L10.Exts (p97) • **Ecosystems** • TG: L11.Exts (p114) • **Food Chemistry** • TG: L12.Exts (pp112-113) • **GEMS: Electric Circuits** • TG: Ses02 (pp35-71) • **Hot Water Warm Homes From Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Land and Water** • TG: L02.Exts (p19) • **STC Book: Floating and Sinking** : • (pp24-26), (pp48-50) • **STC Book: Land and Water:** • (pp21-25)
CONTENT STANDARD	DE.3.	Energy and Its Effects
PERFORMANCE INDICATOR / GLE	3.1.	Enduring Understandings: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and with energy fields (potential energy).
GRADE LEVEL EXPECTATION	3.1.1.	Identify, as basic forms of energy; light, heat, sound, electrical, and energy of motion. • **Bubble Festival** • TG: Act05 (pp80-85) • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84) • **Chemical Tests** • TG: L10 (pp93-100) • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **Motion and Design** • TG: L06 (pp57-64)

		• TG: L11 (pp101-108) • TG: L12 (pp109-116) • **STC Book: Electric Circuits:** • (pp07-21), (pp24-61) • **Sound** • TG: L01-17 (pp3-118)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.2.**	Enduring Understandings: **Changes** take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the transfer of the different forms of energy.
GRADE LEVEL EXPECTATION	**3.2.1.**	Identify the basic components (i.e., battery, wires, bulbs, switch) of an electric circuit and understand their function. Draw an example circuit and label the important parts. Relate that circuits must take the form of complete (closed) loops before electrical energy can pass. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**3.2.2.**	Test objects for their conductivity and classify the materials based on whether they conduct electricity (conductors) or do not conduct electricity (insulators). Choose which materials would be used to construct a circuit and justify your choices. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp11-21), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**3.2.3.**	Demonstrate, through writing and drawing, a variety of ways to construct open, closed, simple parallel and series circuits. List the advantages and/or disadvantages of series and parallel circuits. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp07-21), (pp24-61), (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**3.2.4.**	Use knowledge of electric circuits to explain how a wall switch can be used to 'turn on' and 'turn off' a ceiling lamp. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	**3.2.5.**	Observe diagrams or pictures of a variety of circuits and demonstrate how the switch can be used to open

		or close the circuit. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
GRADE LEVEL EXPECTATION	3.2.6.	Recognize magnetism as a force that attracts or repels a variety of common materials and identify the physical property of materials that makes them attracted to magnets. • **Rocks and Minerals** • TG: L11.Exts (p80)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.3.	Enduring Understandings: Energy readily transforms from one form to another, but these transformations are not always reversible. The details of these transformations depend upon the initial form of the energy and the properties of the materials involved. Energy may transfer into or out of a system and it may change forms, but the total energy cannot change.
GRADE LEVEL EXPECTATION	3.3.1.	Observe that electricity can be transformed into heat, light, and sound as well as the energy of motion. Explain that electrical circuits provide a means of transferring electrical energy from sources such as batteries to devices where it is transformed into heat, light, sound, and the energy of motion. • **Electric Circuits** • TG: L01-17 (pp3-86) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **STC Book: Electric Circuits:** • (pp13-16), (pp29-33), (pp39-44)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.4.	Enduring Understandings: People utilize a variety of resources to meet the basic and specific needs of life. Some of these resources cannot be replaced. Other resources can be replenished or exist in such vast quantities they are in no danger of becoming depleted. Often the energy stored in resources must be transformed into more useful forms and transported over great distances before it can be helpful to us.
GRADE LEVEL EXPECTATION	3.4.1.	Explain where the electrical energy available at an electric outlet in your home or school comes from. • **Electric Circuits** • TG: L01 Exts (p5) • **STC Book: Electric Circuits:** • (pp17-21), (pp24-28), (pp36-38) • **STC Book: Rocks and Minerals:** • (pp07-09), (pp42-44)
GRADE LEVEL EXPECTATION	3.4.2.	Using books, computers, and other resources, search for ways that people use natural resources to supply energy needs for lighting, heating, and electricity. Report your results by making a poster, written report or oral presentation. • **Hot Water Warm Homes From Sunlight** • TG: Ses01-05 (pp7-41) • **Investigating Artifacts** • TG: Ses01-06 (pp7-63) • **On Sandy Shores** • TG: Act05 (pp91-108)

		• **STC Book: Rocks and Minerals:** • (pp07-09)
CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	**4.1.**	Enduring Understandings: There are observable, predictable patterns of movement in the Sun, Earth, and Moon system that account for day and night.
GRADE LEVEL EXPECTATION	**4.1.1.**	Observe and describe the path of the Sun at it appears to move across the sky from east to west during the course of a day. • **Moons From Jupiter** • TG: Act01 (pp7-17) • **Space Science for Grades 3-5** • TG: Ses 1.2 (pp 46-55) • TG: Ses 1.6 (pp 104-121) • TG: Ses 3 Post Assessment (pp 1-2) • TG: Ses 3 Pre Assessment (pp 1-2) • TG: Ses 3.1-3.4 (pp 286-335)
GRADE LEVEL EXPECTATION	**4.1.2.**	Use models to describe how the Earth's rotation on its axis causes one half of the Earth to always be illuminated by the Sun (day) and one half to not be illuminated by the Sun (night). Apply this model of the rotating Earth to explain why the Sun appears to move across the sky each day from east to west. • **Space Science for Grades 3-5** • TG: Ses 3.1-3.4 (pp 286-335) • TG: Ses 4.1-4.5 (pp 340-423)
GRADE LEVEL EXPECTATION	**4.1.3.**	Using newspapers, the internet, and actual sky observations when possible, charts the appearance of the Moon in the night sky over the course of at least two months. Identify the basic pattern of the Moon's appearance. Classify the Moon's appearance by using the terms new, first quarter, full, last (third) quarter. • **Space Science for Grades 3-5** • TG: Ses 4 Post Assessment (pp 1-2) • TG: Ses 4 Pre Assessment (pp 1-2) • TG: Ses 4.1 –4.5(pp 340-423)
GRADE LEVEL EXPECTATION	**4.1.4.**	Observe the size of the Sun and Moon in the sky. Use models to illustrate the approximate size and distance relationship between the Sun and Moon. Explain why the Sun and Moon appear to be similar in size when observed in the sky. • **Space Science for Grades 3-5** • TG: Ses 1.1-1.3 (pp 28-69) • TG: Ses 3 Post Assessment (pp 1-2) • TG: Ses 3 Pre Assessment (pp 1-2) • TG: Ses 3 Reading (pp 1-2) • TG: Ses 4.1 (pp 340-364)
CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	**4.2.**	Enduring Understandings: Most objects in the Solar System orbit the Sun.
GRADE LEVEL EXPECTATION	**4.2.1.**	Identify and order the major planets and describe how they all revolve around the Sun. • **Space Science for Grades 3-5** • TG: Ses 1.6 (pp 104-121)

GRADE LEVEL EXPECTATION	4.2.2.	Research and develop a short report on one of the planets in the Solar System. Compare the information learned in the reports. • **Moons From Jupiter** • TG: Act04 (pp41-51) • **Space Science for Grades 3-5** • TG: Ses 1 Post Assessment (pp 1-2) • TG: Ses 1 Pre Assessment (p 1) • TG: Ses 1.1 (pp 28-45) • TG: Ses 1.2 (pp 46-55) • TG: Ses 1.4-1.9 (pp 70-167)
GRADE LEVEL EXPECTATION	4.2.3.	Describe our Sun as a star that is similar to other stars that are seen in the night sky. Explain why our Sun appears to be larger in size than other stars. • **Space Science for Grades 3-5** • TG: Ses 1 Post Assessment (pp 1-2) • TG: Ses 1 Pre Assessment (p 1) • TG: Ses 1.4-1.9 (pp 70-167) • TG: Ses 3.1-3.4 (pp 286-335)
CONTENT STANDARD	DE.4.	**Earth in Space**
PERFORMANCE INDICATOR / GLE	4.3.	Enduring Understandings: Technology expands our knowledge of the Earth, Moon, and Sun System.
GRADE LEVEL EXPECTATION	4.3.1.	Use photos gathered from terrestrial telescopes, robot probes, the Hubble telescope, and manned exploration of the Moon to examine pictures of the planets and Moon. • **Moons From Jupiter** • TG: Act02 (pp19-29) • **STC Book: Rocks and Minerals:** • (pp39-41) • **Space Science for Grades 3-5** • TG: Ses 1 Post Assessment (pp 1-2) • TG: Ses 1 Pre Assessment (p 1) • TG: Ses 1.4-1.9 (pp 70-167) • TG: Ses 2.6 (pp 260-281) • TG: Ses 4 Post Assessment (pp 1-2) • TG: Ses 4 Pre Assessment (pp 1-2) • TG: Ses 4.1-4.5 (pp 340-423)
CONTENT STANDARD	DE.5.	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	5.1.	Enduring Understandings: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	5.1.1.	Examine materials that compose soil (i.e., sand, clay, humus, gravel, water) and describe these on the basis of their properties (i.e., color, luster, granularity, texture, mass relative to size, particle size, ability to absorb water, pore space, ability to compact). Describe how certain soil properties affect the way in which soil is eroded and deposited by water. • **Land and Water** • TG: L05 (pp51-62) • TG: L06 (pp63-74) • TG: L14.Exts (p156) • **Microscopic Explorations** • TG: Act06 (pp69-73) • **On Sandy Shores**

		• TG: Act02 (pp27-43) • **Stories in Stone** • TG: Ses05 (pp65-73) • **Terrarium Habitats** • TG: Act01 (pp5-13)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.2.**	Enduring Understandings: Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.
GRADE LEVEL EXPECTATION	**5.2.1.**	Create a model that can be used to describe how water moves from one place on Earth to another in a continuous cycle through the processes of evaporation, condensation, and precipitation. • **Chemical Tests** • TG: L05.Exts (p50) • **Land and Water** • TG: L01-03 (pp3-36) • TG: L06 (pp63-74) • TG: L09.Exts (p103) • TG: L14.Exts (p156) • TG: L15.Exts (p167)
GRADE LEVEL EXPECTATION	**5.2.2.**	Use stream tables to observe the creation of landforms as water flows over and through the land. Describe changes that result from the flowing of water, using correct geographic terminology (i.e., canyon, delta, tributary). Describe changes to the water as it flows over land (i.e., color, transparency). • **Land and Water** • TG: L03-06 (pp29-74) • TG: L07.Exts (p79) • TG: L09.Exts (p103) • TG: L10-16 (pp109-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	**5.2.3.**	Describe how fast-moving water and slow-moving water over the land affect erosion and deposition. • **Land and Water** • TG: L03-06 (pp29-74) • TG: L07.Exts (p79) • TG: L09.Exts (p103) • TG: L10-16 (pp109-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	**5.2.4.**	Use stream tables to model and describe the effects of slope. Describe how the flow of water (fast or slow) is affected by the slope of the land, the amount and type of vegetation, and the landforms. • **Land and Water** • TG: L03-07 (pp29-84) • TG: L10-15 (pp109-172)

		• **STC Book: Land and Water:** • (pp36-38) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	5.2.5.	Use stream tables to model the effect of human activity on erosion and deposition. Describe how human activity (i.e., building a dam, clear cutting a forest, bulldozing a roadway) affects the amount of erosion and deposition and changes the environment. • **Land and Water** • TG: L03-06 (pp29-74) • TG: L07.Exts (p79) • TG: L09.Exts (p103) • TG: L10-16 (pp109-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49)
GRADE LEVEL EXPECTATION	5.2.8.	Identify and describe different types of storm systems that occur in Delaware (i.e., tornadoes, hurricanes, thunderstorms, blizzards). From observed and gathered historical data, identify times of the year when these storms are most likely to occur. • **Land and Water** • TG: L12 (pp129-142) • **STC Book: Land and Water:** • (pp10-114), (pp36-38) • **STC Book: Microworlds:** • (pp13- 15) • **STC Book: Rocks and Minerals:** • (pp28-30)
GRADE LEVEL EXPECTATION	5.2.9.	Using newspapers, computer internet sites, and other information resources, identify weather conditions in different parts of the world. Compare this with the local weather in Delaware and discuss how weather conditions for a specific day may vary around the USA and world. • **STC Book: Electric Circuits:** • (pp56-59) • **STC Book: Land and Water:** • (pp57-61)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	5.3.	Enduring Understandings: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	5.3.1.	Observe satellite photos showing change over time of landforms (i.e., Chesapeake Bay, Cape Henlopen, Delaware coastline) and predict future changes that may occur. Describe how these predictions may affect human activities (i.e., locations for building). • **Land and Water** • TG: L03-07 (pp29-84) • TG: L09-10 (pp99-118) • TG: L14-15 (pp153-172) • **STC Book: Rocks and Minerals:**

		• (pp17-19), (pp28-30)
GRADE LEVEL EXPECTATION	5.3.2.	Select and use a variety of appropriate instruments (i.e., graduated cylinders, stream tables, hand lens, ruler, balances) for collecting, recording, and analyzing data obtained from stream table investigations. Communicate the results of stream table investigations through record sheets, oral and written observations, and drawings. • **Building Blocks of Science: Human Bodyworks** • TG: Act 04 (pp 37-43) • TG: Act 11 (pp 77-80) • **Building Blocks of Science: Measure It!** • TG: L02 (pp 17-22) • TG: L05 (pp 45-47) • **Land and Water** • TG: L03-07 (pp29-84) • TG: L09.Exts (p103) • TG: L10-16 (pp109-182) • **On Sandy Shores** • TG: Act02 (pp27-43) • TG: Act03 (pp45-56) • **STC Book: Rocks and Minerals:** • (pp47-49) • **Space Science for Grades 3-5** • TG: Ses 1.3-1.9 (pp 56-167)
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.1.	Enduring Understandings: Living systems demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	6.1.1.	Compare and contrast structures that have similar functions in various organisms (e.g., eyes, ears, mouths). Explain that the function of the structure is similar although the structures may have different physical appearances (e.g., compare eyes of an owl with the eyes of a crayfish). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Exts (pp70-78) • **Animal Studies** • TG: L03-06 (pp21-74) • TG: L08 (pp87-96) • TG: L13.Exts (p138) • TG: L14-15 (pp143-164) • TG: L16.Exts (p167) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83) • **Microscopic Explorations** • TG: Act08-10 (pp81-97) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L14 (pp79-88) • **STC Book: Animal Studies:** • (pp06-08), (pp16-19) • **STC Book: Electric Circuits:** • (pp11-12), (pp47-49) • **STC Book: Floating and Sinking** :

		• (pp54--61) • **STC Book: Microworlds:** • (pp31-33), (pp40-43), (pp58-61) • **STC Book: Motion and Design:** • (pp07-09) • **STC Book: Plant Growth and Development:** • (pp44-45) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • TG: Act04 (pp43-49) • **Sound** • TG: L04.Exts (pp26-27) • G: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	**6.1.2.**	Observe and identify structures of plants and describe the function of each structure. Explain that most plants produce many seeds, most of which do not germinate and grow into new plants. • **Land and Water** • TG: L14.Exts (p156) • **Plant Growth and Development** • TG: L02 (pp9-12) • TG: L04-06 (pp25-38) • TG: L10 (pp55-60) • TG: L11.Exts (p63) • TG: L13 (pp71-78) • **STC Book: Plant Growth and Development:** • (pp14-17), (pp22-27), (pp39-41)
GRADE LEVEL EXPECTATION	**6.1.3.**	Sort and group plants and animals according to similarities in structures or functions of structures. Explain why the plants and animals have been grouped in this manner. • **Plant Growth and Development** • TG: L10 (pp55-60)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.2.**	Enduring Understandings: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	**6.2.1.**	Recognize that plants need light energy from the sun to make food, while animals need to eat plants and/or other animals as their food. • **Ecosystems** • TG: L03 (pp25-38) • TG: L04 (pp39-52) • TG: L07 (pp75-82) • TG: L12 (pp117-124) • **STC Book: Animal Studies:** • (pp09-11) • **STC Book: Ecosystems:** • (pp14-16) • **STC Book: Plant Growth and Development:** • (pp028-30), (pp48-50)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.3.	Enduring Understandings: **Organisms** respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	6.3.1.	Select a living organism and develop descriptions of how the organism responds to a variety of stimuli (i.e., light/dark, warm temperature/cold temperature) based on multiple observations and data collection (e.g., crayfish and Bess Beatles). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Act05 (pp61-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01.Exts (p6) • TG: L02.Exts (pp15-16) • TG: L03-07 (pp21-86) • TG: L09-10 (pp97-114) • TG: L12-15 (pp123-164) • TG: L16.Exts (p167) • **Plant Growth and Development** • TG: L08.Exts (p44) • TG: L11 (pp61-66) • TG: L14.Exts (pp86-87) • **STC Book: Animal Studies:** • (pp22-32), (pp50-52) • **STC Book: Plant Growth and Development:** • (pp14-15), (pp42-45) • **Schoolyard Ecology** • TG: Act02-04 (pp21-49) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	6.3.2.	Explain how individual organisms behave and use their structures to respond to internal and external cues such as hunger, drought, or temperature to improve their chances of survival. • **Animal Studies** • TG: L01-16 (pp3-168) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • **On Sandy Shores** • TG: Act04 (pp59-89) • **STC Book: Animal Studies:** • (pp06-11), (pp16-19), (pp30-32), (pp40-42), (pp45-49) • **STC Book: Ecosystems:** • (pp11-13) • **STC Book: Electric Circuits:** • (pp47-49) • **STC Book: Floating and Sinking** : • (pp57--61) • **STC Book: Motion and Design:** • (pp14-17) • **STC Book: Plant Growth and Development:** • (pp09--29), (pp39-41), (pp44-45), (pp56-61) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)

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CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understandings: **Organisms** reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	Compare the similarities and differences of offspring to their parents (e.g. crayfish, bean sprouts). Know that offspring receive characteristics from both parents. • **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 05-06 (pp 65-79) • TG: Ext 05 (p 71) • TG: Post Assessment (pp 85-91) • TG: Pre Assessment (pp 17-19) • **STC Book: Plant Growth and Development:** • (pp34-36)
GRADE LEVEL EXPECTATION	7.1.2.	Recognize that some characteristics acquired by the parents are not inherited by the offspring (i.e., a lost claw does not mean offspring are born with only one claw). • **Animal Studies** • TG: L11.Exts (p119) • TG: L13.Exts (p138) • **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 06 (pp 75-79) • TG: Ext 05 (p 71) • TG: Ext 06 (p 78) • TG: Post Assessment (pp 85-91) • TG: Pre Assessment (pp 17-19) • **STC Book: Plant Growth and Development:** • (pp34-36)
GRADE LEVEL EXPECTATION	7.1.3.	Construct the life cycle of a bean plant through the use of diagrams. Describe the plant in different stages of its life cycle from seed, to seedling, to mature plant, to death, and explain how the structures of the plant change over time. Recognize that these stages of the life cycle are predictable and describable. • **Ecosystems** • TG: L03.Exts (p29) • TG: L05 (pp53-60) • TG: L06 (pp61-74) • **Plant Growth and Development** • TG: L04-07 (pp25-42) • TG: L10 (pp55-60) • TG: L12 (pp67-70) • TG: L15-17 (pp89-100) • **STC Book: Ecosystems:** • (pp31-34) • **STC Book: Plant Growth and Development:** • (pp28-30), (pp39-41), (pp46-47)
GRADE LEVEL EXPECTATION	7.1.4.	Research the life cycle of an organism. Diagram the life cycle of the organism and describe how the organism changes over time. Compare the life cycle of this organism to the life cycle of various other organisms. Recognize that all organisms go through a life cycle. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Animal Studies** • TG: L04.Exts (pp41-42)

		• TG: L07.Exts (pp79-80) • TG: L09.Exts (pp101-102) • **Ecosystems** • TG: L03.Exts (p29) • TG: L05 (pp53-60) • TG: L06 (pp61-74) • **Plant Growth and Development** • TG: L10 (pp55-60) • TG: L12 (pp67-70) • TG: L15-16 (pp89-98) • **STC Book: Animal Studies:** • (pp06-08), (pp12-15), (pp35-39) • **STC Book: Ecosystems:** • (pp31-34) • **STC Book: Food Chemistry:** • (pp21-23) • **STC Book: Microworlds:** • (pp28-30) • **STC Book: Plant Growth and Development:** • (pp39-41), (pp46-47)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.2.**	Enduring Understandings: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	**7.2.1.**	Describe how similar structures found on different organisms (e.g., eyes, ears, mouths) have similar functions and enable those organisms to survive and reproduce in different environments (e.g., eyes of owls versus eyes of crustaceans). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Exts (pp70-78) • **Animal Studies** • TG: L03-06 (pp21-74) • TG: L08 (pp87-96) • TG: L13.Exts (p138) • TG: L14 (pp143-156) • TG: L15 (pp157-164) • TG: L16.Exts (p167) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 12 (p 83) • **Microscopic Explorations** • TG: Act08-10 (pp81-97) • **Plant Growth and Development** • TG: L08-09 (pp43-54) • TG: L14 (pp79-88) • **STC Book: Animal Studies:** • (pp06-08), (pp16-19) • **STC Book: Electric Circuits:** • (pp11-12), (pp47-49) • STC Book: **Floating and Sinking** : • (pp54--61) • **STC Book: Microworlds:**

		• (pp31-33), (pp40-43), (pp58-61) • **STC Book: Motion and Design:** • (pp07-09) • **STC Book: Plant Growth and Development:** • (pp44-45) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • TG: Act04 (pp43-49) • **Sound** • TG: L04.Exts (pp26-27) • TG: L14.Exts (p98) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	**7.2.2.**	Recognize that there are variations among organisms of the same kind. Observe organisms of the same kind and describe how their physical appearances differ. • **Animal Studies** • TG: L05.Exts (p58) • TG: L08.Exts (p94) • **STC Book: Animal Studies:** • (pp45-49)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.3.**	Enduring Understandings: The development of technology has allowed us to apply our knowledge of genetics, reproduction, development and evolution to meet human wants and needs.
GRADE LEVEL EXPECTATION	**7.3.2.**	Observe seeded and seedless varieties of fruits (i.e., watermelon). Provide reasoning for why seedless fruits have been developed by scientists. • **STC Book: Plant Growth and Development:** • (pp34-36)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.1.**	Enduring Understandings: **Organisms** and their environments are interconnected. **Changes** in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	**8.1.1.**	Predict, investigate and describe how plants can affect water flow, run off and erosion. Relate this knowledge to an ecosystem in Delaware (i.e., planting beach grass to stabilize dunes, planting grass on a slope to decrease soil erosion). • **On Sandy Shores** • TG: Act05 (pp91-108) • **STC Book: Animal Studies:** • (pp40-42) • **STC Book: Ecosystems:** • (pp31-37), (pp45-48), (pp57-59) • **STC Book: Land and Water:** • (pp36-38) • **STC Book: Plant Growth and Development:** • (pp18-19) • (pp53-55)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

Grade 5

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Generate focused questions and informed predictions about the natural world. • **All Units**
GRADE LEVEL EXPECTATION	1.1.2.	Design and conduct simple to multi-step investigations in order to test predictions. Keep constant all but the condition being tested. • **Ant Homes Under the Ground** • TG: Act05 (pp61-70) • **Bubble-ology** • TG: Act06 (pp41-44) • **Building Blocks of Science: Human Bodyworks** • TG: Act 06 (pp 49-53) • TG: Act 11 (pp 77-80) • TG: Ext 06 (p 51) • **Building Blocks of Science: Measure It!** • TG: L03 (pp 23-38) • TG: L04 (pp 39-44) • **Crime Lab Chemistry** • TG: Act03 (pp47-62) • TG: Exts (pp63-64) • **Experiments with Plants** • TG: L01-05 (pp9-56) • TG: L12 (pp91-100) • TG: L14 (pp105-114) • **Land and Water** • TG: L15 (pp163-172) • **Magnets and Motors** • TG: L09 (pp57-66) • TG: L10.Exts (p69) • **Measuring Time** • TG: L07 (pp67-74) • TG: L08 (pp75-86) • TG: L10 (pp95-108) • TG: L12 (pp115-122) • TG: L15 (pp139-144) • **The Technology of Paper** • TG: L03 (pp49-60) • TG: L04 (pp61-74) • TG: L06-08 (pp91-126) • TG: L10-12 (pp137-164) • TG: L14-15 (pp171-196)
GRADE LEVEL EXPECTATION	1.1.3.	Accurately collect data using observations, simple tools and equipment. Display and organize data in tables, charts, diagrams, and bar graphs or plots over time. Compare and question results with and from others. • **All Units**

GRADE LEVEL EXPECTATION	1.1.4.	Construct a reasonable explanation by analyzing evidence from the data. Revise the explanation after comparing results with other sources or after further investigation. • **Animal Studies** • TG: L11.Exts (p119) • **Building Blocks of Science: Human Bodyworks** • TG: Act 03 (pp 31-35) • TG: Act 06 (pp 49-53) • TG: Ext 06 (p 51) • **Building Blocks of Science: Measure It!** • TG: L01-04 (pp 11-44) • **Building Blocks of Science: Understanding Cells and DNA** • TG: Act 04 (pp 51-63) • **Ecosystems** • TG: L08 (pp83-94) • TG: L12 (pp117-124) • **Experiments with Plants** • TG: L01 (pp9-20) • TG: L16 (pp123-128) • **Floating and Sinking** • TG: L02 (pp13-20) • TG: L06.Exts (p52) • TG: L07.Exts (pp57-58) • **Food Chemistry** • TG: L08.Exts (p81) • **GEMS: Electric Circuits** • TG: Ses11 (pp171-175) • **Land and Water** • TG: L01 (pp3-10) • TG: L04 (pp37-50) • TG: L05.Exts (p56) • TG: L07.Exts (p79) • TG: L09 (pp99-108) • TG: L17 (pp183-186) • **Magnets and Motors** • TG: L17 (pp103-108) • **Measuring Time** • TG: L06.Exts (p63) • TG: L11 (pp109-114) • **Microworlds** • TG: L06 (pp31-36) • TG: L10-12 (pp55-70) • TG: L14-16 (pp75-86) • **Space Science for Grades 3-5** • TG: Ses 1.1-1.9 (pp 28-167) • TG: Ses 2.1-2.6 (pp 172-281) • TG: Ses 3.1-3.4 (pp 286-335) • TG: Ses 4.1-4.5 (pp 340-423) • **The Technology of Paper** • TG: L12.Exts (p161)
GRADE LEVEL EXPECTATION	1.1.5.	Communicate procedures, data, and explanations to a variety of audiences. Justify the results by using evidence to form an argument. • **All Units**

GRADE LEVEL EXPECTATION	1.1.6.	Use mathematics, reading, writing, and technology when conducting scientific inquiries. • **All Units**
GRADE LEVEL EXPECTATION	1.1.7.	Separate the components of a mixture by using the physical properties of the components and choosing the appropriate processes (e.g., evaporation, filtering). • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Environmental Detectives** • TG: Act07 (pp185-202)
GRADE LEVEL EXPECTATION	1.1.8.	Make and implement a plan to separate mixtures. Revise the plan based on evidence collected. Record and communicate the results. • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Environmental Detectives** • TG: Act07 (pp185-202)
GRADE LEVEL EXPECTATION	1.1.9.	Combine different amounts of solid material and water. Compare the properties of these solutions (i.e., color, viscosity, clarity). • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Floating and Sinking** • TG: L13 (pp103-112) • TG: L14 (pp113-118) • **Microworlds** • TG: L09.Exts (p53) • **The Technology of Paper** • TG: L04.Exts (pp65-66) • TG: L11 (pp149-156)
GRADE LEVEL EXPECTATION	1.1.11.	Determine the quantities of two different materials (e.g., salt and sugar) required to saturate equal volumes of water and compare the results. Recognize that some materials are more soluble in water than other materials. • **Floating and Sinking** • TG: L13 (pp103-112) • **Land and Water** • TG: L03.Exts (p35)
GRADE LEVEL EXPECTATION	1.1.12.	Explain why the total amount of a material remains the same even when exposed to a variety of physical treatments (e.g., flattening or balling up clay, breaking apart a candy bar, pouring liquid into a tall, slender glass vs. a short, fat glass). • **Bubble-ology** • TG: Act02 (pp11-16)

		• TG: Act03 (pp19-27) • TG: Act05 (pp35-39) • TG: Act06 (pp41-44) • **Ecosystems** • TG: L13.Exts (p127) • **Floating and Sinking** • TG: L06 (pp49-54) • **Microworlds** • TG: L09.Exts (p53)
GRADE LEVEL EXPECTATION	1.1.13.	Design and implement an investigation to show that white light coming from the sun consists of a variety of component waves that appear to have different colors to our eyes. Record observations of the investigation and use evidence to communicate results. • **Bubble Festival** • TG: Act05 (pp80-85) • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act01-04 (pp5-37) • TG: Exts (pp38-40)
GRADE LEVEL EXPECTATION	1.1.14.	Observe that sound is produced by vibrating objects and give examples of vibrating objects that produce sound. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	1.1.15.	Observe that volume is a property of sound that determines how loud the sound is and be able to describe what part of the vibrating object's motion determines the sound it produces. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	1.1.16.	Describe the relationship between the pitch of a sound and the physical properties of the sound source (i.e., length of vibrating object, frequency of vibrations, and tension of vibrating string). Describe how the pitch of sound is different from the volume. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	1.1.17.	Identify that sound energy needs a medium through which to travel. Compare how effectively sound travels through solids, liquids, and air. Demonstrate that vibrations in materials set up wavelike disturbances that spread away from the source. Construct a method to direct sound from the source to the receiver. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	1.1.19.	Use rulers, meter sticks, tapes, and watches to measure the distance objects travel in a given period of time and how much time it takes for an object to travel a certain distance. Organize the measurements in tables, and construct graphs based on the measurements. Reach qualitative conclusions about the speeds of the objects (faster versus slower). • **Land and Water** • TG: L07 (pp75-84) • TG: L13 (pp143-152) • **Motion and Design**

		• TG: L03-09 (pp25-90) • TG: L15-16p139-152)
GRADE LEVEL EXPECTATION	1.1.20.	Demonstrate and explain how forces of different sizes and directions can produce different kinds of changes in the motion of an object. • **Building Blocks of Science: Measure It!** • TG: L03 (pp 23-38) • **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Floating and Sinking** • TG: L09 (pp69-78) • **Motion and Design** • TG: L03-05 (pp25-56) • TG: L07.Exts (pp68-69) • TG: L08-13 (pp73-124) • TG: L15 (pp139-144) • TG: L17 (pp153-156) • **STC Book: Motion and Design:** • (pp23-28) • **Space Science for Grades 3-5** • TG: Ses 1.1 (pp 28-45) • TG: Ses 2.1-2.6 (pp 172-281)
GRADE LEVEL EXPECTATION	1.1.21.	Observe that light travels in a straight line away from its source until it strikes an object. Observe that when light strikes an object, it can reflect off the object, transmit through the object, be absorbed within the object, or a combination of these phenomena. Give examples of light being reflected, transmitted, and/or absorbed by objects. • **Color Analyzers** • TG: Act04 (pp31-37) • **STC Book: Electric Circuits:** • (pp39-41)
GRADE LEVEL EXPECTATION	1.1.22.	Using the physical properties of objects, make predictions about how light will behave when it strikes the object. Categorize materials as transparent, translucent, absorbent or reflective based on how they interact with light. • **Building Blocks of Science: Human Bodyworks** • TG: Act 11 (pp 77-80) • **Color Analyzers** • TG: Act04 (pp31-37) • **Microscopic Explorations** • TG: Act03 (pp49-53) • TG: Act04 (pp55-59) • **Microworlds** • TG: L04 (pp21-24)
GRADE LEVEL EXPECTATION	1.1.23.	Describe how to promote healthy digestion and recognize some symptoms that indicate disturbances associated with the normal functioning of the digestive system (i.e., stomach ache, flatulence). • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 05 (p 46) • **STC Book: Food Chemistry:** • (pp36-38)-40)

GRADE LEVEL EXPECTATION	1.1.24.	Identify, label the parts, and describe the basic functions of the human digestive tract including the mouth, esophagus, stomach, small intestine, large intestine (colon), rectum, and anus. • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 05 (p 46) • **STC Book: Food Chemistry:** • (pp39-40)
GRADE LEVEL EXPECTATION	1.1.25.	Compare and contrast the human body digestive system with that of other animals e.g., earthworm, chicken, fish, crayfish, snail, cow. • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 05 (p 46) • TG: Ext 12 (p 83) • **STC Book: Food Chemistry:** • (pp39-40)
GRADE LEVEL EXPECTATION	1.1.26.	Identify external structures (i.e., legs) and behaviors (i.e., walking) of organisms that enable them to survive in their particular ecosystem and describe how these structures enable the organisms to respond to internal (i.e., hunger) and external (i.e., temperature, danger) cues. • **Animal Studies** • TG: L10 (pp107-114) • **Microworlds** • TG: L13.Exts (p74)
GRADE LEVEL EXPECTATION	1.1.27.	Research the ways that a variety of organisms respond to internal (i.e., need for food and shelter) and external (i.e., presence of predators) cues. Describe the similarities and differences among the organisms. • **Ant Homes Under the Ground** • TG: Act02-03 (pp25-43) • TG: Act05 (pp61-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01.Exts (p6) • TG: L02.Exts (pp15-16) • TG: L03-07 (pp21-86) • TG: L09 (pp97-106) • TG: L10 (pp107-114) • TG: L12-15 (pp123-164) • TG: L16.Exts (p167) • **Experiments with Plants** • TG: L06.Exts (p62) • TG: L14 (pp105-114) • TG: L15 (pp115-122) • **STC Book: Animal Studies:** • (pp22-32), (pp50-52) • **STC Book: Experiments with Plants:** • (pp26-33) • **Schoolyard Ecology** • TG: Act02-04 (pp21-49) • **Terrarium Habitats**

		• TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	1.1.28.	Identify plants and animals in an ecosystem (i.e., beach, woodland, marsh, meadow). Examine the life cycles of the plants and animals and identify factors in the ecosystem that are beneficial or harmful to the organisms at various stages in its life cycle (i.e., young fish are small which makes them able to hide in plants but this characteristic also makes them more vulnerable to predators). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Act05 (pp61-70) • **Animal Studies** • TG: L01-16 (pp3-167) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • **Environmental Detectives** • TG: Act01-07 (pp15-202) • **Experiments with Plants** • TG: L04 (pp39-50) • TG: L07 (pp65-70) • TG: L15.Exts (p117) • **Life Through Time** • TG: Ses02 (pp37-100) • TG: Ses07 (pp235-269) • **Only One Ocean** • TG: Act03 (pp89-144) • **STC Book: Animal Studies:** • (pp06-11), (pp16-19), (pp30-32), (pp40-49) • **STC Book: Ecosystems:** • (pp11-13) • **STC Book: Electric Circuits:** • (pp47-49) • **STC Book: Experiments with Plants:** • (pp07-13), (pp20-21), (pp26-33) • **STC Book: Floating and Sinking** : • (pp51-5-61) • **STC Book: Motion and Design:** • (pp14-17) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
GRADE LEVEL EXPECTATION	1.1.29.	Examine a variety of ecosystems such as marsh, pond, field, forest. Compare how the organisms, the habitat, and the food chains are similar and different in these ecosystems. • **Ant Homes Under the Ground** • TG: Act01-05 (pp13-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L06.Exts (p69) • **Ecosystems** • TG: L03-04 (pp25-52) • TG: L05.Exts (p57) • TG: L06.Exts (pp64-65) • TG: L07 (pp75-82) • **STC Book: Animal Studies:** • (pp09-11), (pp30-32) • **STC Book: Floating and Sinking** :

		• (pp57-59)
GRADE LEVEL EXPECTATION	1.1.30.	Differentiate between an organism's 'habitat' (where an animal lives) and its 'territory' (an area claimed as its own space). Select an organism and describe its habitat and territory. • **Ant Homes Under the Ground** • TG: Act01-05 (pp13-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01-17 (pp3-172) • **Experiments with Plants** • TG: L01 (pp9-20) • **STC Book: Animal Studies:** • (pp09-19), (pp30-32), (pp35-42), (pp50-52) • **STC Book: Ecosystems:** • (pp07-23), (pp26-37), (pp49-51) • **STC Book: Experiments with Plants:** • (pp18-19), (pp24-25) • **STC Book: Floating and Sinking**: • (pp51-53) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • **Terrarium Habitats** • TG: Act01-05 (pp5-48)
GRADE LEVEL EXPECTATION	1.1.31.	Predict and describe how a dramatic increase or decrease in the population size of a single species within an ecosystem affects the entire ecosystem. • **Environmental Detectives** • TG: Act05 (pp113-141)
GRADE LEVEL EXPECTATION	1.1.33.	Conduct investigations to simulate terrestrial and aquatic ecosystems and their interdependence. Demonstrate and describe how alteration of one part of the ecosystem (i.e., change in pH, over fertilization, addition of salt) may cause changes throughout the entire ecosystem. • **Ant Homes Under the Ground** • TG: Act01-05 (pp13-70) • **Ecosystems** • TG: L01-07 (pp3-82) • TG: L12 (pp117-124) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L01 (pp9-20) • TG: L02.Exts (p24) • **Microworlds** • TG: L14-16 (pp75-86) • **STC Book: Ecosystems:** • (pp20-23), (pp26-27) • **STC Book: Experiments with Plants:** • (pp18-19), (pp24-25) • **STC Book: Floating and Sinking**: • (pp43-45) • **STC Book: Food Chemistry:** • (pp58-61) • **Terrarium Habitats**

		• TG: Act01-05 (pp5-48)
GRADE LEVEL EXPECTATION	1.1.34.	Categorize the organisms within an ecosystem according to the function they serve as producers, consumers, or decomposers. Explain why the organism was categorized this way. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Ecosystems** • TG: L03 (pp25-38) • TG: L04 (pp39-52) • TG: L07 (pp75-82) • TG: L12 (pp117-124) • **STC Book: Animal Studies:** • (pp09-11) • **STC Book: Ecosystems:** • (pp14-19) • **Terrarium Habitats** • TG: Act03 (pp23-31)
GRADE LEVEL EXPECTATION	1.1.35.	Identify the Sun as a source of energy that drives an ecosystem. Describe the path of energy from the Sun to the producers then to the consumer in the food chain. Recognize that an organism has dependent and independent relationships in an ecosystem. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Animal Studies** • TG: L01-17 (pp3-172) • **Ecosystems** • TG: L01-07 (pp3-82) • TG: L12 (pp117-124) • TG: L12.Exts (p120) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L06-07 (pp57-70) • **Microworlds** • TG: L12.Exts (pp69-70) • **STC Book: Animal Studies:** • (pp09-11) • **STC Book: Ecosystems:** • (pp11-23), (pp49-51) • **STC Book: Experiments with Plants:** • (pp30-33) • **Schoolyard Ecology** • TG: Act03-04 (pp33-49) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understandings: The development of technology and advancement in science influence each other and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Research and report on recycling of household materials (e.g., glass, newspaper, plastics) and how these materials are reused.

		• **STC Book: The Technology of Paper:** • (pp33-35) • (pp44-46) • **The Technology of Paper** • TG: L06-12 (pp91-164) • TG: L13.Exts (pp167-168) • TG: L18 (pp215-218)
GRADE LEVEL EXPECTATION	1.2.2.	Recognize that solar energy, an inexhaustible source, is an alternative energy source to fossil fuels, an exhaustible source. Using books, computers and other resources, search for ways that we can use sunlight to heat and light our homes, and generate electrical energy. Report your results by making a poster, a written report or an oral presentation. • **Hot Water Warm Homes From Sunlight** • TG: Ses01-05 (pp7-41) • **Investigating Artifacts** • TG: Ses01-06 (pp7-3) • **Land and Water** T • G: L08 (pp85-98)
GRADE LEVEL EXPECTATION	1.2.3.	Identify safety equipment (e.g., goggles, gloves) and procedures (e.g., washing hands, wafting, not eating) used in classroom science investigations. Explain how these promote healthy living and prevent injuries. • **All Units**
GRADE LEVEL EXPECTATION	1.2.4.	Identify natural (i.e., wildfire, flood, drought) and man-made changes (forest clear cutting, input of pollutants, filling in of marshland) to an ecosystem. Discuss how these changes affect the balance of an ecosystem. • **Ecosystems** • TG: L01-07 (pp3-82) • TG: L12 (pp117-124) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L02.Exts (p24) • **Land and Water** • TG: L12 (pp129-142) • **Microworlds** • TG: L14-16 (pp75-86) • **STC Book: Ecosystems:** • (pp20-23), (pp26-27), (pp31-34) • **STC Book: Experiments with Plants:** • (pp24-25) • **STC Book: Floating and Sinking** : • (pp48-50) • **STC Book: Land and Water:** • (pp10-14), (pp36-38) • **STC Book: Microworlds:** • (pp13- 15)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	2.2.	Enduring Understanding: The properties of the mixture are based on the properties of its components.
GRADE LEVEL EXPECTATION	2.2.1.	Separate the components of a mixture by using the physical properties of the components and choosing the appropriate processes (e.g., evaporation, filtering).

		• **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Environmental Detectives** • TG: Act07 (pp185-202)
GRADE LEVEL EXPECTATION	2.2.2.	Make and implement a plan to separate mixtures. Revise the plan based on evidence collected. Record and communicate the results. • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Environmental Detectives** • TG: Act07 (pp185-202)
GRADE LEVEL EXPECTATION	2.2.3.	Combine different amounts of solid material and water. Compare the properties of these solutions, (i.e., color, viscosity, clarity). • **Bubble Festival** • TG: Act01-12 (pp54-124) • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Floating and Sinking** • TG: L13 (pp103-112) • TG: L14 (pp113-118) • **Microworlds** • TG: L09.Exts (p53) • **The Technology of Paper** • TG: L04.Exts (pp65-66)
GRADE LEVEL EXPECTATION	2.2.5.	Determine the quantities of two different materials (e.g., salt and sugar) required to saturate equal volumes of water and compare the results. Recognize that some materials are more soluble in water than other materials. • **Floating and Sinking** • TG: L13 (pp103-112) • **Land and Water** • TG: L03.Exts (p35)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	2.3.	Enduring Understanding: People develop new materials as a response to the needs of society and the pursuit of knowledge. This development may have risks and benefits to humans and the environment.
GRADE LEVEL EXPECTATION	2.3.1.	Research and report on recycling of household materials (e.g., glass, newspaper, plastics) and how these materials are reused. • **STC Book: The Technology of Paper:** • (pp33-35), (pp44-46) • **The Technology of Paper** • TG: L06-12 (pp91-164) • TG: L13.Exts (pp167-168) • TG: L18 (pp215-218)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

CONTENT STANDARD	DE.3.	Energy and Its Effects
PERFORMANCE INDICATOR / GLE	3.1.	Enduring Understandings: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and with energy fields (potential energy).
GRADE LEVEL EXPECTATION	3.1.1.	Identify sunlight as the source of energy needed for plants to make their own food. Observe that sunlight can also warm objects such as the surface of the Earth. • **Hot Water Warm Homes From Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37) • **STC Book: Electric Circuits:** • (pp17-21)
GRADE LEVEL EXPECTATION	3.1.2.	Identify that sunlight has three major components; visible, infrared, and ultraviolet, and that the infrared and ultraviolet components cannot be detected by human eyes. • **Messages From Space** • TG: Act03 (pp46-87) • **Space Science for Grades 3-5** • TG: Ses 1 Post Assessment (pp 1-2) • TG: Ses 1 Pre Assessment (p 1) • TG: Ses 1.4 –1.9(pp 70-167) • TG: Ses 3.1-3.3 (pp 286-323)
GRADE LEVEL EXPECTATION	3.1.3.	Design and implement an investigation to show that white light coming from the sun consists of a variety of component waves that appear to have different colors to our eyes. Record observations of the investigation and use evidence to communicate results. • **Bubble Festival** • TG: Act05 (pp80-85) • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act01-04 (pp5-37) • TG: Exts (pp38-40)
GRADE LEVEL EXPECTATION	3.1.5.	Observe that sound is produced by vibrating objects and give examples of vibrating objects that produce sound. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	3.1.6.	Observe that volume is a property of sound that determines how loud the sound is, and be able to describe what part of the vibrating object's motion determines the sound it produces. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	3.1.7.	Describe the relationship between the pitch of a sound and the physical properties of the sound source (i.e., length of vibrating object, frequency of vibrations, and tension of vibrating string). Describe how the pitch of sound is different from the volume. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)

GRADE LEVEL EXPECTATION	3.1.8.	Identify that sound energy needs a medium through which to travel. Compare how effectively sound travels through solids, liquids, and air. Demonstrate that vibrations in materials set up wavelike disturbances that spread away from the source. Construct a method to direct sound from the source to the receiver. • **Building Blocks of Science: Human Bodyworks** • TG: Act 12 (pp 81-84)
GRADE LEVEL EXPECTATION	3.1.9.	Identify that the energy of a moving object depends upon its speed. Give examples of how an object's energy of motion increases when the object's speed increases. • **Land and Water** • TG: L07 (pp75-84) • TG: L13 (pp143-152) • **Motion and Design** • TG: L03-09 (pp25-90) • TG: L11 (pp101-108) • TG: L12 (pp109-116) • TG: L15 (pp139-144) • TG: L16 (pp145-152)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.2.	Enduring Understandings: **Changes** take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the transfer of the different forms of energy.
GRADE LEVEL EXPECTATION	3.2.1.	Use rulers, meter sticks, tapes, and watches to measure the distance objects travel in a given period of time, and how much time it takes for an object to travel a certain distance. Organize the measurements in tables, and construct graphs based on the measurements. Reach qualitative conclusions about the speeds of the objects (faster versus slower). • **Land and Water** • TG: L07 (pp75-84) • TG: L13 (pp143-152) • **Motion and Design** • TG: L03-05 (pp25-56 • TG: L07-09 (pp65-90) • TG: L15-16 (pp139-152.)
GRADE LEVEL EXPECTATION	3.2.2.	Demonstrate and explain how forces of different sizes and directions can produce different kinds of changes in the motion of an object. • **Building Blocks of Science: Measure It!** • TG: L03 (pp 23-38) • **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Floating and Sinking** • TG: L09 (pp69-78) • **Motion and Design** • TG: L03-05 (pp25-56) • TG: L07.Exts (pp68-69) • TG: L08-13 (pp73-124) • TG: L15 (pp139-144) • TG: L17 (pp153-156) • **STC Book: Motion and Design:** • (pp23-28) • **Space Science for Grades 3-5** • TG: Ses 1.1 (pp 28-45)

		• TG: Ses 2.1-2.6 (pp 172-281)
GRADE LEVEL EXPECTATION	3.2.3.	Explain how the flow of heat energy contributes to the melting and freezing processes. Describe which way heat energy must flow for liquid water to boil. • **Bubble Festival** • TG: Act10 (pp108-113) • **STC Book: Floating and Sinking**: • (pp48-50)
CONTENT STANDARD	DE.3.	Energy and Its Effects
PERFORMANCE INDICATOR / GLE	3.3.	Enduring Understandings: Energy readily transforms from one form to another, but these transformations are not always reversible. The details of these transformations depend upon the initial form of the energy and the properties of the materials involved. Energy may transfer into or out of a system and it may change forms, but the total energy cannot change.
GRADE LEVEL EXPECTATION	3.3.1.	Observe that light travels in a straight line away from its source until it strikes an object. Observe that when light strikes an object, it can reflect off the object, transmit through the object, be absorbed within the object, or a combination of these phenomena. Give examples of light being reflected, transmitted, and/or absorbed by objects. • **Color Analyzers** • TG: Act04 (pp31-37) • **STC Book: Electric Circuits:** • (pp39-41)
GRADE LEVEL EXPECTATION	3.3.2.	Using the physical properties of objects, make predictions about how light will behave when it strikes the object. Categorize materials as transparent, translucent, absorbent or reflective based on how they interact with light. • **Building Blocks of Science: Human Bodyworks** • TG: Act 11 (pp 77-80) • **Color Analyzers** • TG: Act04 (pp31-37) • **Microscopic Explorations** • TG: Act03 (pp49-53) • TG: Act04 (pp55-59) • **Microworlds** • TG: L04 (pp21-24)
CONTENT STANDARD	DE.3.	Energy and Its Effects
PERFORMANCE INDICATOR / GLE	3.4.	Enduring Understandings: People utilize a variety of resources to meet the basic and specific needs of life. Some of these resources cannot be replaced. Other resources can be replenished or exist in such vast quantities they are in no danger of becoming depleted. Often the energy stored in resources must be transformed into more useful forms and transported over great distances before it can be helpful to us.
GRADE LEVEL EXPECTATION	3.4.1	Recognize that solar energy, an inexhaustible source, is an alternative energy source to fossil fuels, an exhaustible source. Using books, computers and other resources, search for ways that we can use sunlight to heat and light our homes, and generate electrical energy. Report your results by making a poster, a written report or an oral presentation. • **Hot Water Warm Homes From Sunlight** • TG: Ses01-05 (pp7-41) • **Investigating Artifacts** • TG: Ses01-06 (pp7-63) • **Land and Water** • TG: L08 (pp85-98)

CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.1.	Enduring Understandings: Living systems demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	6.1.1.	Recognize that the digestive system has many parts that work together to perform a function in humans and many other animals. • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 05 (p 46) • **STC Book: Food Chemistry:** • (pp39-40)
GRADE LEVEL EXPECTATION	6.1.2.	Describe how to promote healthy digestion and recognize some symptoms that indicate disturbances associated with the normal functioning of the digestive system (i.e., stomach ache, flatulence). • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 05 (p 46) • **STC Book: Food Chemistry:** • (pp36-40)
GRADE LEVEL EXPECTATION	6.1.3.	Identify, label the parts, and describe the basic functions of the human digestive tract including the mouth, esophagus, stomach, small intestine, large intestine (colon), rectum, and anus. • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 05 (p 46) • **STC Book: Food Chemistry:** • (pp36-40)
GRADE LEVEL EXPECTATION	6.1.4.	Compare and contrast the human body digestive system with that of other animals e.g., earthworm, chicken, fish, crayfish, snail, cow. • **Building Blocks of Science: Human Bodyworks** • TG: Act 05 (pp 45-47) • TG: Ext 01 (p 21) • TG: Ext 04 (p 41) • TG: Ext 05 (p 46) • TG: Ext 12 (p 83) • **STC Book: Food Chemistry:** • (pp39-40)
CONTENT STANDARD	DE.6.	Life Processes
PERFORMANCE INDICATOR / GLE	6.2.	Enduring Understandings: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	6.2.1.	Explain that all organisms require a form of energy to survive and that humans and other animals obtain energy and materials from food. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Ecosystems** • TG: L03-04 (pp25-52) • TG: L07 (pp75-82)

		• TG: L12 (pp117-124) • **STC Book: Animal Studies:** • (pp09-11) • **STC Book: Ecosystems:** • (pp14-19) • **Terrarium Habitats** • TG: Act03 (pp23-31)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.3.**	Enduring Understandings: **Organisms** respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	**6.3.1.**	Identify external structures (i.e., legs) and behaviors (i.e., walking) of organisms that enable them to survive in their particular ecosystem and describe how these structures enable the organisms to respond to internal (i.e., hunger) and external (i.e., temperature, danger) cues. • **Animal Studies** • TG: L10 (pp107-114) • **Microworlds** • TG: L13.Exts (p74)
GRADE LEVEL EXPECTATION	**6.3.2.**	Research the ways that a variety of organisms respond to internal (i.e., need for food and shelter) and external (i.e., presence of predators) cues. Describe the similarities and differences among the organisms. • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Act05 (pp61-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01.Exts (p6) • TG: L02.Exts (pp15-16) • TG: L03-07 (pp21-86) • TG: L09-10 (pp97-114) • TG: L12-15 (pp123-164) • TG: L16.Exts (p167) • **Experiments with Plants** • TG: L06.Exts (p62) • TG: L14 (pp105-114) • TG: L15 (pp115-122) • **STC Book: Animal Studies:** • (pp22-32), (pp50-52) • **STC Book: Experiments with Plants:** • (pp26--33) • **Schoolyard Ecology** • TG: Act02-04 (pp21-49) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.4.**	Enduring Understandings: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	**6.4.1.**	Identify safety equipment (e.g., goggles, gloves) and procedures (e.g., washing hands, wafting, not eating) used in classroom science investigations. Explain how these promote healthy living and prevent injuries.

		• **All Units**
GRADE LEVEL EXPECTATION	6.4.2.	Identify and discuss how short-term and long-term alterations in the environment affect the health of organisms found in that ecosystem. • **Ecosystems** • TG: L01 -07(pp3-82) • TG: L12 (pp117-124) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L02.Exts (p24) • **Microworlds** • TG: L14-16 (pp75-86) • **STC Book: Ecosystems:** • (pp20--27) • **STC Book: Experiments with Plants:** • (pp24-25)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understandings: **Organisms** reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	Identify plants and animals in an ecosystem (i.e., beach, woodland, marsh, meadow). Examine the life cycles of the plants and animals and identify factors in the ecosystem that are beneficial or harmful to the organisms at various stages in its life cycle (i.e., young fish are small which makes them able to hide in plants, but this characteristic also makes them more vulnerable to predators). • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Act03 (pp35-43) • TG: Act05 (pp61-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01.Exts (p6) • TG: L02.Exts (pp15-16) • TG: L03-07 (pp21-86) • TG: L09-10 (pp97-114) • TG: L12-15 (pp123-164) • TG: L16.Exts (p167) • **Building Blocks of Science: Human Bodyworks** • TG: Ext 01 (p 21) • **Environmental Detectives** • TG: Act01-07 (pp15-202) • **Experiments with Plants** • TG: L04 (pp39-50) • TG: L07 (pp65-70) • TG: L15.Exts (p117) • **Life Through Time** • TG: Ses02 (pp37-100) • TG: Ses07 (pp235-269) • **Only One Ocean** • TG: Act03 (pp89-144) • **STC Book: Animal Studies:** • (pp06-11), (pp16-19), (pp30-32), (pp40-42), (pp45-49) • **STC Book: Ecosystems:**

		• (pp11-13) • **STC Book: Electric Circuits:** • (pp47-49) • **STC Book: Experiments with Plants:** • (pp07-13), (pp20-21), (pp26-33) • **STC Book: Floating and Sinking**: • (pp51--61) • **STC Book: Motion and Design:** • (pp14-17) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.2.**	Enduring Understandings: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	**7.2.1.**	Recognize that there are many different kinds of vertebrates and invertebrates in the world's ecosystem with a diverse variety of organisms in each group. • **Ant Homes Under the Ground** • TG: Act02 (pp25-33) • TG: Exts (pp70-78) • **Animal Studies** • TG: L05-06 (pp49-74) • TG: L08-09 (pp87-106) • **Ecosystems** • TG: L06 (pp61-74) • **Life Through Time** • TG: Ses03 (pp101-138) • **Microworlds** • TG: L14.Exts (p78) • **STC Book: Animal Studies:** • (pp09-11), (pp30-32), (pp38-39), (pp50-52) • **STC Book: Microworlds:** • (pp31-3-36)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.1.**	Enduring Understandings: **Organisms** and their environments are interconnected. **Changes** in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	**8.1.1.**	Examine a variety of ecosystems such as marsh, pond, field, forest. Compare how the organisms, the habitat, and the food chains are similar and different in these ecosystems. • **Ant Homes Under the Ground** • TG: Act01-05 (pp13-70) • **Animal Studies** • TG: L06.Exts (p69) • **Ecosystems** • TG: L03 (pp25-38) • TG: L04 (pp39-52) • TG: L05.Exts (p57) • TG: L06.Exts (pp64-65) • TG: L07 (pp75-82) • **STC Book: Animal Studies:** • (pp09-11), (pp30-32) • **STC Book: Floating and Sinking**:

		• (pp57-59)
GRADE LEVEL EXPECTATION	8.1.2.	Differentiate between an organism's 'habitat' (where an animal lives) and its 'territory' (an area claimed as its own space). Select an organism and describe its habitat and territory. • **Ant Homes Under the Ground** • TG: Act01-05 (pp13-70) • TG: Exts (pp70-78) • **Animal Studies** • TG: L01-17 (pp3-172) • **Experiments with Plants** • TG: L01 (pp9-20) • **STC Book: Animal Studies:** • (pp09-19), (pp30-32), (pp35--42), (pp50-52) • **STC Book: Ecosystems:** • (pp07-23), (pp26-37), (pp45-51) • **STC Book: Experiments with Plants:** • (pp18-19), (pp24-25) • **STC Book: Floating and Sinking** : • (pp51-53) • **Schoolyard Ecology** • TG: Act02 (pp21-31) • **Terrarium Habitats** • TG: Act01-05 (pp5-48)
GRADE LEVEL EXPECTATION	8.1.3.	Predict and describe how a dramatic increase or decrease in the population size of a single species within an ecosystem affects the entire ecosystem. • **Environmental Detectives** • TG: Act05 (pp113-141)
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.2.	Enduring Understandings: Matter needed to sustain life is continually recycled among and between organisms and the environment. Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.
GRADE LEVEL EXPECTATION	8.2.1.	Conduct investigations to simulate terrestrial and aquatic ecosystems and their interdependence. Demonstrate and describe how alteration of one part of the ecosystem (i.e., change in pH, over fertilization, addition of salt) may cause changes throughout the entire ecosystem. • **Ant Homes Under the Ground** • TG: Act01-05 (pp13-70) • **Ecosystems** • TG: L01-07 (pp3-82) • TG: L12 (pp117-124) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L01 (pp9-20) • TG: L02.Exts (p24) • **Microworlds** • TG: L14-16 (pp75-86) • **STC Book: Ecosystems:** • (pp20-23), (pp26-27) • **STC Book: Experiments with Plants:** • (pp18-19), (pp24-25) • **STC Book: Floating and Sinking**: • (pp43-45)

		• **STC Book: Food Chemistry:** • (pp58-61) • **Terrarium Habitats** • TG: Act01-05 (pp5-48)
GRADE LEVEL EXPECTATION	8.2.2.	Categorize the organisms within an ecosystem according to the function they serve as producers, consumers, or decomposers. Explain why the organism was categorized this way. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Ecosystems** • TG: L03 (pp25-38) • TG: L04 (pp39-52) • TG: L07 (pp75-82) • TG: L12 (pp117-124) • **STC Book: Animal Studies:** • (pp09-11) • **STC Book: Ecosystems:** • (pp14-19) • **Terrarium Habitats** • TG: Act03 (pp23-31)
GRADE LEVEL EXPECTATION	8.2.3.	Identify the Sun as a source of energy that drives an ecosystem. Describe the path of energy from the Sun to the producers then to the consumer in the food chain. Recognize that an organism has dependent and independent relationships in an ecosystem. • **Ant Homes Under the Ground** • TG: Act04 (pp45-59) • TG: Act05 (pp61-70) • **Animal Studies** • TG: L01-17 (pp3-172) • **Ecosystems** • TG: L01-07 (pp3-82) • TG: L12 (pp117-124) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L06-07 (pp57-70) • **Microworlds** • TG: L12.Exts (pp69-70) • **STC Book: Animal Studies:** • (pp09-23) • **STC Book: Ecosystems:** • (pp49-51) • **STC Book: Experiments with Plants:** • (pp30-33) • **Schoolyard Ecology** • TG: Act03-04 (pp33-49) • **Terrarium Habitats** • TG: Act03-05 (pp23-48)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	8.3.	Enduring Understandings: Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system.
GRADE LEVEL	8.3.1.	Identify natural (i.e., wildfire, flood, drought) and man-made changes (forest clear cutting, input of pollutants, filling in of marshland) to an ecosystem. Discuss how these changes affect the balance of an

EXPECTATION		ecosystem. • **Ecosystems** • TG: L01-07 (pp3-82) • TG: L12 (pp117-124) • TG: L17 (pp169-171) • **Experiments with Plants** • TG: L02.Exts (p24) • **Land and Water** • TG: L12 (pp129-142) • **Microworlds** • TG: L14-16 (pp75-86) • **STC Book: Ecosystems:** • (pp20-27), (pp31-34) • **STC Book: Experiments with Plants:** • (pp24-25) • **STC Book: Floating and Sinking** : • (pp48-50) • **STC Book: Land and Water:** • (pp10-14), (pp36-38) • **STC Book: Microworlds:** • (pp13- 15)
GRADE LEVEL EXPECTATION	8.3.2.	Explain why moving organisms from their ecosystem to a new ecosystem may upset the balance of the new ecosystem, for example, by introduction of diseases or depletion of resources. • **Environmental Detectives** • TG: Act05 (pp113-141) • **STC Book: Ecosystems:** • (pp28-30)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

Grade 6

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understandings: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Frame and refine questions that can be investigated scientifically, and generate testable hypotheses. • **Bubble Festival** • TG: Act601-12 (pp54-124) • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L04 (pp42-53) • TG: L01 (pp3-16) • TG: L04 (pp45-56) • **Earth in Space** • SG: L01 (pp2-11) • SG: L21 (pp334-339) • TG: L01 (pp3-10) • TG: L03.Exts (p33) • TG: L21 (pp309-310) • **Ecosystems** • TG: L09 (pp95-98) • **Experiments with Plants** • TG: L03 (pp31-38) • TG: L09 (pp75-80) • TG: L13 (pp101-104) • TG: L14 (pp105-114) • **Floating and Sinking** • TG: L17 (pp135-136) • **Food Chemistry** • TG: L04 (pp39-48) • TG: L07 (pp69-78) • TG: L13.Exts (pp120-121) • **Light** • SG: L01 (pp2-19) • TG: L01 (pp3-20) • **Magnets and Motors** • TG: L02.Exts (pp13-14) • **Measuring Time** • TG: L03 (pp31-42) • TG: L05 (pp49-58) • **.** TG: L17 (pp149-150) • **Microworlds** • TG: L01 (pp3-8) • TG: L17 (pp87-88) • **The Technology of Paper** • TG: L13 (pp165-170)
GRADE LEVEL EXPECTATION	1.1.2.	Design and conduct investigations with controlled variables to test hypotheses. • **Aquatic Habitats** • TG: Act05 (pp61-70) • **Bubble-ology** • TG: Act06 (pp41-44) • **Crime Lab Chemistry**

		• TG: Act03 (pp47-62) • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L25 (pp274-282) • TG: L25 (pp347-372) • **Energy, Machines, and Motion** • SG: L07 (pp62-71) • TG: L07 (pp75-84) • **Experiments with Plants** • TG: L01-05 (pp9-56) • TG: L12 (pp91-100) • TG: L14 (pp105-114) • **Human Body Systems** • SG: L08 (pp60-65) • SG: L17 (pp144-147) • **Magnets and Motors** • TG: L09 (pp57-66) • TG: L10.Exts (p69) • **Measuring Time** • TG: L07 (pp67-74) • TG: L08 (pp75-86) • TG: L10 (pp95-108) • TG: L12 (pp115-122) • TG: L15 (pp139-144) • **Organisms-From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L13 (pp112-115) • SG: L15-16 (pp122-139) • SG: L23-24 (pp208-223) • TG: L13 (pp143-152) • TG: L15-16 (pp161-178) • TG: L23-24 (pp275-302) • **River Cutters** • TG: Ses07 (pp67-72) • **The Technology of Paper** • TG: L03-04 (pp49-74) • TG: L06-08 (pp91-126) • TG: L10-12 (pp137-164) • TG: L14-15 (pp171-196)
GRADE LEVEL EXPECTATION	1.1.3.	Accurately collect data through the selection and use of tools and techniques appropriate to the investigation. Construct tables, diagrams and graphs, showing relationships between two variables, to display and facilitate analysis of data. Compare and question results with and from other students. • **All Units**
GRADE LEVEL EXPECTATION	1.1.4.	Form explanations based on accurate and logical analysis of evidence. Revise the explanation using alternative descriptions, predictions, models and knowledge from other sources as well as results of further investigation. • **All Units**
GRADE LEVEL EXPECTATION	1.1.5.	Communicate scientific procedures, data, and explanations to enable the replication of results. Use computer technology to assist in communicating these results. Critical review is important in the analysis

		of these results. • **Crime Lab Chemistry** • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3-372) • **Earth in Space** • SG: L01-05 (pp2-73) • SG: L09-11 (pp122-159) • SG: L14 (pp200-215) • SG: L18 (pp290-311) • SG: L19 (pp312-323) • SG: L22 (pp340-343) • TG: L01-05 (pp3-72) • TG: L08.Exts (pp108-109) • TG: L09-11 (pp121-180) • TG: L13-14 (pp197-220) • TG: L18-19 (pp277-292) • TG: L20.Exts (p297) • TG: L21.Exts (p310) • TG: L22 (pp311-326) • **Ecosystems** • TG: L02-10 (pp13-110) • TG: L12-17 (pp117-171) • **Electrical Energy and Circuit Design** • SG: L03 (pp26-35) • SG: L24 (pp244-251) • TG: L03 (pp37-48) • TG: L08.Exts (p119) • TG: L15.Exts (pp223-224) • TG: L24 (pp313-326) • **Experiments with Plants** • TG: L09-11 (pp75-90) • TG: L15.Exts (p117) • TG: L16 (pp123-128) • **Floating and Sinking** • TG: L01-17 (pp3-136) • **Food Chemistry** • TG: L07 (pp69-78) • TG: L08 (pp79-84) • TG: L13 (pp117-124) • **Human Body Systems** • SG: L09 (pp68-75) • TG: L01.Exts (p7) • TG: L09 (pp103-112) • TG: L12.Exts (pp147-148) • TG: L15.Exts (p178) • TG: L16.Exts (p188) • TG: L22.Exts (p258) • **Light** • SG: L21 (pp230-243) • SG: L26 (pp294-297) • TG: L14.Exts (p175) • TG: L21 (pp295-304) • TG: L26 (pp349-367)

		• **Mystery Festival** • TG: Exts (pp198-199) • **Measuring Time** • TG: L04 (pp43-48) • TG: L06 (pp59-66) • TG: L09 (pp87-94) • TG: L11 (pp109-114) • TG: L14 (pp135-138) • TG: L17 (pp149-150) • **Microworlds** • TG: L01 (pp3-8) • TG: L02 (pp9-14) • **Organisms-From Macro to Micro** • TG: L02 (pp15-32) • **Properties of Matter** • TG: L06.Exts (p74) • **STC Book: Ecosystems:** • (pp07--23), (pp26-37), (pp40-51), (pp54--61)
GRADE LEVEL EXPECTATION	**1.1.6.**	Use mathematics, reading, writing, and technology in conducting scientific inquiries. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.7.**	Relate that electrical energy carried by charges in a circuit is transferred to devices in the circuit and is usually changed into (transformed) different kinds of energy by these devices (e.g., light bulbs change electrical energy into light and heat energy, motors turn the electrical energy into energy of motion). Trace the flow of energy from electrical energy to other forms of energy, such as light. Express whether energy was transferred, transformed or both. • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-19 (pp156-209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-19 (pp213-276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L10 (pp92-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199) • SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02-04 (pp23-46) • TG: L09 (pp99-106) • TG: L10 (pp107-130) • TG: L17 (pp203-216) • TG: L19-22 (pp229-254) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81)

		• SG: L26 (pp294-297) • TG: L02 (pp21-36) • TG: L26 (pp349-367) • **Magnets and Motors** • TG: L16 (pp99-102) • TG: L16.Exts (p102) • **STC Book: Magnets and Motors:** • (pp45-46)
GRADE LEVEL EXPECTATION	**1.1.8.**	Construct both series and parallel circuits to investigate and describe how multiple devices in series or parallel (bulbs, motors) perform (dim versus bright, fast versus slow). Describe how the way the devices are connected affects the functioning (i.e., dim versus bright) of the device and relate this to how much electrical energy is received. • **Electrical Energy and Circuit Design** • SG: L05-08 (pp46-93) • SG: L11 (pp118-121) • SG: L15 (pp156-167) • SG: L19 (pp196-209) • SG: L20 (pp210-213) • TG: L05-08 (pp61-122) • TG: L10.Exts (pp152-153) • TG: L11 (pp157-168) • TG: L12.Exts (pp177-178) • TG: L15 (pp213-226) • TG: L19 (pp263-276) • **Electrical Energy and Circuit Design** • TG: L19.Exts (pp275-276) • TG: L20 (pp277-290) • Energy, Machines, and Motion • SG: L07-09 (pp62-91) • TG: L07-09 (pp75-106) • **GEMS: Electric Circuits** • TG: Ses03-04 (pp73-108) • TG: Ses06-10 (pp121-168) • **Magnets and Motors** • TG: L12-17 (pp77-108) • **STC Book: Magnets and Motors:** • (pp53-54), (pp58-59)
GRADE LEVEL EXPECTATION	**1.1.9.**	Conduct investigations on a moving object and make measurements of time and distance traveled and determine the average speed of moving objects. • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18 (pp217-228) • TG: L18.Exts (p224) • TG: L19 (pp229-234) • TG: L21 (pp239-246) • TG: L21.Exts (p245)

GRADE LEVEL EXPECTATION	1.1.10.	Graph and interpret time versus distance graphs for constant speed. Use the graphs to describe how the position of an object changes in a time interval. • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18 (pp217-228) • TG: L18.Exts (p224) • TG: L19 (pp229-234) • TG: L21 (pp239-246) • TG: L21.Exts (p245)
GRADE LEVEL EXPECTATION	1.1.11.	Describe how the speed of an object depends on the distance traveled and the travel time. Explain how the motion of an object can be described by its position, speed, and direction of motion. • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18 (pp217-228) • TG: L18.Exts (p224) • TG: L19 (pp229-234) • TG: L21 (pp239-246) • TG: L21.Exts (p245)
GRADE LEVEL EXPECTATION	1.1.12.	Give examples of objects at rest, and identify the forces that act on an object while it remains at rest (gravity, supportive forces, friction, other pushing or pulling forces). Explain that if the object is not moving, it must have at least two forces acting on it that are balanced. • **Catastrophic Events** • SG: L12 (pp134-153) • TG: L12 (pp163-176) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-08 (pp36--81) • SG: L11-13 (pp100-129) • SG: L18-19 (pp174-199) • SG: L21 (pp214-225) • TG: L01 (pp3-22) • TG: L05-08 (pp47-98) • TG: L11-13 (pp131-166) • TG: L18-19 (pp217-234) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	1.1.13.	Give examples of moving objects and identify the forces that act on these objects. Select examples where only one force acts on the object and examples where two or more forces act on the object. Explain that

		unbalanced forces acting on an object will change its speed, direction of motion or both. • **Catastrophic Events** • SG: L11 (pp120-133) • SG: L12 (pp134-153) • SG: L15 (pp170-189) • TG: L11 (pp149-162) • TG: L12 (pp163-176) • TG: L15 (pp197-218) • **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-13 (pp36-129) • SG: L15-22 (pp140-236) • TG: L01 (pp3-22) • TG: L05-13 (pp47-166) • TG: L15 (pp177-254) • **Floating and Sinking** • TG: L09 (pp69-78)
GRADE LEVEL EXPECTATION	**1.1.14.**	Conduct investigations to describe how the relative directions of forces simultaneously acting on an object (reinforce or cancel each other) will determine how strongly the combination of these forces influences the motion of the object. • **Catastrophic Events** • SG: L11 (pp120-133) • SG: L12 (pp134-153) • SG: L15 (pp170-189) • TG: L11 (pp149-162) • TG: L12 (pp163-176) • TG: L15 (pp197-218) • **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-13 (pp36-129) • SG: L15-22 (pp140-236) • TG: L01 (pp3-22) • TG: L05-13 (pp47-166) • TG: L15 (pp177-254) • **Floating and Sinking** • TG: L09 (pp69-78)
GRADE LEVEL EXPECTATION	**1.1.15.**	Conduct investigations and describe how a force can be directed to increase the speed of an object, decrease the speed of the object or change the direction in which the object moves. • **Earth in Space** • SG: L15-16 (pp216-268) • **Energy, Machines, and Motion**

		• SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18 (pp217-228) • TG: L18.Exts (p224) • TG: L19 (pp229-234) • TG: L21 (pp239-246) • TG: L21.Exts (p245)
GRADE LEVEL EXPECTATION	1.1.16.	Conduct investigations using simple machines to demonstrate how forces transfer energy. Explain that simple machine may change the direction of an applied force (directional advantage) or the size of the force that is applied (mechanical advantage) but that the amount of energy transferred by the simple machine is equal to the amount of energy transferred to the simple machine. • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L08 (pp72-81) • SG: L11-16 (pp100-161) • SG: L22 (pp226-236) • TG: L01 (pp3-22) • TG: L08 (pp85-98) • TG: L11-17 (pp131-216) • TG: L21.Exts (p245) • TG: L22 (pp247-254)
GRADE LEVEL EXPECTATION	1.1.17.	Explain that the transfer of energy from one object to another is caused by the exertion of a force. Use the size of the force and the distance over which the force acts to compare how much energy is transferred into a simple machine to how much energy is transferred out of a simple machine. • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L08 (pp72-81) • SG: L11-16 (pp100-161) • SG: L22 (pp226-236) • TG: L01 (pp3-22) • TG: L08 (pp85-98) • TG: L11-17 (pp131-216) • TG: L21.Exts (p245) • TG: L22 (pp247-254)
GRADE LEVEL EXPECTATION	1.1.18.	Design a device that relies on the directional and/or mechanical advantage of a simple machine to perform a task (e.g., lift a weight, move a heavy object). Identify the forces and motions involved, the source of the energy used to complete the task, and how the energy is used by the simple machine. • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L08 (pp72-81) • SG: L11-16 (pp100-161) • SG: L22 (pp226-236) • TG: L01 (pp3-22) • TG: L08 (pp85-98) • TG: L11-17 (pp131-216) • TG: L21.Exts (p245)

		• TG: L22 (pp247-254)
GRADE LEVEL EXPECTATION	1.1.19.	Show how electrical energy carried by currents in wires can be used to create magnetic fields. Demonstrate how these fields exert magnetic forces on permanent magnets. Explain how these magnetic forces in electric motors are used to change the electrical energy into the energy of motion. • **Energy, Machines, and Motion** • SG: L07-09 (pp62-91) • TG: L07-09 (pp75-106) • **Magnets and Motors** • TG: L07-17 (pp43-108) • **STC Book: Magnets and Motors:** • (pp28-38), (pp53-54), (pp58--61)
GRADE LEVEL EXPECTATION	1.1.20.	Use appropriate instruments and tools to identify the sedimentary rocks limestone, shale, and sandstone. Infer the environmental conditions in which these rocks formed. • **Catastrophic Events** • TG: L23.Exts (pp325-326) • **Stories in Stone** • TG: Ses05 (pp65-73)
GRADE LEVEL EXPECTATION	1.1.21.	Examine sedimentary rock formations. Use relative dating and fossil evidence to correlate sedimentary rock sequences. Infer the succession of environmental events that occurred from one rock sequence to another (transgression or regression of the seas). • **Earth in Space** • SG: L18 (pp290-311) • TG: L18 (pp277-286) • **Plate Tectonics** • TG: Ses01 (pp21-29) • TG: Ses06 (pp79-91) • **STC Book: Measuring Time:** • (pp18-21)
GRADE LEVEL EXPECTATION	1.1.22.	Use the correlated sedimentary rock sequences to support Earth's geologic time scale. • **Plate Tectonics** • TG: Ses01 (pp21-29) • TG: Ses06 (pp79-91) • **STC Book: Measuring Time:** • (pp18-21)
GRADE LEVEL EXPECTATION	1.1.24.	Investigate how weathered materials are transported (i.e., mass movement and wind, water, and ice processes) in the process of erosion. Explain how erosion shapes rock particles. • **Environmental Detectives** • TG: Act04 (pp91-111) • **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208) • **Human Body Systems** • TG: L13.Exts (p158) • **Invisible Universe** • TG: Act05 (pp78-91) • **River Cutters**

		• TG: Ses02-04 (pp27-54) • TG: Ses06 (pp59-65) • TG: Ses07 (pp67-72) • **STC Book: Experiments with Plants:** • (pp20-21)
GRADE LEVEL EXPECTATION	1.1.25.	Describe the process by which eroded materials can form horizontal layers of sedimentary rock. • **Catastrophic Events** • TG: L23.Exts (pp325-326) • **Environmental Detectives** • TG: Act04 (pp91-111) • **River Cutters** • TG: Ses02 (pp27-34) • TG: Ses06 (pp59-65) • TG: Ses07 (pp67-72) • **Stories in Stone** • TG: Ses05 (pp65-73)
GRADE LEVEL EXPECTATION	1.1.26.	Label and describe the functions of the basic parts of the circulatory system including the heart, arteries, veins and capillaries. • **Human Body Systems** • SG: L14-17 (pp120-147) • TG: L22 (pp182-189) • TG: L01 (pp3-10) • TG: L10 (pp113-130) • TG: L11.Exts (p135) • TG: L12.Exts (pp147-148) • TG: L14-17 (pp159-208) • TG: L22 (pp253-276) • **Organisms-From Macro to Micro** • SG: L16 (pp188-193) • TG: L16 (pp267-280)
GRADE LEVEL EXPECTATION	1.1.28.	Label and describe the functions of the basic parts of the respiratory system including the trachea, bronchi and lungs. • **Human Body Systems** • SG: L10 (pp76-89) • SG: L11 (pp90-97) • SG: L17 (pp144-147) • TG: L01 (pp3-10) • TG: L10 (pp113-130) • TG: L10.Exts (p122) • TG: L11 (pp131-136) • TG: L12.Exts (pp147-148) • TG: L17 (pp191-208)
GRADE LEVEL EXPECTATION	1.1.29.	Label and describe the functions of the basic parts of the digestive tract including the mouth, esophagus, stomach, small intestine, liver, large intestine (colon), rectum and anus. • **Human Body Systems** • SG: L02 (pp8-13) • SG: L04-08 (pp24-65) • TG: L01 (pp3-10)

		• TG: L02 (pp11-18) • TG: L05.Exts (p52) • TG: L07 (pp69-80) • **STC Book: Food Chemistry:** • (pp39-40)
GRADE LEVEL EXPECTATION	**1.1.30.**	Conduct simple investigations (how the body reacts to exercise, changes in temperature, etc.) to determine how the systems in the human organism respond to various external stimuli to maintain stable internal conditions. • **Human Body Systems** • SG: L23 (pp190-195) • TG: L23 (pp261-276) • TG: L23.Exts (p264) • **Organisms-From Macro to Micro** • SG: L17 (pp194-203) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	**1.1.31.**	Recognize that fossils indicate that many organisms that lived long ago are extinct. Use index fossils to determine the relative age of rock sequences, and environmental conditions at the time of formation. Recognize, through fossil evidence, that some species can be traced back in geologic time. • **Earth in Space** • SG: L18 (pp290-311) • TG: L18 (pp277-286) • **Human Body Systems** • TG: L18.Exts (pp215-216) • **Life Through Time** • TG: Ses02-05 (pp37-204) • TG: Ses07 (pp235-269) • **STC Book: Ecosystems:** • (pp20-23) • **STC Book: Measuring Time:** • (pp18-21)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	**1.2.**	Enduring Understanding: The development of technology and advancement in science influence and drive each other forward.
GRADE LEVEL EXPECTATION	**1.2.1.**	Compare the differences in power usage in different electrical devices/appliances. Discuss which devices/appliances (i.e., washer, dryer, refrigerator, electric furnace) are manufactured to require less energy. Select one device/appliance, research different brands and their energy usage, determine which would be the better buy, and report on the findings. • **Food Chemistry** • TG: L15 (pp131-148) • **Paper Towel Testing** • TG: Exts (p25) • TG: Ses01-04 (pp7-24) • **Properties of Matter** • SG: L10 (pp86-97) • SG: L16 (pp130-139) • TG: L10 (pp113-124) • TG: L16 (pp169-178) • **STC Book: Food Chemistry:** • (pp26-30) • **The Technology of Paper**

		• TG: L03 (pp49-60) • TG: L15 (pp185-196) • TG: L17 (pp207-214)
GRADE LEVEL EXPECTATION	1.2.2.	Use knowledge of human body systems to synthesize research data and make informed decisions regarding personal and public health. • **Human Body Systems** • TG: L09.Exts (p107) • TG: L14.Exts (p165) • TG: L19.Exts (p225) • TG: L20.Exts (p239) • **Organisms-From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L04 (pp30-37) • SG: L06 (pp56-63) • **STC Book: Food Chemistry:** • (pp41-43) • **STC Book: Microworlds:** • (pp46-47) • **STC Book: The Technology of Paper:** • (pp10-11)
GRADE LEVEL EXPECTATION	1.2.3.	Research and report on how body systems are affected by lifestyle choices such as diet or exercise (for example lack of exercise leads to cardiovascular disease). • **Earth in Space** • TG: L10.Exts (p152) • **Food Chemistry** • TG: L01 (pp3-10) • TG: L02 (pp11-22) • TG: L04 (pp39-48) • TG: L05 (pp49-56) • TG: L06.Exts (p61) • TG: L08-11 (pp79-106) • TG: L12.Exts (pp112-113) • TG: L13.Exts (pp120-121) • TG: L14-17 (pp125-156) • **Human Body Systems** • SG: L03 (pp14-23) • SG: L13 (pp110-119) • TG: L01 (pp3-10) • TG: L03-05 (pp19-56) • TG: L08.Exts (p85) • TG: L09.Exts (p107) • TG: L13 (pp153-158) • TG: L14.Exts (p165) • TG: L19.Exts (p225) • TG: L20.Exts (p239) • **Organisms-From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L04 (pp30-37)

		• SG: L06 (pp56-63) • **STC Book: Food Chemistry:** • (pp07-33), (pp41-46), (pp49-57) • **STC Book: Microworlds:** • (pp46-47) • **STC Book: The Technology of Paper:** • (pp10-11)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.1.**	Enduring Understanding: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and energy fields (potential energy).
GRADE LEVEL EXPECTATION	**3.1.1.**	List, as basic forms of energy, light, heat, sound, electrical, and energy of motion. • **Bubble Festival** • TG: Act05 (pp80-85) • **Catastrophic Events** • TG: L03.Exts (pp35-36) • **Electrical Energy and Circuit Design** • SG: L01-24 (pp2-251) • TG: L01-24 (pp3-326) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L09-10 (pp82-97) • SG: L20 (pp200-213) • TG: L01-04 (pp3-46) • TG: L09 (pp99-106) • TG: L20-21 (pp235-246) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **Invisible Universe** • TG: Act02 (pp26-38) • **Light** • SG: L01-26 (pp2-297) • TG: L01-26 (pp3-367) • **Magnets and Motors** • TG: L14-17 (pp89-108) • **Properties of Matter** • SG: L20 (pp170-185) • TG: L20 (pp227-240) • **STC Book: Magnets and Motors:** • (pp41-44)
GRADE LEVEL EXPECTATION	**3.1.2.**	Explain that electrical energy is a form of energy that is transferred through circuits to devices that are designed to make use of this form of energy (e.g., lamps, fans, computers, etc.). • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L05-12 (pp46-133) • SG: L14-22 (pp144-231) • SG: L24 (pp244-251) • TG: L01 (pp3-22) • TG: L02.Exts (pp35-36) • TG: L05-12 (pp61-180) • TG: L14-20 (pp205-290)

		• TG: L22 (pp299-304) • TG: L24 (pp313-326) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **Magnets and Motors** • TG: L07 (pp43-48) • .TG: L17 (pp103-108) • **Properties of Matter** • SG: L20 (pp170-185) • SG: L24 (pp218-223) • TG: L24 (pp295-302) • **STC Book: Magnets and Motors:** • (pp33-38) • (pp58-59)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.2.**	Enduring Understanding: Changes take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the different forms of energy.
GRADE LEVEL EXPECTATION	**3.2.1.**	Describe the role of electrical charge in circuits by using a model of electrical circuits. • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L05-12 (pp46-133) • SG: L14-22 (pp144-231) • SG: L24 (pp244-251) • TG: L01 (pp3-22) • TG: L02.Exts (pp35-36) • TG: L05-12 (pp61-180) • TG: L14-20 (pp205-290) • TG: L22 (pp299-304) • TG: L24 (pp313-326) • **GEMS: Electric Circuits** • TG: Ses01-11 (pp13-175) • **Magnets and Motors** • TG: L07 (pp43-48) • TG: L17 (pp103-108) • **Properties of Matter** • SG: L20 (pp170-185) • SG: L24 (pp218-223) • TG: L24 (pp295-302) • **STC Book: Magnets and Motors:** • (pp33-38) • (pp41-44) • (pp58-59)
GRADE LEVEL EXPECTATION	**3.2.2.**	Relate that electrical energy carried by charges in a circuit is transferred to devices in the circuit and is usually changed into (transformed) different kinds of energy by these devices (e.g., light bulbs change electrical energy into light and heat energy, motors turn the electrical energy into energy of motion). Trace the flow of energy from electrical energy to other forms of energy, such as light. Express whether energy was transferred, transformed or both. • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57)

		• SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-19 (pp156-209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-19 (pp213-276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L07-10 (pp62-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199) • SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02-04 (pp23-46) • TG: L07-10 (pp75-130) • TG: L17 (pp203-216) • TG: L19 (pp229-234) • TG: L20-22 (pp235-254) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • SG: L26 (pp294-297) • TG: L02 (pp21-36) • TG: L26 (pp349-367) • **Magnets and Motors** • TG: L12-17 (pp77-108) • **STC Book: Magnets and Motors:** • (pp45-46), (pp53-54), (pp58-59)
GRADE LEVEL EXPECTATION	**3.2.3.**	Construct both series and parallel circuits to investigate and describe how multiple devices in series or parallel (bulbs, motors) perform (dim versus bright, fast versus slow). Describe how the way the devices are connected affects the functioning (i.e., dim versus bright) of the device, and relate this to how much electrical energy is received. • **Electrical Energy and Circuit Design** • SG: L05-08 (pp46-93) • SG: L11 (pp118-121) • SG: L15 (pp156-167) • SG: L19 (pp196-209) • SG: L20 (pp210-213) • TG: L05-08 (pp61-122) • TG: L10.Exts (pp152-153) • TG: L11 (pp157-168) • TG: L12.Exts (pp177-178) • TG: L15 (pp213-226) • TG: L19-20 (pp263-290) • **Energy, Machines, and Motion** • SG: L07-09 (pp62-91) • TG: L07-09 (pp75-106) • **GEMS: Electric Circuits** • TG: Ses03 (pp73-87) • TG: Ses04 (pp89-108) • TG: Ses06-10 (pp121-168) • **Magnets and Motors**

		• TG: L12-17 (pp77-108) • **STC Book: Magnets and Motors:** • (pp53-54), (pp58-59)
GRADE LEVEL EXPECTATION	3.2.4.	Conduct investigations on a moving object and make measurements of time and distance traveled and determine the average speed of moving objects. • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18-19 (pp217-234) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	3.2.5.	Graph and interpret distance versus time graphs for constant speed. Use the graphs to describe how the position of an object changes in a time interval. • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18-19 (pp217-234) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	3.2.6.	Describe how the speed of an object depends on the distance traveled and the travel time. Explain how the motion of an object can be described by its position, speed, and direction of motion. • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18-19 (pp217-234) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	3.2.7.	Explain that the earth will pull on all objects with a force called gravity that is directed inward toward the center of the Earth. • **Earth, Moon, and Stars** • TG: Act02 (pp9-16) • **Earth in Space** • SG: L14-16 (pp200-265) • TG: L14-16 (pp209-268) • **Energy, Machines, and Motion** • TG: L05.Exts (pp53-54)
GRADE LEVEL EXPECTATION	3.2.8.	Give examples of objects at rest, and identify the forces that act on an object while it remains at rest (gravity, supportive forces, friction, other pushing or pulling forces). Explain that if the object is not

		moving, it must have at least two forces acting on it that are balanced. • **Catastrophic Events** • SG: L12 (pp134-153) • TG: L12 (pp163-176) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-08 (pp36-81) • SG: L11-13 (pp100-129) • SG: L18-19 (pp174-199) • SG: L21 (pp214-225) • TG: L01 (pp3-22) • TG: L05-08 (pp47-98) • TG: L11-13 (pp131-166) • TG: L18-19 (pp217-234) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	**3.2.9.**	Give examples of moving objects and identify the forces that act on these objects. Select examples where only one force acts on the object and examples where two or more forces act on the object. Explain that unbalanced forces acting on an object will change its speed, direction of motion, or both. • **Catastrophic Events** • SG: L11 (pp120-133) • SG: L12 (pp134-153) • SG: L15 (pp170-189) • TG: L11 (pp149-162) • TG: L12 (pp163-176) • TG: L15 (pp197-218) • **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-13 (pp36-129) • SG: L15-22 (pp140-236) • TG: L01 (pp3-22) • TG: L05-13 (pp47-166) • TG: L15-22 (pp177-254) • **Floating and Sinking** • TG: L09 (pp69-78)
GRADE LEVEL EXPECTATION	**3.2.10.**	Conduct investigations to describe how the relative directions of forces simultaneously acting on an object (reinforce or cancel each other) will determine how strongly the combination of these forces influences the motion of the object. • **Catastrophic Events** • SG: L11 (pp120-133) • SG: L12 (pp134-153) • SG: L15 (pp170-189) • TG: L11 (pp149-162) • TG: L12 (pp163-176) • TG: L15 (pp197-218)

		• **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-13 (pp36-129) • SG: L15-22 (pp140-236) • TG: L01 (pp3-22) • TG: L05-13 (pp47-166) • TG: L15-22 (pp177-254) • **Floating and Sinking** • TG: L09 (pp69-78)
GRADE LEVEL EXPECTATION	3.2.11.	Conduct investigations and describe how a force can be directed to increase the speed of an object, decrease the speed of the object or change the direction in which the object moves. • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • TG: L16 (pp245-268) • **Energy, Machines, and Motion** • SG: L06 (pp48-61) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01.Exts (p14) • TG: L06.Exts (pp68-69) • TG: L18 (pp217-228) • TG: L19 (pp229-234) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	3.2.12.	Explain that an object that feels the effects of balanced forces may be at rest or may be moving in a straight line with a speed that does not change. • **Catastrophic Events** • SG: L12 (pp134-153) • TG: L12 (pp163-176) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05 –08 (pp36-81) • SG: L11-13 (pp100-129) • SG: L18 (pp174-187) • SG: L19 (pp188-199) • SG: L21 (pp214-225) • TG: L01 (pp3-22) • TG: L05-08 (pp47-98) • TG: L11-13 (pp131-166) • TG: L18-19 (pp217-234) • TG: L21 (pp239-246)

GRADE LEVEL EXPECTATION	3.2.13.	Conduct investigations using simple machines to demonstrate how forces transfer energy. Explain that simple machine may change the direction of an applied force (directional advantage) or the size of the force that is applied (mechanical advantage) but that the amount of energy transferred by the simple machine is equal to the amount of energy transferred to the simple machine. • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L08 (pp72-81) • SG: L11-16 (pp100-161) • SG: L22 (pp226-236) • TG: L01 (pp3-22) • TG: L08 (pp85-98) • TG: L11-17 (pp131-216) • TG: L21.Exts (p245) • TG: L22 (pp247-254)
GRADE LEVEL EXPECTATION	3.2.14.	Explain that the transfer of energy from one object to another is caused by the exertion of a force. • **Catastrophic Events** • SG: L11 (pp120-133) • SG: L12 (pp134-153) • SG: L15 (pp170-189) • TG: L11 (pp149-162) • TG: L12 (pp163-176) • TG: L15 (pp197-218) • **Earth, Moon, and Stars** • TG: Act01 (pp3-8) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L05-13 (pp36-129) • SG: L15-22 (pp140-236) • TG: L01 (pp3-22) • TG: L05-13 (pp47-166) • TG: L15-22 (pp177-254) • **Floating and Sinking** • TG: L09 (pp69-78)
GRADE LEVEL EXPECTATION	3.2.16.	Design a device that relies on the directional and/or mechanical advantage of a simple machine to perform a task (e.g., lift a weight, move a heavy object). Identify the forces and motions involved, the source of the energy used to complete the task, and how the energy is used by the simple machine. • **Energy, Machines, and Motion** • SG: L01 (pp2-11) • SG: L08 (pp72-81) • SG: L11-16 (pp100-161) • SG: L22 (pp226-236) • TG: L01 (pp3-22) • TG: L08 (pp85-98) • TG: L11-17 (pp131-216) • TG: L21.Exts (p245) • TG: L22 (pp247-254)
CONTENT STANDARD	DE.3.	Energy and Its Effects

PERFORMANCE INDICATOR / GLE	3.3.	Enduring Understanding: Energy readily transforms from one form to another, but these transformations are not always reversible. The details of these transformations depend upon the initial form of the energy and the properties of the materials involved. Energy may transfer into or out of a system and it may change forms, but the total energy cannot change.
GRADE LEVEL EXPECTATION	3.3.1.	Show how electrical energy carried by currents in wires can be used to create magnetic fields. Demonstrate how these fields exert magnetic forces on permanent magnets • **Magnets and Motors** • TG: L07-13 (pp43-88) • TG: L15-17 (pp95-108) • **STC Book: Magnets and Motors:** • (pp28--38), (pp60-61)
GRADE LEVEL EXPECTATION	3.3.2.	Explain how these magnetic forces in electric motors are used to change the electrical energy into the energy of motion. • **Energy, Machines, and Motion** • SG: L07-09 (pp62-91) • TG: L07-09 (pp75-106) • **Magnets and Motors** • TG: L12-17 (pp77-108) • **STC Book: Magnets and Motors:** • (pp53-54), (pp58-59)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.4.	Enduring Understanding: People utilize a variety of resources to meet the basic and specific needs of life. Some of these resources cannot be replaced. Other resources can be replenished or exist in such vast quantities they are in no danger of becoming depleted. Often the energy stored in resources must be transformed into more useful forms and transported over great distances before it can be helpful to us.
GRADE LEVEL EXPECTATION	3.4.1.	Compare the differences in power usage in different electrical devices/appliances. Discuss which devices/appliances (i.e., washer, dryer, refrigerator, electric furnace) are manufactured to require less energy. • **Food Chemistry** • TG: L15 (pp131-148) • **Paper Towel Testing** • TG: Exts (p25) • TG: Ses01-04 (pp7-24) • **Properties of Matter** • SG: L10 (pp86-97) • SG: L16 (pp130-139) • TG: L10 (pp113-124) • TG: L16 (pp169-178) • **STC Book: Food Chemistry:** • (pp26-30) • **The Technology of Paper** • TG: L03 (pp49-60) • TG: L15 (pp185-196) • TG: L17 (pp207-214)
GRADE LEVEL EXPECTATION	3.4.2.	Select one device/appliance, research different brands and their energy usage, determine which would be the better buy, and report on the findings. • **Food Chemistry** • TG: L15 (pp131-148) • **Paper Towel Testing**

		• TG: Exts (p25) • TG: Ses01-04 (pp7-24) • **Properties of Matter** • SG: L10 (pp86-97) • SG: L16 (pp130-139) • TG: L10 (pp113-124) • TG: L16 (pp169-178) • **STC Book: Food Chemistry:** • (pp26-30) • **The Technology of Paper** • TG: L03 (pp49-60) • TG: L15 (pp185-196) • TG: L17 (pp207-214)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.1.**	Enduring Understanding: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	**5.1.1.**	Use appropriate instruments and tools to identify the sedimentary rocks: limestone, shale, and sandstone. Infer the environmental conditions in which these rocks formed. • **Catastrophic Events** • TG: L23.Exts (pp325-326) • **Stories in Stone** • TG: Ses05 (pp65-73)
GRADE LEVEL EXPECTATION	**5.1.2.**	Examine sedimentary rock formations. Use relative dating and fossil evidence to correlate sedimentary rock sequences. Infer the succession of environmental events that occurred from one rock sequence to another (transgression or regression of the seas). Use the correlated sedimentary rock sequences to support Earth's geologic time scale. • **Catastrophic Events** • TG: L23.Exts (pp325-326) • **Plate Tectonics** • TG: Ses01 (pp21-29) • TG: Ses06 (pp79-91) • **Stories in Stone** • TG: Ses05 (pp65-73) • **STC Book: Measuring Time:** • (pp18-21)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.2.**	Enduring Understanding: Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.
GRADE LEVEL EXPECTATION	**5.2.2.**	Investigate how weathered materials are transported (i.e., mass movement and wind, water, and ice processes) in the process of erosion. Explain how erosion shapes rock particles. • **Environmental Detectives** • TG: Act04 (pp91-111) • **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208) • **Human Body Systems** • TG: L13.Exts (p158) • **Invisible Universe** • TG: Act05 (pp78-91)

		• **River Cutters** • TG: Ses02-04 (pp27-54) • TG: Ses06-07 (pp59-72) • **STC Book: Experiments with Plants:** • (pp20-21)
GRADE LEVEL EXPECTATION	5.2.3.	Describe the process by which eroded materials can form horizontal layers of sedimentary rock. • **Catastrophic Events** • TG: L23.Exts (pp325-326) • **Environmental Detectives** • TG: Act04 (pp91-111) • **River Cutters** • TG: Ses02 (pp27-34) • TG: Ses06 (pp59-65) • TG: Ses07 (pp67-72) • **Stories in Stone** • TG: Ses05 (pp65-73)
GRADE LEVEL EXPECTATION	5.2.4.	Explain how sedimentary rocks are formed through the processes of weathering, erosion, and deposition. • **Catastrophic Events** • TG: L23.Exts (pp325-326) • **Stories in Stone** • TG: Ses05 (pp65-73)
GRADE LEVEL EXPECTATION	5.2.5.	Cite three lines of evidence such as the fit of coastlines, the similarity of rock type and contiguousness of bedding areas, and similarity of fossilized remains that indicate that the continents were once a large land mass. • **Catastrophic Events** • SG: L15 (pp170-189) • TG: L15 (pp197-218) • TG: L16.Exts (p225) • **Life Through Time** • TG: Ses02 (pp37-100) • TG: Ses03 (pp101-138) • **Plate Tectonics** • TG: Ses01 (pp21-29) • TG: Ses08 (pp113-129)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	6.1.	Enduring Understanding: Living systems, from the organismic to the cellular level, demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	6.1.1.	Explain that human body systems are comprised of organs (e.g., the heart, the stomach, and the lungs) that perform specific functions within one or more systems. • **Human Body Systems** • SG: L01 (pp2-7) • SG: L04-08 (pp24-65) • SG: L10 (pp76-89) • SG: L11 (pp90-97) • SG: L14 (pp120-129) • SG: L16-23 (pp138-195) • TG: L01-23 (pp3-276)

		• **STC Book: Floating and Sinking** : • (pp60-61)
GRADE LEVEL EXPECTATION	6.1.2.	Label and describe the functions of the basic parts of the circulatory system including the heart, arteries, veins and capillaries. • **Human Body Systems** • SG: L14-17 (pp120-147) • SG: L22 (pp182-189) • TG: L01 (pp3-10) • TG: L10 (pp113-130) • TG: L11.Exts (p135) • TG: L12.Exts (pp147-148) • TG: L14 -17(pp159-208) • TG: L22 (pp253-276) • **Organisms-From Macro to Micro** • TG: L16 (pp188-193) • TG: L16 (pp267-280)
GRADE LEVEL EXPECTATION	6.1.4.	Label and describe the functions of the basic parts of the respiratory system including the trachea, bronchi and lungs. • **Human Body Systems** • SG: L10 (pp76-89) • SG: L11 (pp90-97) • SG: L17 (pp144-147) • TG: L01 (pp3-10) • TG: L10 (pp113-130) • TG: L11 (pp131-136) • TG: L12.Exts (pp147-148) • TG: L17 (pp191-208)
GRADE LEVEL EXPECTATION	6.1.5.	Label and describe the functions of the basic parts of the digestive tract including the mouth, esophagus, stomach, small intestine, liver, large intestine (colon), rectum and anus. • **Human Body Systems** • SG: L02 (pp8-13) • SG: L04-08 (pp24-65) • TG: L01 (pp3-10) • TG: L02 (pp11-18) • TG: L05.Exts (p52) • TG: L07 (pp69-80) • **STC Book: Food Chemistry:** • (pp39-40)
GRADE LEVEL EXPECTATION	6.1.6.	Express how the human circulatory, respiratory, and digestive systems work together to carry out life processes. • **Human Body Systems** • SG: L02 (pp8-13) • SG: L04-08 (pp24-65) • SG: L10 (pp76-89) • SG: L11 (pp90-97) • SG: L14-18 (pp120-159) • SG: L22 (pp182-189) • TG: L01 (pp3-10)

		• TG: L02 (pp11-18) • TG: L05.Exts (p52) • TG: L07 (pp69-80) • TG: L10 (pp113-130) • TG: L11 (pp131-136) • TG: L12.Exts (pp147-148) • TG: L14-18 (pp159-218) • TG: L22 (pp253-276) • **STC Book: Food Chemistry:** • (pp39-40)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.2.**	Enduring Understanding: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	**6.2.1.**	Trace how the circulatory, respiratory, and digestive systems interact to transport the food and oxygen required to provide energy for life processes. • **Human Body Systems** • SG: L02 (pp8-13) • SG: L04-08 (pp24-65) • TG: L01 (pp3-10) • TG: L02 (pp11-18) • TG: L05.Exts (p52) • TG: L07 (pp69-80) • **STC Book: Food Chemistry:** • (pp39-40)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.3.**	Enduring Understanding: Organisms respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	**6.3.1.**	Conduct simple investigations (how the body reacts to exercise, changes in temperature, etc.) to determine how the systems in the human organism respond to various external stimuli to maintain stable internal conditions. • **Human Body Systems** • SG: L23 (pp190-195) • TG: L23 (pp261-276) • **Organisms-From Macro to Micro** • SG: L17 (pp194-203) • TG: L17 (pp281-292)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.4.**	Enduring Understanding: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	**6.4.1.**	Use knowledge of human body systems to synthesize research data and make informed decisions regarding personal and public health. • **Human Body Systems** • TG: L09.Exts (p107) • TG: L14.Exts (p165) • TG: L19.Exts (p225) • TG: L20.Exts (p239) • **Organisms-From Macro to Micro**

		• SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L04 (pp30-37) • SG: L06 (pp56-63) • **STC Book: Food Chemistry:** • (pp41-43) • **STC Book: Microworlds:** • (pp46-47) • **STC Book: The Technology of Paper:** • (pp10-11)
GRADE LEVEL EXPECTATION	6.4.2.	Research and report on how body systems are affected by lifestyle choices such as diet or exercise, for example lack of exercise leads to cardiovascular disease. • **Earth in Space** • TG: L10.Exts (p152) • **Food Chemistry** • TG: L01 (pp3-10) • TG: L02 (pp11-22) • TG: L04-05 (pp39-56) • TG: L06.Exts (p61) • TG: L08-11 (pp79-106) • TG: L12.Exts (pp112-113) • TG: L13.Exts (pp120-121) • TG: L14-17 (pp125-156) • **Human Body Systems** • SG: L03 (pp14-23) • SG: L13 (pp110-119) • TG: L01 (pp3-10) • TG: L03-05 (pp19-56) • TG: L08.Exts (p85) • TG: L09.Exts (p107) • TG: L13 (pp153-158) • TG: L14.Exts (p165) • TG: L19.Exts (p225) • TG: L20.Exts (p239) • **Organisms-From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L04 (pp30-37) • SG: L06 (pp56-63) • **STC Book: Food Chemistry:** • (pp07--33), (pp41--46), (pp49-57) • **STC Book: Microworlds:** • (pp46-47) • **STC Book: The Technology of Paper:** • (pp10-11)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understanding: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL	7.2.1.	Recognize that fossils indicate that many organisms that lived long ago are extinct. Use index fossils to

EXPECTATION		determine the relative age of rock sequences, and environmental conditions at the time of formation. • **Earth in Space** • SG: L18 (pp290-311) • TG: L18 (pp277-286) • **Life Through Time** • TG: Ses05 (pp173-204) • TG: Ses07 (pp235-269) • **Light** • SG: L21 (pp230-243) • **STC Book: Ecosystems:** • (pp20-23) • **STC Book: Measuring Time:** • (pp18-21)
GRADE LEVEL EXPECTATION	7.2.2.	Recognize, through fossil evidence, that some species can be traced back in geologic time. • **Earth in Space** • SG: L18 (pp290-311) • TG: L18 (pp277-286) • **Experiments with Plants** • TG: L01.Exts (pp13-14) • **Human Body Systems** • TG: L18.Exts (pp215-216) • **Life Through Time** • TG: Ses01-07 (pp13-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236) • TG: L19.Exts (pp317-318)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

Grade 7

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.1.	Enduring Understanding: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	1.1.1.	Frame and refine questions that can be investigated scientifically, and generate testable hypotheses. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L04 (pp42-53) • TG: L01 (pp3-16) • TG: L04 (pp45-56) • **Earth in Space** • SG: L01 (pp2-11) • SG: L21 (pp334-339) • TG: L01 (pp3-10) • TG: L03.Exts (p33) • TG: L21 (pp309-310) • **Light** • SG: L01 (pp2-19) • TG: L01 (pp3-20)
GRADE LEVEL EXPECTATION	1.1.2.	Design and conduct investigations with controlled variables to test hypotheses. • **Bubble-ology** • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act03 (pp47-62) • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L25 (pp274-282) • TG: L25 (pp347-372) • **Energy, Machines, and Motion** • SG: L07 (pp62-71) • TG: L07 (pp75-84) • **Human Body Systems** • SG: L08 (pp60-65) • SG: L17 (pp144-147) • **Organisms-From Macro to Micro** • SG: L15 (pp180-187) • TG: L15 (pp253-266) • **Properties of Matter** • SG: L13 (pp112-115) • SG: L15-16 (pp122-139) • SG: L23-24 (pp208-223) • TG: L13 (pp143-152) • TG: L15-16 (pp161-178) • TG: L23-24 (pp275-302) • **River Cutters** • TG: Ses07 (pp67-72)
GRADE LEVEL EXPECTATION	1.1.3.	Accurately collect data through the selection and use of tools and techniques appropriate to the investigation. Construct tables, diagrams and graphs, showing relationships between two variables, to display and facilitate analysis of data. Compare and question results with and from other students.

		• **All Units**
GRADE LEVEL EXPECTATION	**1.1.4.**	Form explanations based on accurate and logical analysis of evidence. Revise the explanation using alternative descriptions, predictions, models and knowledge from other sources as well as results of further investigation. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.5.**	Communicate scientific procedures, data, and explanations to enable the replication of results. Use computer technology to assist in communicating these results. Critical review is important in the analysis of these results. • **Crime Lab Chemistry** • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01--25 (pp3-372) • **Earth in Space** • SG: L01 (pp2-11) • SG: L03-05 (pp22-73) • SG: L09-11 (pp122-159) • SG: L14 (pp200-215) • SG: L18 (pp290-311) • SG: L19 (pp312-323) • SG: L22 (pp340-343) • TG: L01 (pp3-10) • TG: L03-05 (pp21-72) • TG: L08.Exts (pp108-109) • TG: L09-11 (pp121-180) • TG: L13 (pp197-208) • **Earth in Space** • TG: L14 (pp209-220) • TG: L18 (pp277-286) • TG: L19 (pp287-292) • TG: L20.Exts (p297) • TG: L21.Exts (p310) • TG: L22 (pp311-326) • **Electrical Energy and Circuit Design** • SG: L03 (pp26-35) • SG: L24 (pp244-251) • TG: L03 (pp37-48) • TG: L08.Exts (p119) • TG: L15.Exts (pp223-224) • TG: L24 (pp313-326) • **Human Body Systems** • SG: L09 (pp68-75) • TG: L01.Exts (p7) • TG: L09 (pp103-112) • TG: L12.Exts (pp147-148) • TG: L15.Exts (p178) • TG: L16.Exts (p188) • TG: L22.Exts (p258) • **Light** • SG: L21 (pp230-243) • SG: L26 (pp294-297) • TG: L14.Exts (p175)

		• TG: L21 (pp295-304) • TG: L26 (pp349-367) • **Mystery Festival** • TG: Exts (pp198-199) • **Organisms-From Macro to Micro** • TG: L02 (pp15-32) • **Properties of Matter** • TG: L06.Exts (p74)
GRADE LEVEL EXPECTATION	**1.1.6.**	Use mathematics, reading, writing, and technology in conducting scientific inquiries. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.7.**	Recognize that all matter consists of particles and how the particles are arranged determines the physical state. Use the particle model to describe solids, liquids, and gases in terms of the packing and motion of particles. • **Bubble-ology** • TG: Act02-06 (pp11-44) • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • **Catastrophic Events** • SG: L20 (pp224-231) • TG: L20 (pp279-292) • **Properties of Matter** • SG: L04 (pp30-37) • SG: L05 (pp38-55) • SG: L20 (pp170-185) • TG: L02.Exts (p21) • TG: L03.Exts (p32) • TG: L04 (pp39-48) • TG: L05 (pp49-64) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166) • TG: L20 (pp227-240)
GRADE LEVEL EXPECTATION	**1.1.8.**	Measure and record the temperature of ice water as it is heated. Plot the graph of measurements taken and interpret the change of phase graph using the particle model, identifying the states of matter. • **Bubble-ology** • TG: Act03 (pp19-27) • TG: Act04 (pp29-32) • **Catastrophic Events** • SG: L04 (pp42-53) • SG: L06 (pp68-79) • SG: L19 (pp210-223) • TG: L04 (pp45-56) • TG: L06 (pp69-82) • TG: L19 (pp265-278) • TG: L20.Exts (p287) • **Properties of Matter** • SG: L06-08 (pp56-77) • SG: L20 (pp170-185)

		• SG: L25 (pp224-229) • TG: L06-08 (pp65-100) • TG: L20 (pp227-240) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	1.1.9.	Analyze a standard change of phase graph of water. Using the particle model, identify where water is a solid, liquid or gas, is freezing/melting or evaporating/condensing. Relate the states of matter to the changes (increase, decrease) of energy in the system. • **Catastrophic Events** • SG: L03-06 (pp26-79) • SG: L19-22 (pp210-251) • TG: L03-06 (pp27-82) • TG: L19-22 (pp265-316) • **Light** • TG: L10.Exts (p124) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • SG: L25 (pp224-229) • TG: L02.Exts (p21) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L12.Exts (p140) • TG: L13 (pp143-152) • TG: L14.Exts (p157) • TG: L15.Exts (p166) • TG: L18 (pp193-208) • TG: L22.Exts (p270) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	1.1.10.	Make a model or drawing of particles of the same material in solid, liquid, and gas state. Describe the arrangement, spacing and energy in each state. • **Properties of Matter** • TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	1.1.11.	Calculate the density of various solid materials. Use density to predict whether an object will sink or float in water. Given the density of various solids and liquids, create a density column and explain the arrangement in terms of density. • **Catastrophic Events** • SG: L04 (pp42-53) • TG: L04 (pp45-56) • **Discovering Density** • TG: Exts (p48) • TG: Ses01-05 (pp5-46) • **Ocean Currents** • TG: Act03-05 (pp47-93) • **Properties of Matter** • SG: L01-03 (pp2-29)

		• SG: L05 (pp38-55) • SG: L09 (pp78-83) • SG: L19 (pp162-167) • SG: L26 (pp230-235) • TG: L01-03 (pp3-38) • TG: L04.Exts (p45) • TG: L05 (pp49-64) • TG: L09 (pp101-112) • TG: L19 (pp209-226) • TG: L26 (pp313-332)
GRADE LEVEL EXPECTATION	1.1.12.	Use physical properties to distinguish and separate one substance or material from another. • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Environmental Detectives** • TG: Act07 (pp185-202) • **Properties of Matter** • SG: L15 (pp122-129) • SG: L17 (pp140-149) • TG: L15 (pp161-168) • TG: L17 (pp179-192)
GRADE LEVEL EXPECTATION	1.1.13.	Distinguish between homogeneous and heterogeneous mixtures. Using their physical properties, design and conduct an investigation to separate the components of a homogeneous or heterogeneous mixture. Recognize that a homogeneous mixture is a solution. • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L22 (pp240-251) • TG: L22 (pp303-316) • **Environmental Detectives** • TG: Act07 (pp185-202) • **Properties of Matter** • SG: L01 (pp2-13) • SG: L11-15 (pp98-129) • SG: L17-19 (pp140-167) • TG: L01 (pp3-14) • TG: L11-15 (pp125-168) • TG: L16.Exts (p178) • TG: L17-19 (pp179-226) • TG: L22.Exts (p270)
GRADE LEVEL EXPECTATION	1.1.14.	Prepare solutions of different concentrations recognizing that the properties of the solution (color, density, boiling point) depend on the nature and concentration of the solute and solvent. • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry**

		• TG: Act03 (pp47-62) • **Catastrophic Events** • SG: L22 (pp240-251) • TG: L22 (pp303-316) • **Properties of Matter** • SG: L11-18 (pp98-161) • TG: L11-18 (pp125-208)
GRADE LEVEL EXPECTATION	1.1.16.	Conduct investigations to determine the effect of temperature on saturation point. Construct a solubility curve based on data collected. Describe solubility and saturation point using the particle model. • **Organisms-From Macro to Micro** • TG: L06.Exts (pp89-91) • **Properties of Matter** • SG: L01 (pp2-13) • SG: L12 (pp106-111) • SG: L13 (pp112-115) • SG: L15-19 (pp122-167) • TG: L01 (pp3-14) • TG: L12 (pp135-142) • TG: L13 (pp143-152) • TG: L15-19 (pp161-226)
GRADE LEVEL EXPECTATION	1.1.17.	Conduct investigations to demonstrate the process of diffusion. Use the particle model to describe the movement of materials from an area of higher concentration to an area of lower concentration. • **Human Body Systems** • SG: L06 (pp40-49) • TG: L06 (pp57-68) • **Organisms-From Macro to Micro** • SG: L10 (pp120-131) • TG: L10 (pp167-184)
GRADE LEVEL EXPECTATION	1.1.18.	Show that mass is conserved when adding a solute to a solvent (mass of solvent + mass of solute = total mass of solution). • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act02 (pp29-45) • TG: Act03 (pp47-62) • **Catastrophic Events** • SG: L22 (pp240-251) • TG: L22 (pp303-316) • **Properties of Matter** • SG: L08 (pp74-77) • SG: L11-18 (pp98-161) • SG: L25 (pp224-229) • TG: L08 (pp91-100) • TG: L11-18 (pp125-208) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	1.1.19.	Describe how heat energy when added to a substance, will increase its temperature or change its state. Explain that as more heat energy is added to a substance, the particles' vibrations increase and the spacing

		between the particles increases, but the size of the particles stays the same. • **Catastrophic Events** • SG: L03-05 (pp26-67) • SG: L20-22 (pp224-251) • TG: L03-05 (pp27-68) • TG: L20-22 (pp279-316) • **Light** • TG: L10.Exts (p124) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • SG: L25 (pp224-229) • TG: L02.Exts (p21) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L12.Exts (p140) • TG: L13 (pp143-152) • TG: L14.Exts (p157) • TG: L15.Exts (p166) • TG: L18 (pp193-208) • TG: L18.Exts (p201) • TG: L22.Exts (p270) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	1.1.20.	Create models that simulate the amount of salt, frozen, fresh, and potable water available on Earth's surface. Compare total water supply on Earth to the amount of potable water available for human use. • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	1.1.21.	Calculate the ratio/percent of water generally found in solid, liquid and gaseous form on or within the Earth's surface and use this ratio to compare the amounts of water stored in different states. • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	1.1.22.	Use diagrams of the hydrologic cycle to show and describe the circulation of water through the Earth's crust, oceans, and atmosphere. • **Catastrophic Events** • SG: L06 (pp68-79) • TG: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13)
GRADE LEVEL EXPECTATION	1.1.23.	Use the particle model to describe solids, liquids, and gases in terms of the packing, motion of particles, and energy gain or loss. Apply this to the processes of evaporation, condensation, and precipitation in the water cycle. Explain how heat energy drives the water cycle. • **Catastrophic Events** • SG: L06 (pp68-79) • TG: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13)

		• TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	1.1.24.	Use models or diagrams to explain how water stored underground (groundwater and aquifers) and water stored above ground (lakes, rivers, air, etc…) interact to form a continuous cycle. • **Catastrophic Events** • SG: L06 (pp68-79) • TG: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13)
GRADE LEVEL EXPECTATION	1.1.25.	Investigate, through the use of models, how water acts as a solvent and as it passes through the water cycle it dissolves minerals, gases, and pollutants and carries them to surface water and ground water supplies. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15-208) • **Ocean Currents** • TG: Act02 (pp29-45) • **River Cutters** • TG: Exts (p73) • TG: Ses05 (pp55-57)
GRADE LEVEL EXPECTATION	1.1.26.	Conduct investigations and use the data to describe the extent to which the permeability and porosity of a soil sample affect the rate of water percolation. • **Catastrophic Events** • SG: L17 (pp194-197) • TG: L17 (pp233-256) • **Microscopic Explorations** • TG: Act06 (pp69-73)
GRADE LEVEL EXPECTATION	1.1.27.	Use topographic maps to locate Delaware watersheds and to identify the bodies of water into which they drain. Analyze and describe the relationship between elevation of land and the flow rate of water in a watershed. • **River Cutters** • TG: Ses01 (pp21-25) • TG: Ses02 (pp27-34)
GRADE LEVEL EXPECTATION	1.1.28.	Conduct tests including temperature, pH, salinity, dissolved oxygen, turbidity, nitrate, and phosphate to determine the potability of local water samples. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15-208) • **Organisms-From Macro to Micro** • TG: L18.Exts (pp299-300)

		• **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	1.1.29.	Identify macro-invertebrates in a local stream and apply this identification in determining the stream's ecological health. • **Only One Ocean** • TG: Act02 (pp43-87) • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L16 (pp188-193) • TG: L03 (pp33-48)
GRADE LEVEL EXPECTATION	1.1.30.	Identify and apply criteria for determining whether specimens or samples are living, dead, dormant or nonliving. • **Organisms-From Macro to Micro** • TG: L01.Exts (p12)
GRADE LEVEL EXPECTATION	1.1.31.	Classify organisms based on shared characteristics into currently recognized kingdoms and justify their placement. Give examples of organisms from each kingdom. • **Life Through Time** • TG: Ses0-06 (pp13-234) • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L04 (pp38-45) • SG: L05 (pp46-63) • SG: L07 (pp82-93) • SG: L11 (pp132-145) • SG: L14-16 (pp172-193) • SG: L20 (pp236-243) • TG: L05 (pp57-72) • TG: L06.Exts (pp89-91) • TG: L07 (pp105-130) • TG: L10.Exts (pp175-176) • TG: L11 (pp185-200) • TG: L14 -16(pp237-280) • TG: L20 (pp331-350)
GRADE LEVEL EXPECTATION	1.1.32.	Observe and sketch cells using microscopes and other appropriate tools. Compare and contrast plant, animal, protist, and bacterial cells by noting the presence or absence of major organelles (i.e., cell membrane, cell wall, nucleus, chloroplasts, mitochondria and vacuoles) using the sketches and other resources. Research external conditions needed by a variety of organisms for survival such as temperature, turbidity, pH, salinity, and amount of dissolved oxygen, phosphates, and nitrates. Predict how organisms may respond to changes in these external conditions based on research findings. • **Human Body Systems** • SG: L09 (pp68-75) • SG: L22 (pp182-189) • TG: L22 (pp253-276) • **Organisms-From Macro to Micro** • SG: L07-08 (pp82-105) • TG: L07-08 (pp105-150)
GRADE LEVEL EXPECTATION	1.1.33.	Recognize that reproduction is a process that occurs in all living systems and is essential to the continuation of the species. Use models or diagrams to identify the structures of a flowering plant that

		produce eggs and sperm and explain that plants as well as animals can reproduce sexually. • **Chemical Reactions** • TG: Part1 (pp9-14) • TG: Part2 (pp15-21) • **Earth in Space** • TG: L07.Exts (pp92-93) • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L05 (pp46-63) • SG: L09 (pp106-119) • SG: L10 (pp120-131) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L05 (pp57-72) • TG: L09 (pp151-166) • TG: L10 (pp167-184) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292) • TG: L18 (pp293-302) • TG: L18.Exts (pp299-300)
GRADE LEVEL EXPECTATION	**1.1.34.**	Given varied scenarios (including one or two parent reproduction, and having traits identical to or different than the parents), classify offspring as either sexually or asexually produced and justify your response. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L09 (pp151-166) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	**1.1.35.**	Compare and contrast asexual and sexual reproduction in terms of potential variation and adaptation to a static or changing environment. Relate advantages and/or disadvantages of each strategy. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L09 (pp151-166) • TG: L12 (pp201-218)

		• TG: L14 (pp237-252) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	1.1.36.	Make a simple labeled drawing of human reproductive cells. Indicate that the sex cells (sperm and egg) each have half of the chromosomal number (23) as a fertilized egg (46). The fertilized egg has the same number of chromosomes as each of the body cells of the new organism. Recognize that different organisms may have different numbers of chromosomes and that the number of chromosomes does not relate to the complexity of the organism. • **Organisms-From Macro to Micro** • SG: L08 (pp96-105) • SG: L19 (pp216-235) • TG: L08 (pp131-150) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	1.1.37.	Make a simple labeled drawing of asexual reproduction as it occurs in sexually produced organisms at the cellular level. Indicate that resulting cells contain an identical copy of genetic information from the parent cell. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L08 (pp96-105) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L08 (pp131-150) • TG: L09 (pp151-166) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	1.1.38.	Describe the relationship between genes, chromosomes, and DNA in terms of location and relative size. • **Organisms-From Macro to Micro** • SG: L08 (pp96-105) • SG: L19 (pp216-235) • TG: L08 (pp131-150) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	1.1.39.	Use single trait Punnett squares to examine the genotypes of individuals and indicate which individuals will express dominant or recessive traits. Justify the indication by relating that dominant alleles appearing heterozygously or homozygously are expressed or that two recessive alleles (homozygous) are required for an offspring to express a recessive trait phenotypically. • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L19 (pp216-235) • TG: L01 (pp3-14) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	1.1.41.	Research and report on the contributions of Gregor Mendel and other genetic researchers and how their contributions altered the body of scientific knowledge. • **Organisms-From Macro to Micro**

		• SG: L19 (pp216-235) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	1.1.42.	Identify 'kingdom' as the first main level of the standard classification system. Observe a variety of living organisms and determine into which kingdom they would be classified. • **Life Through Time** • TG: Ses01-06 (pp13-234) • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L06 (pp64-81) • SG: L11 (pp132-145) • SG: L20 (pp236-243) • TG: L01 (pp3-14) • TG: L06 (pp73-104) • TG: L11 (pp185-200) • TG: L20 (pp331-350)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understanding: The development of technology and advancement in science influence and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Select a manufactured item and identify its component materials. Explain how the physical properties of the materials contribute to the function of the item. • **Earth in Space** • TG: L20.Exts (p297) • **Properties of Matter** • SG: L10 (pp86-97) • TG: L10 (pp113-124)
GRADE LEVEL EXPECTATION	1.2.2.	Discuss the social, economic, and/or environmental consequences of the production of new materials to meet human wants and needs. • **Catastrophic Events** • SG: L09 (pp102-112) • TG: L09 (pp127-142) • **Earth in Space** • SG: L20 (pp324-333) • SG: L21 (pp334-339) • TG: L20 (pp293-308) • TG: L21 (pp309-310) • **Energy, Machines, and Motion** • SG: L04 (pp26-35) • **Plate Tectonics** • TG: Ses01 (pp21-29) • **Properties of Matter** • SG: L18 (pp150-161) • TG: L03.Exts (p32) • TG: L21.Exts (p251) • **River Cutters** • TG: Ses05 (pp55-57) • **Stories in Stone** • TG: Ses07 (pp83-101)
GRADE LEVEL	1.2.3.	Research and report on the processes used by municipalities to ensure water taken from local reservoirs is

EXPECTATION		safe to return to the environment. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15-208) • **Organisms-From Macro to Micro** • TG: L14.Exts (p247) • TG: L18.Exts (pp299-300) • **Properties of Matter** • TG: L15.Exts (p166) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	1.2.5.	List ways in which human intervention can help maintain an adequate supply of fresh water for human consumption. Apply knowledge and skills learned about water as a resource to study local sources of drinking water and devise a water quality stewardship plan. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15-208) • **Organisms-From Macro to Micro** • TG: L14.Exts (p247) • TG: L18.Exts (pp299-300) • **Properties of Matter** • TG: L15.Exts (p166) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	1.2.6.	Use various indicators (pH, turbidity, nitrates, phosphates, salinity, and macro-invertebrate surveys) to establish the health and potential potability of local bodies of water. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15-208) • **Organisms-From Macro to Micro** • TG: L14.Exts (p247) • TG: L18.Exts (pp299-300) • **Properties of Matter** • TG: L15.Exts (p166) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	1.2.7.	Research and report on selective breeding. Select an organism (e.g., race horses, pedigree dogs, drought resistant plants) and trace its history of development and the traits of the plant or animal that were enhanced by selective breeding. • **Organisms-From Macro to Micro** • SG: L05 (pp46-63) • TG: L19.Exts (pp317-318)
GRADE LEVEL EXPECTATION	1.2.9.	Explain how sanitation measures such as sewers, landfills, and water treatment are important in controlling the spread of organisms that contaminate water and cause disease. • **Organisms-From Macro to Micro**

		• TG: L14.Exts (p247) • **Properties of Matter** • TG: L15.Exts (p166)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	**1.3.**	Enduring Understanding: Understanding past processes and contributions is essential in building scientific knowledge.
GRADE LEVEL EXPECTATION	**1.3.1.**	Research the sequence of events that led to the formation of the cell theory and correlate these events with technological advancements (e.g., hand lens, microscopes, and staining techniques). • **Microscopic Explorations** • TG: Act03-10 (pp49-97) • TG: Exts (p102) • **Organisms-From Macro to Micro** • SG: L02 (pp12-27) • SG: L04 (pp38-45) • SG: L07 (pp82-93) • SG: L12 (pp146-155) • SG: L16 (pp188-193) • TG: L02 (pp15-32) • TG: L04 (pp49-56) • TG: L07 (pp105-130) • TG: L11 (pp185-200) • TG: L12 (pp201-218) • TG: L14.Exts (p247) • TG: L16 (pp267-280)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	**2.1.**	Enduring Understanding: The structures of materials determine their properties.
GRADE LEVEL EXPECTATION	**2.1.1.**	Recognize that all matter consists of particles and how the particles are arranged determines the physical state. Use the particle model to describe solids, liquids, and gases in terms of the packing and motion of particles. • **Bubble-ology** • TG: Act02-06 (pp11-44) • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • **Catastrophic Events** • SG: L20 (pp224-231) • TG: L20 (pp279-292) • **Properties of Matter** • SG: L04 (pp30-37) • SG: L05 (pp38-55) • SG: L20 (pp170-185) • TG: L02.Exts (p21) • TG: L03.Exts (p32) • TG: L04 (pp39-48) • TG: L05 (pp49-64) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)

		• TG: L20 (pp227-240)
GRADE LEVEL EXPECTATION	2.1.2.	Measure and record the temperature of ice water as it is heated. Plot the graph of measurements taken and interpret the change of phase graph using the particle model, identifying the states of matter. • **Bubble-ology** • TG: Act03 (pp19-27) • TG: Act04 (pp29-32) • **Catastrophic Events** • SG: L04 (pp42-53) • SG: L06 (pp68-79) • SG: L19 (pp210-223) • TG: L04 (pp45-56) • TG: L06 (pp69-82) • TG: L19 (pp265-278) • TG: L20.Exts (p287) • **Properties of Matter** • SG: L06-08 (pp56-77) • SG: L20 (pp170-185) • SG: L25 (pp224-229) • TG: L06-08 (pp65-100) • TG: L20 (pp227-240) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	2.1.3.	Analyze a standard change of phase graph of water. Using the particle model, identify where water is a solid, liquid or gas, is freezing/melting or evaporating/condensing. Relate the states of matter to the changes (increase, decrease) of energy in the system. • **Catastrophic Events** • SG: L03-06 (pp26-79) • SG: L19-22 (pp210-251) • TG: L03-06 (pp27-82) • TG: L19-22 (pp265-316) • **Light** • TG: L10.Exts (p124) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • SG: L25 (pp224-229) • TG: L02.Exts (p21) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L12.Exts (p140) • TG: L13 (pp143-152) • TG: L14.Exts (p157) • TG: L15.Exts (p166) • TG: L18 (pp193-208) • TG: L22.Exts (p270) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	2.1.4.	Make a model or drawing of particles of the same material in solid, liquid, and gas state. Describe the arrangement, spacing and energy in each state. • **Properties of Matter** • TG: L02.Exts (p21)

		• TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	2.1.5.	Distinguish between physical properties that are dependent upon mass (size, shape) and those physical properties such as boiling point, melting point, solubility, density, conduction of heat and pH of a substance or material that are not altered when the mass of the material is changed. • **Acid Rain** • TG: Ses02 (pp20-38) • **Bubble-ology** • TG: Act02-03 (pp11-27) • TG: Act05-06 (pp35-44) • **Chemical Reactions** • TG: Part1 (pp9-14) • SG: L04 (pp42-53) • TG: L04 (pp45-56) • TG: Exts (p48) • **Discovering Density** • TG: Ses01-05 (pp5-46) • **Environmental Detectives** • TG: Act03 (pp53-89) • **Earth in Space** • SG: L15 (pp216-243) • TG: L15 (pp221-244) • **Energy, Machines, and Motion** • SG: L05 (pp36-47) • TG: L05 (pp47-58) • TG: L07.Exts (p83) • TG: L18.Exts (p224) • TG: L21.Exts (p245) • **Ocean Currents** • TG: Act0-05 (pp47-93) • **Of Cabbages and Chemistry** • TG: Ses01-04 (pp9-46) • **Organisms-From Macro to Micro** • TG: L10.Exts (pp175-176) • **Properties of Matter** • SG: L01 –05 (pp2-55) • SG: L08-09 (pp74-83) • SG: L12-19 (pp106-167) • SG: L25 (pp224-229) • SG: L26 (pp230-235) • TG: L01-05 (pp3-64) • TG: L08-09 (pp91-112) • TG: L12-19 (pp135-226) • TG: L25 (pp303-312) • TG: L26 (pp313-332)
GRADE LEVEL EXPECTATION	2.1.6.	Calculate the density of various solid materials. Use density to predict whether an object will sink or float in water. Given the density of various solids and liquids, create a density column and explain the arrangement in terms of density. • **Catastrophic Events** • SG: L04 (pp42-53)

		• TG: L04 (pp45-56) • **Discovering Density** • TG: Exts (p48) • TG: Ses01-05 (pp5-46) • **Ocean Currents** • TG: Act03-05 (pp47-93) • **Properties of Matter** • SG: L01-03 (pp2-29) • SG: L05 (pp38-55) • SG: L09 (pp78-83) • SG: L19 (pp162-167) • SG: L26 (pp230-235) • TG: L01-05 (pp3-64) • TG: L09 (pp101-112) • TG: L19 (pp209-226) • TG: L26 (pp313-332)
GRADE LEVEL EXPECTATION	**2.1.7.**	Use physical properties to distinguish and separate one substance or material from another. • **Crime Lab Chemistry** • TG: Act01-03 (pp7-67) • TG: Exts (pp63-64) • **Environmental Detectives** • TG: Act07 (pp185-202) • **Properties of Matter** • SG: L15 (pp122-129) • SG: L17 (pp140-149) • TG: L15 (pp161-168) • TG: L17 (pp179-192)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE INDICATOR / GLE	**2.2.**	Enduring Understanding: The properties of the mixture are based on the properties of its components.
GRADE LEVEL EXPECTATION	**2.2.1.**	Distinguish between homogeneous and heterogeneous mixtures. Using their physical properties, design and conduct an investigation to separate the components of a homogeneous or heterogeneous mixture. Recognize that a homogeneous mixture is a solution. • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act01-03 (pp7-62) • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L22 (pp240-251) • TG: L22 (pp303-316) • **Environmental Detectives** • TG: Act07 (pp185-202) • **Properties of Matter** • SG: L01 (pp2-13) • SG: L11-15 (pp98-129) • SG: L17-19 (pp140-167) • TG: L01 (pp3-14) • TG: L11-15 (pp125-168) • TG: L16.Exts (p178)

		• TG: L17-19 (pp179-226) • TG: L22.Exts (p270)
GRADE LEVEL EXPECTATION	2.2.2.	Prepare solutions of different concentrations recognizing that the properties of the solution (color, density, boiling point) depend on the nature and concentration of the solute and solvent. • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act02 (pp29-45) • TG: Act03 (pp47-62) • **Catastrophic Events** • SG: L22 (pp240-251) • TG: L22 (pp303-316) • **Properties of Matter** • SG: L11-18 (pp98-161) • TG: L11-18 (pp125-208)
GRADE LEVEL EXPECTATION	2.2.4.	Conduct investigations to determine the effect of temperature on saturation point. • **Organisms-From Macro to Micro** • TG: L06.Exts (pp89-91) • **Properties of Matter** • SG: L12 (pp106-111) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • TG: L12 (pp135-142) • TG: L13 (pp143-152) • TG: L18 (pp193-208)
GRADE LEVEL EXPECTATION	2.2.5.	Construct a solubility curve based on data collected. Describe solubility and saturation point using the particle model. • **Organisms-From Macro to Micro** • TG: L06.Exts (pp89-91) • **Properties of Matter** • SG: L12 (pp106-111) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • TG: L12 (pp135-142) • TG: L13 (pp143-152) • TG: L18 (pp193-208)
GRADE LEVEL EXPECTATION	2.2.6.	Conduct investigations to demonstrate the process of diffusion. Use the particle model to describe the movement of materials from an area of higher concentration to an area of lower concentration. • **Human Body Systems** • SG: L06 (pp40-49) • TG: L06 (pp57-68) • **Organisms-From Macro to Micro** • SG: L10 (pp120-131) • TG: L10 (pp167-184)

CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.3.	Enduring Understanding: When materials interact within a closed system, the total mass of the system remains the same.
GRADE LEVEL EXPECTATION	2.3.1.	Show that mass is conserved when adding a solute to a solvent (mass of solvent + mass of solute = total mass of solution). • **Bubble-ology** • TG: Act01-04 (pp5-32) • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act02-03 (pp29-62) • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L22 (pp240-251) • TG: L22 (pp303-316) • **Environmental Detectives** • TG: Act07 (pp185-202) • **Properties of Matter** • SG: L08 (pp74-77) • SG: L11-18 (pp98-161) • SG: L25 (pp224-229) • TG: L08 (pp91-100) • TG: L11-18 (pp125-208) • TG: L25 (pp303-312)

CONTENT STANDARD	DE.2.	Materials and Their Properties
PERFORMANCE INDICATOR / GLE	2.4.	Enduring Understanding: People develop new materials as a response to the needs of society and the pursuit of knowledge. This development may have risks and benefits to humans and the environment.
GRADE LEVEL EXPECTATION	2.4.1.	Select a manufactured item and identify its component materials. Explain how the physical properties of the materials contribute to the function of the item. • **Earth in Space** • TG: L20.Exts (p297) • **Properties of Matter** • SG: L10 (pp86-97) • TG: L10 (pp113-124) • TG: L21.Exts (p251)
GRADE LEVEL EXPECTATION	2.4.2.	Discuss the social, economic, and/or environmental consequences of the production of new materials to meet human wants and needs. • **Catastrophic Events** • SG: L09 (pp102-112) • TG: L09 (pp127-142) • **Earth in Space** • SG: L20 (pp324-333) • SG: L21 (pp334-339) • TG: L20 (pp293-308) • TG: L21 (pp309-310) • **Energy, Machines, and Motion** • SG: L04 (pp26-35) • **Plate Tectonics** • TG: Ses01 (pp21-29) • **Properties of Matter**

		• SG: L18 (pp150-161) • TG: L03.Exts (p32) • TG: L21.Exts (p251) • **River Cutters** • TG: Ses05 (pp55-57) • **Stories in Stone** • TG: Ses07 (pp83-101)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.1.**	Enduring Understandings: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and energy fields (potential energy).
GRADE LEVEL EXPECTATION	**3.1.1.**	Describe how heat energy when added to a substance, will increase its temperature or change its state. Explain that as more heat energy is added to a substance, the particles' vibrations increase and the spacing between the particles increases, but the size of the particles stays the same. • **Catastrophic Events** • SG: L03-05 (pp26-67) • SG: L20-22 (pp224-251) • TG: L03-05 (pp27-68) • TG: L20-22 (pp279-316) • **Light** • TG: L10.Exts (p124) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • SG: L25 (pp224-229) • TG: L02.Exts (p21) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L12.Exts (p140) • TG: L13 (pp143-152) • TG: L14.Exts (p157) • TG: L15.Exts (p166) • TG: L18 (pp193-208) • TG: L22.Exts (p270) • TG: L25 (pp303-312)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.1.**	Enduring Understandings: Earth's systems can be broken down into individual components which have observable measurable properties.
GRADE LEVEL EXPECTATION	**5.1.1.**	Create models that simulate the amount of salt, frozen, fresh, and potable water available on Earth's surface. Compare total water supply on Earth to the amount of potable water available for human use. • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	**5.1.2.**	Calculate the ratio/percent of water generally found in solid, liquid and gaseous form on or within the Earth's surface and use this ratio to compare the amounts of water stored in different states. • **Properties of Matter** • TG: L05.Exts (p56)

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CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.2.	Enduring Understanding: Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.
GRADE LEVEL EXPECTATION	5.2.1.	Use diagrams of the hydrologic cycle to show and describe the circulation of water through the Earth's crust, oceans, and atmosphere. • **Catastrophic Events** • SG: L06 (pp68-79) • SG: L01 (pp2-13)
GRADE LEVEL EXPECTATION	5.2.2.	Use the particle model to describe solids, liquids, and gases in terms of the packing, motion of particles, and energy gain or loss. Apply this to the processes of evaporation, condensation, and precipitation in the water cycle. Explain how heat energy drives the water cycle. • **Catastrophic Events** • SG: L06 (pp68-79) • G: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13) • TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	5.2.3.	Use models or diagrams to explain how water stored underground (groundwater and aquifers) and water stored above ground (lakes, rivers, air, etc.) interact to form a continuous cycle. • **Catastrophic Events** • SG: L06 (pp68-79) • TG: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13)
GRADE LEVEL EXPECTATION	5.2.4.	Investigate, through the use of models, how water acts as a solvent and as it passes through the water cycle it dissolves minerals, gases, and pollutants and carries them to surface water and ground water supplies. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15-208) • **Ocean Currents** • TG: Act02 (pp29-45) • **River Cutters** • TG: Exts (p73) • TG: Ses05 (pp55-57)
GRADE LEVEL EXPECTATION	5.2.5.	Conduct investigations and use the data to describe the extent to which the permeability and porosity of a soil sample affect the rate of water percolation. • **Catastrophic Events** • SG: L17 (pp194-197) • TG: L17 (pp233-256) • **Microscopic Explorations**

		• TG: Act06 (pp69-73)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.3.**	Enduring Understanding: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	**5.3.1.**	Use topographic maps to locate Delaware watersheds and to identify the bodies of water into which they drain. Analyze and describe the relationship between elevation of land and the flow rate of water in a watershed. • **River Cutters** • TG: Ses01 (pp21-25) • TG: Ses02 (pp27-34)
GRADE LEVEL EXPECTATION	**5.3.2.**	Conduct tests including temperature, pH, salinity, dissolved oxygen, turbidity, nitrate, and phosphate to determine the potability of local water samples. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15--208) • **Organisms-From Macro to Micro** • TG: L18.Exts (pp299-300) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	**5.3.4.**	Explain the impact of human activities (e.g., building roads, fertilizing golf courses, etc.) on the quality of Delaware's waters. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15--208) • **Organisms-From Macro to Micro** • TG: L18.Exts (pp299-300) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	**5.3.5.**	Research and report on the processes used by municipalities to ensure water taken from local reservoirs is safe to return to the environment. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15--208) • **Organisms-From Macro to Micro** • TG: L14.Exts (p247) • TG: L18.Exts (pp299-300) • **Properties of Matter** • TG: L15.Exts (p166) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	**5.3.7.**	List ways in which human intervention can help maintain an adequate supply of fresh water for human consumption. Apply knowledge and skills learned about water as a resource to study local sources of

		drinking water and devise a water quality stewardship plan. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15--208) • **Organisms-From Macro to Micro** • TG: L14.Exts (p247) • TG: L18.Exts (pp299-300) • **Properties of Matter** • TG: L15.Exts (p166) • **River Cutters** • TG: Exts (p73)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.1.**	Enduring Understanding: Living systems, from the organismic to the cellular level, demonstrate the complementary nature of structure and function.
GRADE LEVEL EXPECTATION	**6.1.1.**	Identify and apply criteria for determining whether specimens or samples are living, dead, dormant or nonliving. • **Organisms-From Macro to Micro** • TG: L01.Exts (p12)
GRADE LEVEL EXPECTATION	**6.1.2.**	Classify organisms based on shared characteristics into currently recognized kingdoms and justify their placement. Give examples of organisms from each kingdom. • **Life Through Time** • TG: Ses01-06 (pp13-234) • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L04 (pp38-45) • SG: L05 (pp46-63) • SG: L07 (pp82-93) • SG: L11 (pp132-145) • SG: L14-16 (pp172-193) • SG: L20 (pp236-243) • TG: L05 (pp57-72) • TG: L06.Exts (pp89-91) • TG: L07 (pp105-130) • TG: L10.Exts (pp175-176) • TG: L11 (pp185-200) • TG: L14-16 (pp237-280) • TG: L20 (pp331-350)
GRADE LEVEL EXPECTATION	**6.1.3.**	Explain that individual cells are able to carry out basic life functions that are similar in organisms; however, explain that in multi-cellular organisms, cells become specialized, interdependent upon one another, and unable to survive independently. • **Organisms-From Macro to Micro** • SG: L07 (pp82-93) • TG: L07 (pp105-130)
GRADE LEVEL EXPECTATION	**6.1.5.**	Observe and sketch cells using microscopes and other appropriate tools. Compare and contrast plant, animal, protist, and bacterial cells by noting the presence or absence of major organelles (i.e., cell membrane, cell wall, nucleus, chloroplasts, mitochondria and vacuoles) using the sketches and other

		resources. • **Human Body Systems** • SG: L09 (pp68-75) • SG: L22 (pp182-189) • TG: L22 (pp253-276) • **Organisms-From Macro to Micro** • SG: L07-08 (pp82-105) • TG: L07-08 (pp105-150)
GRADE LEVEL EXPECTATION	**6.1.6.**	Research the sequence of events that led to the formation of the cell theory and correlate these events with technological advancements (e.g., hand lens, microscopes, and staining techniques). • **Microscopic Explorations** • TG: Act03-10 (pp49--97) • TG: Exts (p102) • **Organisms-From Macro to Micro** • SG: L02 (pp12-27) • SG: L04 (pp38-45) • SG: L07 (pp82-93) • SG: L12 (pp146-155) • SG: L16 (pp188-193) • TG: L02 (pp15-32) • TG: L04 (pp49-56) • TG: L07 (pp105-130) • TG: L11 (pp185-200) • TG: L12 (pp201-218) • TG: L14.Exts (p247) • TG: L16 (pp267-280)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.2.**	Enduring Understanding: All organisms transfer matter and convert energy from one form to another. Both matter and energy are necessary to build and maintain structures within the organism.
GRADE LEVEL EXPECTATION	**6.2.1.**	Recognize that the process of photosynthesis occurs in the chloroplasts of producers. Summarize the basic process in which energy from sunlight is used to make sugars from carbon dioxide and water (photosynthesis). Indicate that this food can be used immediately, stored for later use, or used by other organisms. • **Light** • SG: L11 (pp116-131) • TG: L11.Exts (p131) • **Organisms-From Macro to Micro** • SG: L07 (pp82-93) • SG: L10 (pp120-131) • TG: L07 (pp105-130) • TG: L10 (pp167-184)
GRADE LEVEL EXPECTATION	**6.2.2.**	Recognize that the process of cellular respiration in the mitochondria of both plants and animals releases energy from food. Indicate that this food provides the energy and materials for repair and growth of cells. Explain the complementary nature between photosynthesis and cellular respiration. • **Human Body Systems** • SG: L12 (pp98-109) • SG: L13 (pp110-119) • TG: L12 (pp137-152)

		• TG: L13 (pp153-158) • **Light** • SG: L11 (pp116-131) • TG: L11.Exts (p131) • **Organisms-From Macro to Micro** • SG: L07 (pp82-93) • SG: L10 (pp120-131) • SG: L15 (pp180-187) • TG: L10 (pp167-184) • TG: L15 (pp253-266)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.3.**	Enduring Understanding: Organisms respond to internal and external cues, which allow them to survive.
GRADE LEVEL EXPECTATION	**6.3.1.**	Research external conditions needed by a variety of organisms for survival such as temperature, turbidity, pH, salinity, and amount of dissolved oxygen, phosphates, and nitrates. Predict how organisms may respond to changes in these external conditions based on research findings. • **Acid Rain** • TG: Ses01 (pp7-19) • **Earth in Space** • TG: L07.Exts (pp92-93) • **Organisms-From Macro to Micro** • SG: L05 (pp46-63) • SG: L10 (pp120-131) • SG: L12-14 (pp146-179) • TG: L04.Exts (pp53-54) • TG: L05 (pp57-72) • TG: L06.Exts (pp89-91) • TG: L10 (pp167-184) • TG: L12-14 (pp201-252) • **Properties of Matter** • SG: L04 (pp30-37)
CONTENT STANDARD	**DE.6.**	**Life Processes**
PERFORMANCE INDICATOR / GLE	**6.4.**	Enduring Understanding: The life processes of organisms are affected by their interactions with each other and their environment, and may be altered by human manipulation.
GRADE LEVEL EXPECTATION	**6.4.1.**	Use various indicators (pH, turbidity, nitrates, phosphates, salinity, and macro-invertebrate surveys) to establish the health and potential potability of local bodies of water. • **Acid Rain** • TG: Ses03 (pp39-53) • **Environmental Detectives** • TG: Act01-08 (pp15--208) • **Organisms-From Macro to Micro** • TG: L18.Exts (pp299-300) • **River Cutters** • TG: Exts (p73)
CONTENT STANDARD	**DE.7.**	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	**7.1.**	Enduring Understanding: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	**7.1.1.**	Recognize that reproduction is a process that occurs in all living systems and is essential to the continuation of the species. Use models or diagrams to identify the structures of a flowering plant that

		produce eggs and sperm and explain that plants, as well as, animals can reproduce sexually. • **Chemical Reactions** • TG: Part1 (pp9-14) • TG: Part2 (pp15-21) • **Earth in Space** • TG: L07.Exts (pp92-93) • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L05 (pp46-63) • SG: L09 (pp106-119) • SG: L10 (pp120-131) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L05 (pp57-72) • TG: L09 (pp151-166) • TG: L10 (pp167-184) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292) • TG: L18 (pp293-302)
GRADE LEVEL EXPECTATION	**7.1.2.**	Given varied scenarios (including one or two parent reproduction, and having traits identical to or different than the parents), classify offspring as either sexually or asexually produced and justify your response. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L09 (pp151-166) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	**7.1.3.**	Compare and contrast asexual and sexual reproduction in terms of potential variation and adaptation to a static or changing environment. Relate advantages and/or disadvantages of each strategy. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L09 (pp151-166) • TG: L12 (pp201-218) • TG: L14 (pp237-252)

		• TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	7.1.4.	Make a simple labeled drawing of human reproductive cells. Indicate that the sex cells (sperm and egg) each have half of the chromosomal number (23) as a fertilized egg (46). The fertilized egg has the same number of chromosomes as each of the body cells of the new organism. Recognize that different organisms may have different numbers of chromosomes and that the number of chromosomes does not relate to the complexity of the organism. • **Organisms-From Macro to Micro** • SG: L08 (pp96-105) • SG: L19 (pp216-235) • TG: L08 (pp131-150) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	7.1.5.	Make a simple labeled drawing of asexual reproduction as it occurs in sexually produced organisms at the cellular level. Indicate that resulting cells contain an identical copy of genetic information from the parent cell. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L08 (pp96-105) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L08 (pp131-150) • TG: L09 (pp151-166) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	7.1.6.	Describe the relationship between genes, chromosomes, and DNA in terms of location and relative size. • **Organisms-From Macro to Micro** • SG: L08 (pp96-105) • SG: L19 (pp216-235) • TG: L08 (pp131-150) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	7.1.7.	Explain how the sex chromosomes inherited from each parent determines the gender of the offspring. • **Organisms-From Macro to Micro** • SG: L08 (pp96-105) • SG: L19 (pp216-235) • TG: L08 (pp131-150) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	7.1.9.	Use single trait Punnett squares to examine the genotypes of individuals and indicate which individuals will express dominant or recessive traits. Justify the indication by relating that dominant alleles appearing heterozygously or homozygously are expressed or that two recessive alleles (homozygous) are required for an offspring to express a recessive trait phenotypically. • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L19 (pp216-235)

		• TG: L01 (pp3-14) • TG: L19 (pp303-330)
GRADE LEVEL EXPECTATION	7.1.11.	Research and report on the contributions of Gregor Mendel and other genetic researchers and how their contributions altered the body of scientific knowledge. • **Organisms-From Macro to Micro** • SG: L19 (pp216-235) • TG: L19 (pp303-330)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understanding: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	Explain through the use of models or diagrams, why sexually-produced offspring are not identical to their parents. • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L09 (pp106-119) • SG: L12 (pp146-155) • SG: L14 (pp172-179) • SG: L17 (pp194-203) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L09 (pp151-166) • TG: L12 (pp201-218) • TG: L14 (pp237-252) • TG: L17 (pp281-292)
GRADE LEVEL EXPECTATION	7.2.2.	Identify 'kingdom' as the first main level of the standard classification system. Observe a variety of living organisms and determine into which kingdom they would be classified. • **Life Through Time** • TG: Ses01-06 (pp13-234) • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L06 (pp64-81) • SG: L11 (pp132-145) • SG: L20 (pp236-243) • TG: L01 (pp3-14) • TG: L06 (pp73-104) • TG: L11 (pp185-200) • **.** TG: L20 (pp331-350)
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.3.	Enduring Understanding: The development of technology has allowed us to apply our knowledge of genetics, reproduction, development and evolution to meet human wants and needs.
GRADE LEVEL EXPECTATION	7.3.1.	Research and report on selective breeding. Select an organism (e.g., race horses, pedigree dogs, drought resistant plants) and trace its history of development and the traits of the plant or animal that were enhanced by selective breeding. Recognize that the health profession uses pedigree charts to trace genetic disorders in past generations make predictions for future generations. • **Organisms-From Macro to Micro**

		• SG: L05 (pp46-63) • TG: L19.Exts (pp317-318)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	**8.3.**	Enduring Understanding: Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system.
GRADE LEVEL EXPECTATION	**8.3.1.**	Explain how sanitation measures such as sewers, landfills, and water treatment are important in controlling the spread of organisms that contaminate water and cause disease. • **Organisms-From Macro to Micro** • TG: L14.Exts (p247) • **Properties of Matter** • TG: L15.Exts (p166)

Grade 8

CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	**1.1.**	Enduring Understanding: Scientific inquiry involves asking scientifically-oriented questions, collecting evidence, forming explanations, connecting explanations to scientific knowledge and theory, and communicating and justifying the explanation.
GRADE LEVEL EXPECTATION	**1.1.1.**	Frame and refine questions that can be investigated scientifically, and generate testable hypotheses. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L04 (pp42-53) • TG: L01 (pp3-16) • TG: L04 (pp45-56) • **Earth in Space** • SG: L01 (pp2-11) • SG: L21 (pp334-339) • TG: L01 (pp3-10) • TG: L03.Exts (p33) • TG: L21 (pp309-310) • **Light** • SG: L01 (pp2-19) • TG: L01 (pp3-20)
GRADE LEVEL EXPECTATION	**1.1.2.**	Design and conduct investigations with controlled variables to test hypotheses. • **Bubble-ology** • TG: Act06 (pp41-44) • **Crime Lab Chemistry** • TG: Act03 (pp47-62) • TG: Exts (pp63-64) • **Catastrophic Events** • SG: L25 (pp274-282) • TG: L25 (pp347-372) • **Energy, Machines, and Motion** • SG: L07 (pp62-71) • TG: L07 (pp75-84) • **Human Body Systems** • SG: L08 (pp60-65) • SG: L17 (pp144-147) • **Organisms-From Macro to Micro** • SG: L15 (pp180-187)

		• TG: L15 (pp253-266) • **Properties of Matter** • SG: L13 (pp112-115) • SG: L15 (pp122-129) • SG: L16 (pp130-139) • SG: L23 (pp208-217) • SG: L24 (pp218-223) • TG: L13 (pp143-152) • TG: L15 (pp161-168) • TG: L16 (pp169-178) • TG: L23 (pp275-294) • TG: L24 (pp295-302) • **River Cutters** • TG: Ses07 (pp67-72)
GRADE LEVEL EXPECTATION	**1.1.3.**	Accurately collect data through the selection and use of tools and techniques appropriate to the investigation. Construct tables, diagrams and graphs, showing relationships between two variables, to display and facilitate analysis of data. Compare and question results with and from other students. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.4.**	Form explanations based on accurate and logical analysis of evidence. Revise the explanation using alternative descriptions, predictions, models and knowledge from other sources as well as results of further investigation. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.5.**	Communicate scientific procedures, data, and explanations to enable the replication of results. Use computer technology to assist in communicating these results. Critical review is important in the analysis of these results. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.6.**	Use mathematics, reading, writing, and technology in conducting scientific inquiries. • **All Units**
GRADE LEVEL EXPECTATION	**1.1.7.**	Conduct simple investigations in which a variety of materials (sand, water, light colored materials, dark colored materials) are exposed to light and heat energy. Measure the change in temperature of the material and describe any changes that occur in terms of the physical properties of the material. • **Color Analyzers** • TG: Act04 (pp31-37) • **Chemical Reactions** • TG: Exts (pp22-23) • **Catastrophic Events** • SG: L03-05 (pp26-67) • SG: L20-22 (pp224-251) • TG: L03-05 (pp27-68) • TG: L20-22 (pp279-316) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight**

		• TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Human Body Systems** • TG: L12.Exts (pp147-148) • TG: L13.Exts (p158) • TG: L22.Exts (p258) • **Light** • SG: L05 (pp48-57) • SG: L10 (pp108-115) • SG: L11 (pp116-131) • TG: L05 (pp59-72) • TG: L10.Exts (p124) • **Ocean Currents** • TG: Act03 (pp47-69) • TG: Act05 (pp85-93) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L13 (pp143-152) • TG: L18 (pp193-208) • TG: L22.Exts (p270)
GRADE LEVEL EXPECTATION	**1.1.9.**	Design and carry out investigations to determine how changing the mass of an object or changing its speed changes its kinetic energy. • **Earth in Space** • TG: L15 (pp221-244) • **Electrical Energy and Circuit Design** • SG: L09 (pp94-103) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L20 (pp200-213) • SG: L21 (pp214-225) • TG: L01 (pp3-22) • TG: L09 (pp99-106) • TG: L18.Exts (p224) • TG: L20 (pp235-238) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	**1.1.11.**	Explain that the mechanical energy of an object is the sum of its kinetic energy and its potential energy at any point in time. Identify the mechanical energy of objects in different circumstances and identify whether the mechanical energy consists of KE, PE or both (i.e., a ball at rest at the top of an incline and in its motion part of the way down the incline or a model plane driven by a 'rubber band' motor, etc.). • **Electrical Energy and Circuit Design** • SG: L07 (pp70-83) • SG: L09 (pp94-103) • TG: L07 (pp93-110) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L09 (pp82-91)

		• SG: L10 (pp92-97) • SG: L14 (pp130-139) • SG: L16 (pp148-161) • SG: L18 (pp174-187) • SG: L20 (pp200-213) • TG: L01-04 (pp3-46) • TG: L09 (pp99-106) • TG: L14 (pp167-176) • TG: L15.Exts (pp180-181) • TG: L16 (pp185-202) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • **Light** • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	**1.1.12.**	Interpret graphical representations of energy to describe how changes in the potential energy of an object can influence changes in its kinetic energy. • **Electrical Energy and Circuit Design** • SG: L07 (pp70-83) • SG: L09 (pp94-103) • TG: L07 (pp93-110) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L14 (pp130-139) • SG: L16 (pp148-161) • SG: L18 (pp174-187) • SG: L20 (pp200-213) • TG: L01-04 (pp3-46) • TG: L09 (pp99-106) • TG: L14 (pp167-176) • TG: L15.Exts (pp180-181) • TG: L16 (pp185-202) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • **Light** • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	**1.1.13.**	Describe how the motion of water particles in a glass of cold water is different from the motion of water particles in a glass of hot water. • **Properties of Matter** • TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	**1.1.14.**	Explain that sound energy is mechanical energy that travels in the form of waves. Use the Particle Model to explain why sound waves must travel through matter, and that sound travels more effectively through solids and liquids than through gases. Model and describe how sound energy travels through solids, liquids, and gases.

		• **Catastrophic Events** • TG: L14.Exts (pp193-194)
GRADE LEVEL EXPECTATION	1.1.16.	Explain that heat energy and sound energy both make the particles of a substance move. Use models to explain how the particles respond differently to these types of energy. Use models to explain why sound travels much faster through substances than heat energy does. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • TG: L14.Exts (pp193-194) • **Human Body Systems** • TG: L13.Exts (p158)
GRADE LEVEL EXPECTATION	1.1.17.	Explain that the electromagnetic waves from the sun consist of a range of wavelengths and associated energies. Explain that the majority of the energy from the sun reaches Earth in the form of infrared, visible, and ultraviolet waves. Use diagrams to demonstrate the differences in different types of electromagnetic waves. • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • Energy, Machines, and Motion • SG: L19 (pp188-199) • TG: L19 (pp229-234) • **Invisible Universe** • TG: Act01-03 (pp15-57) • TG: Act05 (pp78-91) • **Living with a Star** • TG: Act02-04 (pp41-99) • **Light** • SG: L01 (pp2-19) • SG: L09 (pp92-107) • SG: L10 (pp108-115) • SG: L11 (pp116-131) • TG: L08.Exts (p105) • TG: L09 (pp107-118) • TG: L10 (pp119-126) • TG: L17.Exts (p216) • **Organisms-From Macro to Micro** • TG: L18.Exts (pp299-300)
GRADE LEVEL EXPECTATION	1.1.18.	Plan and conduct an experiment to identify the presence of UV and IR waves in sunlight or other sources of electromagnetic waves. Use evidence to explain the presence of each. • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Energy, Machines, and Motion** • SG: L19 (pp188-199) • TG: L19 (pp229-234) • **Invisible Universe** • TG: Act01-03 (pp15-57) • TG: Act05 (pp78-91) • **Living with a Star**

		• TG: Act02-04 (pp41-99) • **Light** • SG: L09-11 (pp92-131) • TG: L08.Exts (p105) • TG: L09-10 (pp107-126) • TG: L17.Exts (p216)
GRADE LEVEL EXPECTATION	1.1.19.	Explain that the transfer of energy from one object to another is caused by the exertion of a force. Create an energy chain to show how forces can change the mechanical energy of an object. Describe how the distance over which the forces act will influence the amount of energy transferred (and when appropriate, the amount of energy transformed). • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-18 (pp156-195) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-18 (pp213-262) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	1.1.20.	Give examples of how mechanical energy can be transferred to (or away from) an object and describe the changes that can take place in the motion of the object because of this energy transfer, (e.g., pulling on a trailer to start it moving or using friction to slow an object and bring it to rest). • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-18 (pp156-195) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-18 (pp213-262) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	1.1.21.	Use diagrams to trace and describe the transfer of energy through a physical system (for example, the erosion effects of water flowing down an unprotected slope). • **Environmental Detectives** • TG: Act04 (pp91-111)

		• **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208) • **Energy, Machines, and Motion** • SG: L14 (pp130-139) • SG: L16 (pp148-161) • SG: L18 (pp174-187) • TG: L14 (pp167-176) • TG: L15.Exts (pp180-181) • TG: L16 (pp185-202) • **Human Body Systems** • TG: L13.Exts (p158) • **Invisible Universe** • TG: Act05 (pp78-91) • **River Cutters** • TG: Ses02 (pp27-34) • TG: Ses06 (pp59-65)
GRADE LEVEL EXPECTATION	1.1.23.	Explain that the frequency and amplitude are two characteristics of waves that determine the mechanical energy carried and delivered by a sound wave per unit of time. Use diagrams to explain how each of these properties will influence the KE of the particles in the substance when a sound wave passes through the substance. Give an example of a high frequency sound wave that delivers small quantities of energy every second and explain how this is possible. Give an example of a low frequency sound wave that delivers large quantities of energy every second and explain how this is possible • **Catastrophic Events** • TG: L14.Exts (pp193-194)
GRADE LEVEL EXPECTATION	1.1.25.	Use the Particle Model to describe the difference between heat energy transfer in solids and heat energy transfer in liquids and gases (i.e., the differences between conduction and convection). • **Convection: A Current Event** • TG: Exts (pp27-29) • TG: Ses01-03 (pp5-26) • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • **Human Body Systems** • TG: L13.Exts (p158) • **Properties of Matter** • SG: L05 (pp38-55) • TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	1.1.26.	Conduct simple investigations to demonstrate that heat energy is transferred from one material to another in predictable ways (from materials at higher temperatures to materials at lower temperatures), until both materials reach the same temperature. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53)

		• TG: L03 (pp27-44) • TG: L04 (pp45-56) • **Electrical Energy and Circuit Design** • TG: L01.Exts (p16) • **Human Body Systems** • TG: L13.Exts (p158)
GRADE LEVEL EXPECTATION	**1.1.27.**	Explain how the addition or removal of heat energy can change an object's temperature or its physical state. Conduct simple investigations involving changes of physical state and temperature. Relate that there is no change in temperature when a substance is changing state. • **Chemical Reactions** • TG: Exts (pp22-23) • **Catastrophic Events** • SG: L03-05 (pp26-67) • SG: L20-22 (pp224-251) • TG: L03-05 (pp27-68) • TG: L20 (pp279-292) • TG: L21 (pp293-302) • TG: L22 (pp303-316) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • **Hot Water and Warm Homes from Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Human Body Systems** • TG: L12.Exts (pp147-148) • TG: L13.Exts (p158) • TG: L22.Exts (p258) • **Light** • TG: L10.Exts (p124) • **Ocean Currents** • TG: Act03 (pp47-69) • TG: Act05 (pp85-93) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • SG: L25 (pp224-229) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L13 (pp143-152) • TG: L18 (pp193-208) • TG: L22.Exts (p270) • TG: L25 (pp303-312)
GRADE LEVEL EXPECTATION	**1.1.28.**	Explain that energy transformation and energy transfer are different processes and that energy transformations can take place during an energy transfer. Give examples of energy transformations that take place during an energy transfer. Give examples of energy transfers that do not include energy transformations. Give examples of energy transformations that take place without any energy transfer. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • **Electrical Energy and Circuit Design**

		• SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-19 (pp156-209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15 (pp213-226) • TG: L15.Exts (pp223-224) • TG: L16-19 (pp227-276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L10 (pp92-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199) • SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02-04 (pp23-46) • TG: L09 (pp99-106) • TG: L10 (pp107-130) • TG: L17 (pp203-216) • TG: L19-22 (pp229-254) • **Human Body Systems** • TG: L13.Exts (p158) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • SG: L26 (pp294-297) • TG: L02 (pp21-36) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	**1.1.30.**	Trace the flow of the energy carried by the light when the light strikes a material and is reflected from, transmitted through, and/or absorbed by the material. Describe the energy transfers and transformations that take place when light energy is absorbed by a material. • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act04 (pp31-37) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Light** • SG: L01 (pp2-19) • SG: L03 (pp32-39) • SG: L05 (pp48-57) • SG: L06 (pp58-67) • SG: L08 (pp82-91) • SG: L10 (pp108-115) • SG: L11 (pp116-131) • SG: L14-20 (pp144-227) • SG: L24 (pp266-283)

		• SG: L26 (pp294-297) • TG: L01 (pp3-20) • TG: L03 (pp37-48) • TG: L05 (pp59-72) • TG: L06 (pp73-82) • TG: L08 (pp99-106) • TG: L10 (pp119-126) • TG: L14-20 (pp169-294) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	1.1.31.	Conduct investigations to show that materials can absorb some frequencies of electromagnetic waves, but reflect others or allow them to transmit through the material. • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act04 (pp31-37) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Light** • SG: L01 (pp2-19) • SG: L03 (pp32-39) • SG: L05 (pp48-57) • SG: L06 (pp58-67) • SG: L08 (pp82-91) • SG: L10 (pp108-115) • SG: L11 (pp116-131) • SG: L14-20 (pp144-227) • SG: L24 (pp266-283) • SG: L26 (pp294-297) • TG: L01 (pp3-20) • TG: L03 (pp37-48) • TG: L05 (pp59-72) • TG: L06 (pp73-82) • TG: L08 (pp99-106) • TG: L10 (pp119-126) • TG: L14-20 (pp169-294) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	1.1.32.	Use this selective absorption process to explain how objects obtain their color, how materials like sunscreen can serve to protect us from harmful electromagnetic waves and how selective absorption contributes to the Greenhouse Effect. • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act0-04 (pp5-37) • TG: Exts (pp38-40) • **Catastrophic Events** • SG: L03 (pp26-41) • TG: L03 (pp27-44) • TG: L08.Exts (p108) • **Earth in Space** • SG: L07 (pp88-101) • SG: L17 (pp268-289)

		• SG: L19 (pp312-323) • TG: L07 (pp83-96) • TG: L17 (pp269-276) • TG: L19 (pp287-292) • **Global Warming and the Greenhouse Effect** • TG: Ses01-08 (pp5-124) • **Hot Water and Warm Homes from Sunlight** • TG: Ses05 (pp39-41) • **Light** • SG: L01 (pp2-19) • SG: L05 (pp48-57) • SG: L08-12 (pp82-137) • SG: L20 (pp224-227) • TG: L01 (pp3-20) • TG: L05 (pp59-72) • TG: L08-12 (pp99-152) • TG: L17.Exts (p216)
GRADE LEVEL EXPECTATION	**1.1.33.**	Trace what happens to the energy from the Sun when it reaches Earth and encounters various materials, such as, atmosphere, oceans, soil, rocks, plants, and animals. Recognize that these materials absorb, reflect and transmit the electromagnetic waves coming from the sun differently. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L05 (pp54-67) • SG: L13 (pp154-163) • TG: L03 (pp27-44) • TG: L05 (pp57-68) • TG: L13 (pp177-186) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83-146) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37)
GRADE LEVEL EXPECTATION	**1.1.34.**	Conduct investigations to determine how the physical properties of materials (e.g., size, shape, color, texture, hardness) can account for the effect the materials have on sunlight and the degree of change observed in the materials (for example, dark cloth absorbs more heat than light cloth, clear water transmits more light than murky water, and polished materials reflect more light than dull materials). • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act04 (pp31-37) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Invisible Universe** • TG: Act02 (pp26-38) • **Light** • SG: L01-11 (pp2-131) • SG: L13-20 (pp138-227) • SG: L24 (pp266-283)

		• SG: L26 (pp294-297) • TG: L01-10 (pp3-126) • TG: L13-20 (pp153-294) • TG: L23.Exts (p318) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	1.1.35.	Use the properties of water and soil to explain how uneven heating of Earth's surface can occur. Conduct an investigation that shows how water and soil are heated unequally by sunlight. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L05 (pp54-67) • SG: L13 (pp154-163) • TG: L03 (pp27-44) • TG: L05 (pp57-68) • TG: L13 (pp177-186) • **Earth in Space** • SG: L07 -09(pp88-127) • TG: L07-09 (pp83-146) • **Global Warming and the Greenhouse Effect** • TG: Ses02 -04(pp17-37)
GRADE LEVEL EXPECTATION	1.1.36.	Describe how this can be used to explain unequal heating of the Earth's surface, producing atmospheric movements that influence weather. • **Catastrophic Events** • SG: L13 (pp154-163) • TG: L13 (pp177-186) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Global Warming and the Greenhouse Effect** • TG: Ses02-04 (pp17-37)
GRADE LEVEL EXPECTATION	1.1.37.	Use models to describe how the relative positions of the Sun, Moon, and Earth account for Moon phases, eclipses, and tides. • **Catastrophic Events** • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03 (pp17-24) • TG: Act04 (pp25-32) • **Earth in Space** • SG: L01-09 (pp2-127) • SG: L16 (pp244-265) • TG: L01-09 (pp3-146) • TG: L16 (pp245-268) • **Invisible Universe** • TG: Act04 (pp58-77) • **Light** • SG: L05 (pp48-57) • TG: L05 (pp59-72) • **Moons of Jupiter** • TG: Act03 (pp31-39)

		• **The Real Reasons for the Seasons** • TG: Act03 (pp29-48) • TG: Act06-08 (pp65-88) • **Stories in Stone** • TG: Ses02 (pp23-31)
GRADE LEVEL EXPECTATION	1.1.38.	Describe how the relative positions of the Earth, Moon and Sun can cause high and low tides, and unusually high or low tides. • **Earth, Moon, and Stars** • TG: Act04 (pp25-32) • **Earth in Space** • SG: L16 (pp244-265) • TG: L16 (pp245-268) • TG: L16.Exts (p256) • **Moons of Jupiter** • TG: Act03 (pp31-39)
GRADE LEVEL EXPECTATION	1.1.39.	Demonstrate an understanding of the components of our Solar System and their characteristics, including the Moon, the Sun, the planets and their moons, extra-solar planets, and smaller objects such as asteroids and comets. Construct scale models of the Solar System in order to describe the relative sizes of planets and their distances from the Sun. • **Earth, Moon, and Stars** • TG: Act03 (pp17-24) • **Earth in Space** • SG: L01-22 (pp2-343) • **Earth in Space** • TG: L01-22 (pp3--326) • **Energy, Machines, and Motion** • TG: L05.Exts (pp53-54) • **Living with a Star** • TG: Act01 (pp15-38) • TG: Act02 (pp41-58) • TG: Act06 (pp113-131) • **Light** • SG: L02 (pp20-31) • **Messages From Space** • TG: Act02 (pp27-45) • TG: Act03 (pp46-87) • TG: Act05 (pp96-123) • **Moons of Jupiter** • TG: Act02 (pp19-29)
GRADE LEVEL EXPECTATION	1.1.40.	Demonstrate an understanding of the motion of the bodies in our Solar System. Use models, charts, illustrations, and other suitable representations to predict and describe regular patterns of motion for most objects in the Solar System. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03-06 (pp17-52) • **Earth in Space**

		• SG: L02-04 (pp12-61) • SG: L06-08 (pp74-121) • SG: L16 (pp244-265) • TG: L02-04 (pp11-52) • TG: L06-08 (pp73-120) • TG: L16 (pp245-268) • **Invisible Universe** • TG: Act04 (pp58-77) • **Light** • SG: L05 (pp48-57) • TG: L05 (pp59-72) • **The Real Reasons for the Seasons** • TG: Act02 (pp22-28) • TG: Act04 (pp49-56) • TG: Act06-08 (pp65-88) • **Stories in Stone** • TG: Ses02 (pp23-31)
GRADE LEVEL EXPECTATION	**1.1.41.**	Explain how the Sun is the central and largest body in our Solar System and the source of the light energy that hits our planet. Use models to explain how variations in the amount of Sun's energy hitting the Earth's surface results in seasons. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03 (pp17-24) • TG: Act05 (pp33-40) • TG: Act06 (pp40-52) • **Earth in Space** • SG: L01-08 (pp2-121) • SG: L10-13 (pp130-199) • SG: L15-22 (pp216-343) • TG: L01-22 (pp3--326) • **Messages From Space** • TG: Act02 (pp27-45) • TG: Act03 (pp46-87) • **Organisms-From Macro to Micro** • TG: L10.Exts (pp175-176) • **The Real Reasons for the Seasons** • TG: Act01-08 (pp17-88)
GRADE LEVEL EXPECTATION	**1.1.42.**	Observe, measure, and predict changes in weather using atmospheric properties (wind speed and direction, cloud cover and type, temperature, dew point, air pressure, and relative humidity). Describe how air pressure and temperature change with increasing altitude and/or latitude. • **Catastrophic Events** • SG: L02-08 (pp12-101) • SG: L24 (pp264-273) • TG: L02-08 (pp17-126) • **s** TG: L24 (pp329-346) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • **Properties of Matter**

		• TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	1.1.43.	Explain how uneven heating of Earth's components - water, land, air - produce local and global atmospheric and oceanic movement. Describe how these local and global patterns of movement influence weather and climate. • **Catastrophic Events** • SG: L04 (pp42-53) • SG: L07 (pp80-95) • TG: L07 (pp83-102) • **Ocean Currents** • TG: Act02-07 (pp29-140) • **Only One Ocean** • TG: Act01 (pp15-40) • TG: Act02 (pp43-87) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	1.1.44.	Investigate the rate at which different Earth materials absorb heat. Explain how these differences in heat absorption causes air pressure differences that result in convection currents (i.e., local land and sea breezes). • **Catastrophic Events** • SG: L02-08 (pp12-101) • SG: L13 (pp154-163) • SG: L24 (pp264-273) • TG: L02-08 (pp17-126) • TG: L13 (pp177-186) • TG: L24 (pp329-346) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83-46) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	1.1.45.	Use a variety of models, charts, diagrams, or simple investigations to explain how the Sun's energy drives the cycling of water through the Earth's crust, oceans, and atmosphere. • **Catastrophic Events** • SG: L06 (pp68-79) • TG: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13)
GRADE LEVEL EXPECTATION	1.1.46.	Examine maps of ocean currents and trace the origin and flow of such currents to explain the transfer of heat energy. Identify which currents have dominant influence on the Delaware coast. • **Catastrophic Events** • SG: L07 (pp80-95) • TG: L07 (pp83-102)

		• **Ocean Currents** • TG: Act06 (pp95-136) • **Only One Ocean** • TG: Act01 (pp15-40) • TG: Act02 (pp43-87)
GRADE LEVEL EXPECTATION	1.1.47.	Describe how origin affects an air mass's temperature and moisture content. • **Catastrophic Events** • SG: L02 (pp12-25) • SG: L03 (pp26-41) • SG: L05-07 (pp54-95) • TG: L02 (pp17-26) • TG: L03 (pp27-44) • TG: L05-07 (pp57-102)
GRADE LEVEL EXPECTATION	1.1.49.	Describe how the formation of clouds is influenced by the dew point, environmental temperature and amount of particles in the air. Explain how various lifting mechanisms affect cloud formation. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L04 (pp42-53) • SG: L06 (pp68-79) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • TG: L04 (pp45-56) • TG: L06 (pp69-82)
GRADE LEVEL EXPECTATION	1.1.50.	Use cloud characteristics (altitude, composition, and form) to predict the weather. Discuss how different cloud types are indicators of weather and weather systems such as frontal systems and hurricanes. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L04 (pp42-53) • SG: L06 (pp68-79) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • TG: L04 (pp45-56) • TG: L06 (pp69-82)
GRADE LEVEL EXPECTATION	1.1.51.	Research and report on reproductive strategies of different organisms (i.e., broadcast spawning versus nurturing parenting) that allow them to be successful. • **Chemical Reactions** • TG: Part1 (pp9-14) • TG: Part2 (pp15-21) • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L05 (pp46-63) • SG: L09 (pp106-119) • SG: L14 (pp172-179) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L05 (pp57-72)

		• TG: L09 (pp151-166) • TG: L12.Exts (p207) • TG: L14 (pp237-252) • TG: L18 (pp293-302) • TG: L18.Exts (pp299-300)
GRADE LEVEL EXPECTATION	1.1.52.	Observe a variety of organisms and explain how a specific trait could increase an organism's chances of survival. • **Life Through Time** • TG: Ses05-07 (pp173-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236)
GRADE LEVEL EXPECTATION	1.1.53.	Conduct a natural selection simulation to demonstrate how physical adaptations (i.e., protective camouflage, long neck for food gathering, muscular legs for running, heavy beak for nut cracking, etc...) have selective advantages for an organism. Research and report on beneficial physical adaptations of a variety of organisms. • **Human Body Systems** • TG: L22.Exts (p258) • **Life Through Time** • TG: Ses02 (pp37-100) • TG: Ses05-07 (pp173-269) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L09 (pp106-119) • SG: L13 (pp158-171) • TG: L06 (pp73-104) • TG: L10.Exts (pp175-176) • TG: L13 (pp219-236) • TG: L18.Exts (pp299-300)
GRADE LEVEL EXPECTATION	1.1.54.	Investigate and discuss how short-term physiological changes of an organism (e.g., skin tanning, muscle development, formation of calluses) differ from long-term evolutionary adaptations (e.g., white coloration of polar bears, seed formation in plants) that occur in populations of organisms over generations. • **Life Through Time** • TG: Ses02-07 (pp37-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236) • TG: L19.Exts (pp317-318)
GRADE LEVEL EXPECTATION	1.1.55.	Conduct simulations to investigate how organisms fulfill basic needs (i.e., food, shelter, air, space light/dark, and water) in a competitive environment. Relate how competition for resources can determine survival. • **Acid Rain** • TG: Ses01 (pp7-19) • **Environmental Detectives** • TG: Act01-07 (pp15-202) • **Earth in Space** • TG: L07.Exts (pp92-93) • TG: L10.Exts (p152) • **Only One Ocean**

		• TG: Act03 (pp89-144) • **Organisms-From Macro to Micro** • SG: L05 (pp46-63) • SG: L08 (pp96-105) • SG: L10 (pp120-131) • SG: L13 (pp158-171) • SG: L14 (pp172-179) • TG: L04.Exts (pp53-54) • TG: L05 (pp57-72) • TG: L06.Exts (pp89-91) • TG: L10 (pp167-184) • TG: L13 (pp219-236) • TG: L14 (pp237-252) • **Properties of Matter** • SG: L04 (pp30-37)
GRADE LEVEL EXPECTATION	**1.1.56.**	Examine an assortment of plants and animals and use simple classification keys, based on observable features, to sort and group the organisms. • **Life Through Time** • TG: Ses01-06 (pp13-234) • **Organisms-From Macro to Micro** • SG: L04 (pp38-45) • SG: L05 (pp46-63) • SG: L07 (pp82-93) • SG: L16 (pp188-193) • SG: L20 (pp236-243) • TG: L05 (pp57-72) • TG: L06.Exts (pp89-91) • TG: L07 (pp105-130) • TG: L10.Exts (pp175-176) • TG: L16 (pp267-280) • TG: L20 (pp331-350)
GRADE LEVEL EXPECTATION	**1.1.58.**	Survey the diversity of organisms in a local or model ecosystem. Recognizing that a population consists of all individuals of a species that occur together at a given place and time, describe how to estimate and then calculate the size of a large population of a variety of organisms. Chart the diversity of the organisms in the ecosystem. • **Environmental Detectives** • TG: Act05 (pp113-141) • **Only One Ocean** • TG: Act03 (pp89-144) • **Organisms-From Macro to Micro** • SG: L02 (pp12-27) • SG: L04 (pp38-45) • TG: L12.Exts (p207)
GRADE LEVEL EXPECTATION	**1.1.60.**	Describe and explain how factors (i.e., space, food, water, disease) limit the number of organisms an ecosystem can support. • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • TG: L01.Exts (p12) • TG: L05.Exts (pp69-70)

		• TG: L10.Exts (pp175-176)
GRADE LEVEL EXPECTATION	1.1.61.	Construct a data table or line graph to show population changes of a selected species over time. Describe the population changes portrayed by the graph. • **Environmental Detectives** • TG: Act05 (pp113-141)
GRADE LEVEL EXPECTATION	1.1.62.	Observe graphs or data tables showing both the population growth of a species and the consequences of resource depletion on the population. Analyze the data and explain the effect that may occur from exponential growth of a population (given finite resources). • **Environmental Detectives** • TG: Act05 (pp113-141) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • TG: L01.Exts (p12) • TG: L05.Exts (pp69-70) • TG: L10.Exts (pp175-176)
GRADE LEVEL EXPECTATION	1.1.63.	Investigate and discuss how short-term physiological changes of an organism (e.g., skin tanning, muscle development, formation of calluses) differ from long-term evolutionary adaptations (e.g., white coloration of polar bears, seed formation in plants) that occur in a group of organisms over generations. • **Life Through Time** • TG: Ses02-07 (pp37-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236) • TG: L19.Exts (pp317-318)
GRADE LEVEL EXPECTATION	1.1.64.	Investigate local areas, disturbed and undisturbed, that are undergoing succession (i.e., abandoned gardens, ditch banks, and the edge of a forest). • **Organisms-From Macro to Micro** • SG: L12 (pp146-155) • TG: L12 (pp201-218)
GRADE LEVEL EXPECTATION	1.1.65.	Predict how plant communities that grow in the area may change over time and how their presence determines what kinds of animals may move into and out of the areas. • **Organisms-From Macro to Micro** • SG: L12 (pp146-155) • TG: L12 (pp201-218)
GRADE LEVEL EXPECTATION	1.1.67.	Design food webs and trace the flow of matter and energy (beginning with the Sun) through the food web. • **Earth in Space** • TG: L07.Exts (pp92-93) • **Human Body Systems** • SG: L13 (pp110-119) • TG: L13 (pp153-158) • **Light** • SG: L11 (pp116-131) • TG: L11.Exts (p131)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

CONTENT STANDARD	DE.1.	Nature and Application of Science and Technology
PERFORMANCE INDICATOR / GLE	1.2.	Enduring Understanding: The development of technology and advancement in science influence and drive each other forward.
GRADE LEVEL EXPECTATION	1.2.1.	Identify different forms of alternative energy (i.e., solar, wind, ocean waves, tidal and hydroelectric systems). Research and report on the use of this alternative form of energy. Discuss and compare findings to describe the advantages and disadvantages of different kinds of alternative energy. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • SG: L06 (pp68-79) • SG: L07 (pp80-95) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • TG: L06 (pp69-82) • TG: L07 (pp83-102) • TG: L19.Exts (pp274-275) • TG: L24.Exts (pp337-338) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83-146) • **Electrical Energy and Circuit Design** • SG: L19 (pp196-209) • TG: L01.Exts (p16) • TG: L19 (pp263-276) • **Energy, Machines, and Motion** • SG: L08 (pp72-81) • TG: L04.Exts (pp41-42) • **Hot Water and Warm Homes from Sunlight** • TG: Ses01-05 (pp7-41) • **Light** • SG: L02 (pp20-31)
GRADE LEVEL EXPECTATION	1.2.2.	Analyze data on sunrise and sunset times (in terms of length of daylight) and describe patterns. Explain the reason for the patterns by using models or computer simulations of the Earth and Sun. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act05 (pp33-40) • TG: Act06 (pp40-52) • **Earth in Space** • SG: L02-04 (pp12-61) • SG: L06 (pp74-87) • SG: L08 (pp102-121) • TG: L02-04 (pp11-52) • TG: L06 (pp73-82) • TG: L08 (pp97-120) • **The Real Reasons for the Seasons** • TG: Act02 (pp22-28) • TG: Act06-08 (pp65-88)

GRADE LEVEL EXPECTATION	1.2.3.	Using internet, newspaper, and actual observations of the night sky for at least two months, collect data on the Moon's appearance, and moonrise and moonset times. Analyze the data to describe the observable patterns (phases). Explain why the Moon's appearance changes in a repeating cyclical pattern. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03-06 (pp17-52) • **Earth in Space** • SG: L02-06 (pp12-87) • SG: L08 (pp102-121) • SG: L16 (pp244-265) • TG: L02-06 (pp11-82) • TG: L08 (pp97-120) • TG: L16 (pp245-268) • **Moons of Jupiter** • TG: Act03 (pp31-39) • **The Real Reasons for the Seasons** • TG: Act02 (pp22-28) • TG: Act06-08 (pp65-88)
GRADE LEVEL EXPECTATION	1.2.4.	Use a variety of resources (e.g., NASA photographs, computer simulations) to compare and contrast the physical properties (i.e., temperature, size, composition, surface features) of planets. • **Earth in Space** • SG: L10 (pp130-145) • SG: L11 (pp146-159) • SG: L13-16 (pp174-265) • TG: L10 (pp147-158) • TG: L11 (pp159-180) • TG: L13-16 (pp197-268) • **Messages From Space** T • G: Act03 (pp46-87) • **Moons of Jupiter** • TG: Act04 (pp41-51)
GRADE LEVEL EXPECTATION	1.2.5.	Recognize that spin offs are products which have undergone a technology transfer process from research to public use. Research spin-offs from the space program that have affected our everyday lives (i.e., Velcro, smoke detectors, cordless tools). • **Earth in Space** • SG: L20-21 (pp324-339) • TG: L20-21 (pp293-310) • **Electrical Energy and Circuit Design** • SG: L02 (pp12-25) • TG: L02 (pp23-36) • **Energy, Machines, and Motion** • SG: L16 (pp148-161) • TG: L16 (pp185-202) • **Human Body Systems** • TG: L18.Exts (pp215-216) • TG: L19.Exts (p225) • **Plate Tectonics**

		• TG: Ses01 (pp21-29) • **Properties of Matter** • TG: L21.Exts (p251)
GRADE LEVEL EXPECTATION	1.2.6.	Discuss the origin and identify characteristics (i.e., air circulation pattern, wind speed, temperature and dew point, and air pressure) of storm systems including hurricanes, Nor' easters, tornadoes, thunderstorms, and mid-latitude cyclones. Explain how these weather events can transfer heat. Describe the environmental, economic, and human impact of these storms. • **Catastrophic Events** • SG: L01-03 (pp2-41) • SG: L05-25 (pp54--282) • TG: L01-25 (pp3-372) • **Electrical Energy and Circuit Design** • TG: L02.Exts (pp35-36)
GRADE LEVEL EXPECTATION	1.2.7.	Examine isobars on weather maps to describe how wind (moving air) travels from a region of high pressure to a region of low pressure. Apply this knowledge to explain the cause of wind. • **Catastrophic Events** • SG: L02-08 (pp12-101) • SG: L24 (pp264-273) • TG: L02-08 (pp17-126) • TG: L24 (pp329-346) • **Ocean Currents** • TG: Act02 (pp29-45) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	1.2.8.	Record and interpret daily weather measurements over an extended period of time using a variety of instruments (i.e., barometer, anemometer, sling psychrometer, rain gauge, and thermometer) in order to predict and to identify weather patterns. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L06 (pp68-79) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • TG: L06 (pp69-82) • TG: L08.Exts (p108) • TG: L24.Exts (pp337-338) • **Earth in Space** • SG: L09 (pp122-127) • **Hot Water and Warm Homes from Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Properties of Matter** • SG: L05 (pp38-55) • SG: L07 (pp64-73) • SG: L18 (pp150-161) • TG: L05 (pp49-64) • TG: L07 (pp79-90) • TG: L18 (pp193-208)
GRADE LEVEL EXPECTATION	1.2.10.	Examine satellite imagery pictures and use these images to identify cloud patterns and storm systems.

		• **Catastrophic Events** • SG: L01-03 (pp2-41) • SG: L05-25 (pp54-282) • TG: L01-225 (pp3--372) • **Electrical Energy and Circuit Design** • TG: L02.Exts (pp35-36) • **Living with a Star** • TG: Act03 (pp61-84) • **Light** • SG: L09 (pp92-107) • SG: L16 (pp166-185)
GRADE LEVEL EXPECTATION	1.2.12.	Research and analyze data on human population changes that have occurred in a specific Delaware ecosystem. Discuss reasons for changes in human population and explain how these changes have affected the biodiversity of local organisms and availability of natural resources in the given ecosystem (e.g., habitat loss, water quality, preservation/concentration efforts). • **Environmental Detectives** • TG: Act01 (pp15-31) • **Global Warming and the Greenhouse Effect** • TG: Ses06 (pp93-124) • **Ocean Currents** • TG: Act01 (pp9-28) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L13 (pp158-171) • **Properties of Matter** • SG: L12 (pp106-111) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	1.2.13.	Identify ways in which invasive species can disrupt the balance of Delaware as well as other ecosystems (i.e., competition for resources including habitat and/or food). Research and report on an invasive species, indicating how this species has altered the ecosystem. • **Environmental Detectives** • TG: Act05 (pp113-141) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L17 (pp194-203)
CONTENT STANDARD	**DE.1.**	**Nature and Application of Science and Technology**
PERFORMANCE INDICATOR / GLE	1.3.	Enduring Understanding: Understanding past processes and contributions is essential in building scientific knowledge.
GRADE LEVEL EXPECTATION	1.3.1.	Describe how scientists have historically confirmed that the Earth is round, not flat. • **Catastrophic Events** • SG: L10 (pp114-119) • SG: L14 (pp164-169) • SG: L17 (pp194-197) • SG: L18 (pp200-209) • TG: L10 (pp143-148) • TG: L14 (pp187-196) • TG: L17 (pp233-256) • TG: L18 (pp257-264) • **Earth, Moon, and Stars**

		• TG: Act02 (pp9-16) • **Earth in Space** • SG: L01 (pp2-11) • SG: L02 (pp12-21) • SG: L04 (pp42-61) • SG: L11 (pp146-159) • SG: L12 (pp160-173) • SG: L17 (pp268-289) • SG: L19 (pp312-323) • TG: L01 (pp3-10) • TG: L02 (pp11-20) • TG: L04 (pp37-52) • TG: L11 (pp159-180) • TG: L12 (pp181-196) • TG: L17 (pp269-276) • TG: L19 (pp287-292) • **Plate Tectonics** • TG: Ses03 (pp43-55)
GRADE LEVEL EXPECTATION	**1.3.2.**	Describe how scientists have acquired knowledge about components of our Solar System. Recognize the importance of people and technologies that have led to our current understanding of space. • **Catastrophic Events** • SG: L01 (pp2-11) • TG: L01 (pp3-16) • **Earth in Space** • SG: L08-10 (pp102-145) • SG: L13-17 (pp174-289) • SG: L20 (pp324-333) • TG: L02 (pp11-20) • TG: L05.Exts (p64) • TG: L07.Exts (pp92-93) • TG: L08-10 (pp97-158) • TG: L13-17 (pp197--276) • TG: L20 (pp293-308) • **Electrical Energy and Circuit Design** • TG: L19.Exts (pp275-276) • **Living with a Star** • TG: Act03 (pp61-84) • **Light** • SG: L16 (pp166-185) • SG: L22 (pp244-251) • TG: L22.Exts (pp310-311) • **Messages From Space** • TG: Act01 (pp6-25) • TG: Act05 (pp96-123) • **Moons of Jupiter** • TG: Act01 (pp7-17) • TG: Act04 (pp41-51) • TG: Act05 (pp53-64) • **More Than Magnifiers** • TG: Act03 (pp23-28)
CONTENT STANDARD	**DE.2.**	**Materials and Their Properties**
PERFORMANCE	**2.1.**	Enduring Understanding: The structures of materials determine their properties.

INDICATOR / GLE		
GRADE LEVEL EXPECTATION	2.1.1.	Conduct simple investigations in which a variety of materials (sand, water, light colored materials, dark colored materials) are exposed to light and heat energy. Measure the change in temperature of the material and describe any changes that occur in terms of the physical properties of the material. • **Color Analyzers** • TG: Act04 (pp31-37) • **Chemical Reactions** • TG: Exts (pp22-23) • **Catastrophic Events** • SG: L03-05 (pp26-67) • SG: L20-22 (pp224-251) • TG: L03-05 (pp27-68) • TG: L20-22 (pp279-316) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Human Body Systems** • TG: L12.Exts (pp147-148) • TG: L13.Exts (p158) • TG: L22.Exts (p258) • **Light** • SG: L05 (pp48-57) • SG: L10 (pp108-115) • SG: L11 (pp116-131) • TG: L05 (pp59-72) • TG: L10.Exts (p124) • **Ocean Currents** • TG: Act03 (pp47-69) • TG: Act05 (pp85-93) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L13 (pp143-152) • TG: L18 (pp193-208) • TG: L22.Exts (p270)
CONTENT STANDARD	DE.3.	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.1.	Enduring Understanding: Energy takes many forms. These forms can be grouped into types of energy that are associated with the motion of mass (kinetic energy) and types of energy associated with the position of mass and energy fields (potential energy).
GRADE LEVEL EXPECTATION	3.1.1.	Explain that kinetic energy is the energy an object has because of its motion and identify that kinetic energy depends upon the object's speed and mass. • **Electrical Energy and Circuit Design** • SG: L09 (pp94-103) • TG: L09 (pp123-142)

		• **Energy, Machines, and Motion** • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L20 (pp200-213) • TG: L01 (pp3-22) • TG: L09 (pp99-106) • TG: L20 (pp235-238) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	3.1.2.	Design and carry out investigations to determine how changing the mass of an object or changing its speed changes its kinetic energy. • **Earth in Space** • TG: L15 (pp221-244) • **Electrical Energy and Circuit Design** • SG: L09 (pp94-103) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L20 (pp200-213) • SG: L21 (pp214-225) • TG: L01 (pp3-22) • TG: L09 (pp99-106) • TG: L18.Exts (p224) • TG: L20 (pp235-238) • TG: L21 (pp239-246)
GRADE LEVEL EXPECTATION	3.1.4.	Explain that the mechanical energy of an object is the sum of its kinetic energy and its potential energy at any point in time. Identify the mechanical energy of objects in different circumstances and identify whether the mechanical energy consists of KE, PE or both (i.e., a ball at rest at the top of an incline and in its motion part of the way down the incline, or a model plane driven by a 'rubber Band' motor, etc.). • **Electrical Energy and Circuit Design** • SG: L07 (pp70-83) • SG: L09 (pp94-103) • TG: L07 (pp93-110) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L14 (pp130-139) • SG: L16 (pp148-161) • SG: L18 (pp174-187) • SG: L20 (pp200-213) • TG: L01-04 (pp3-46) • TG: L09 (pp99-106) • TG: L14 (pp167-176) • TG: L15.Exts (pp180-181) • TG: L16 (pp185-202) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • **Light** • TG: L02 (pp21-36)

GRADE LEVEL EXPECTATION	3.1.5.	Interpret graphical representations of energy to describe how changes in the potential energy of an object can influence changes in its kinetic energy. • **Electrical Energy and Circuit Design** • SG: L07 (pp70-83) • SG: L09 (pp94-103) • TG: L07 (pp93-110) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L14 (pp130-139) • SG: L16 (pp148-161) • SG: L18 (pp174-187) • SG: L20 (pp200-213) • TG: L01-04 (pp3-46) • TG: L09 (pp99-106) • TG: L14 (pp167-176) • TG: L15.Exts (pp180-181) • TG: L16 (pp185-202) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • **Light** • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	3.1.6.	Explain that the mechanical energy of an object is a measure of how much the object can change the motion of other objects or materials (e.g.,, a ball (or air) having a large kinetic energy can do more damage than a ball (or air) with less kinetic energy). • **Electrical Energy and Circuit Design** • SG: L09 (pp94-103) • TG: L09 (pp123-142) • **Energy, Machines, and Motion** • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L20 (pp200-213) • TG: L01 (pp3-22) • TG: L09 (pp99-106) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • TG: L21.Exts (p245)
GRADE LEVEL EXPECTATION	3.1.7.	Use the particle model to explain heat energy as the combined random kinetic energy of particles that make up an object and while the heat energy and temperature of an object are related, they are different quantities. • **Chemical Reactions** T • G: Exts (pp22-23) • **Catastrophic Events** • TG: L03.Exts (pp35-36) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • **Hot Water and Warm Homes from Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Human Body Systems**

		• TG: L12.Exts (pp147-148) • TG: L22.Exts (p258) • **Ocean Currents** • TG: Act03 (pp47-69) • TG: Act05 (pp85-93) • **Properties of Matter** • SG: L05 (pp38-55) • SG: L07 (pp64-73) • TG: L05 (pp49-64) • TG: L07 (pp79-90) • TG: L13.Exts (p148) • TG: L18.Exts (p201)
GRADE LEVEL EXPECTATION	3.1.8.	Describe how the motion of water particles in a glass of cold water is different from the motion of water particles in a glass of hot water. • **Properties of Matter** • TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	3.1.9.	Explain that sound energy is mechanical energy that travels in the form of waves. Use the particle model to explain why sound waves must travel through matter, and that sound travels more effectively through solids and liquids than through gases. Model and describe how sound energy travels through solids, liquids, and gases. • **Catastrophic Events** • TG: L14.Exts (pp193-194)
GRADE LEVEL EXPECTATION	3.1.11.	Explain that heat energy and sound energy both make the particles of a substance move. Use models to explain how the particles respond differently to these types of energy. Use models to explain why sound travels much faster through substances than heat energy does. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • TG: L14.Exts (pp193-194) • **Human Body Systems** • TG: L13.Exts (p158)
GRADE LEVEL EXPECTATION	3.1.12.	Relate that the sun is the source of almost all of the Earth's energy and that this energy travels to the Earth in the form of electromagnetic waves. Explain that the electromagnetic waves from the sun consist of a range of wavelengths and associated energies. • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Energy, Machines, and Motion** • SG: L19 (pp188-199) • TG: L19 (pp229-234) • **Invisible Universe** • TG: Act01-03 (pp15-57)

		• TG: Act05 (pp78-91) • TG: Act02-04 (pp41-99) • **Light** • SG: L09-11 (pp92-131) • TG: L08.Exts (p105) • TG: L09-10 (pp107-126) • TG: L17.Exts (p216)
GRADE LEVEL EXPECTATION	3.1.13.	Explain that the majority of the energy from the sun reaches Earth in the form of infrared, visible, and ultraviolet waves. Use diagrams to demonstrate the differences in different types of electromagnetic waves. • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Energy, Machines, and Motion** • SG: L19 (pp188-199) • TG: L19 (pp229-234) • **Invisible Universe** • TG: Act01-03 (pp15-57) • TG: Act05 (pp78-91) • TG: Act02-04 (pp41-99) • **Light** • SG: L09-11 (pp92-131) • TG: L08.Exts (p105) • TG: L09-10 (pp107-126) • TG: L17.Exts (p216)
GRADE LEVEL EXPECTATION	3.1.14.	Plan and conduct an experiment to identify the presence of UV and IR waves in sunlight or other sources of electromagnetic waves. Use evidence to explain the presence of each. • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Energy, Machines, and Motion** • SG: L19 (pp188-199) • TG: L19 (pp229-234) • **Invisible Universe** • TG: Act01-03 (pp15-57) • TG: Act05 (pp78-91) • TG: Act02-04 (pp41-99) • **Light** • SG: L09-11 (pp92-131) • TG: L08.Exts (p105) • TG: L09-10 (pp107-126) • TG: L17.Exts (p216)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.2.	Enduring Understanding: Changes take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the different forms of energy.
GRADE LEVEL EXPECTATION	3.2.1.	The force of gravity can act across very large distances of space. Through the force of gravity planets pull on their moons, and pull on each other. The sun pulls on all planets, moons and other celestial bodies in the solar system. Use an understanding of how forces change the motion of objects to explain how gravity is responsible for creating the orbital motion of planets and moons.

		• **Earth, Moon, and Stars** • TG: Act02 (pp9-16) • SG: L02 (pp12-21) • SG: L05 (pp62-73) • SG: L06 (pp74-87) • SG: L14--16 (pp200--265) • SG: L22 (pp340-343) • TG: L02 (pp11-20) • TG: L05 (pp53-72) • TG: L06 (pp73-82) • TG: L14-16 (pp209-268) • TG: L22 (pp311-326) • **Energy, Machines, and Motion** • TG: L05.Exts (pp53-54)
GRADE LEVEL EXPECTATION	**3.2.2.**	Explain that the transfer of energy from one object to another is caused by the exertion of a force. Create an energy chain to show how forces can change the mechanical energy of an object. Describe how the distance over which the forces act will influence the amount of energy transferred (and when appropriate, the amount of energy transformed). • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-12 (pp84-133) • SG: L15-18 (pp156--195) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-18 (pp213-262) • **Energy, Machines, and Motion** • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L20 (pp200-213) • TG: L01 (pp3-22) • TG: L09 (pp99-106) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	**3.2.3.**	Give examples of how mechanical energy can be transferred to (or away from) an object, and describe the changes that can take place in the motion of the object because of this energy transfer, (e.g., pulling on a trailer to start it moving or using friction to slow an object and bring it to rest). • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-12 (pp84-133) • SG: L15-18 (pp156--195) • TG: L01 (pp3-22) • TG: L02 (pp23-36)

		• TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-18 (pp213-262) • **Energy, Machines, and Motion** • SG: L09 (pp82-91) • SG: L10 (pp92-97) • SG: L20 (pp200-213) • TG: L01 (pp3-22) • TG: L09 (pp99-106) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • TG: L02 (pp21-36)
GRADE LEVEL EXPECTATION	3.2.4.	Use diagrams to trace and describe the transfer of energy through a physical system (for example, the erosion effects of water flowing down an unprotected slope). • **Environmental Detectives** • TG: Act04 (pp91-111) • **Earth in Space** • SG: L13 (pp174-199) • TG: L13 (pp197-208) • **Energy, Machines, and Motion** • SG: L14 (pp130-139) • SG: L16 (pp148-161) • SG: L18 (pp174-187) • TG: L14 (pp167-176) • TG: L15.Exts (pp180-181) • TG: L16 (pp185-202) • **Human Body Systems** • TG: L13.Exts (p158) • **Invisible Universe** • TG: Act05 (pp78-91) • **River Cutters** • TG: Ses02 (pp27-34) • TG: Ses06 (pp59-65)
GRADE LEVEL EXPECTATION	3.2.6.	Explain that the frequency and amplitude are two characteristics of waves that determine the mechanical energy carried and delivered by a sound wave per unit of time. Use diagrams to explain how each of these properties will influence the KE of the particles in the substance when a sound wave passes through the substance. • **Catastrophic Events** • TG: L14.Exts (pp193-194)
GRADE LEVEL EXPECTATION	3.2.7.	The energy delivered by a wave depends on more than just the frequency. Give an example of a high frequency sound wave that delivers small quantities of energy every second and explain how this is possible. Give an example of a low frequency sound wave that delivers large quantities of energy every second and explain how this is possible. • **Catastrophic Events** • SG: L12 (pp134-153) • SG: L14 (pp164-169) • TG: L11.Exts (p157)

		• TG: L12 (pp163-176) • TG: L14 (pp187-196) • **Light** • SG: L07 (pp68-81) • SG: L09 (pp92-107) • TG: L07.Exts (p92) • TG: L09 (pp107-118) • TG: L19.Exts (p257)
GRADE LEVEL EXPECTATION	3.2.9.	Use the particle model to describe the difference between heat energy transfer in solids and heat energy transfer in liquids and gases (i.e., the differences between conduction and convection). • **Convection: A Current Event** • TG: Exts (pp27-29) • TG: Ses01-03 (pp5--26) • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • **Human Body Systems** • TG: L13.Exts (p158) • **Properties of Matter** • SG: L05 (pp38-55) • TG: L02.Exts (p21) • TG: L07.Exts (p86) • TG: L08.Exts (p96) • TG: L12.Exts (p140) • TG: L14.Exts (p157) • TG: L15.Exts (p166)
GRADE LEVEL EXPECTATION	3.2.10.	Use the particle model to explain why heat energy is always transferred from materials at higher temperatures to materials at lower temperatures. Explain why heat energy transfer ceases when the equilibrium temperature is reached. Explain that when this temperature is reached, the materials are in thermal equilibrium. • **Catastrophic Events** • SG: L03-05 (pp26--67) • SG: L20-22 (pp224-251) • TG: L03-05 (pp27-68) • TG: L20-22 (pp279-316) • **Human Body Systems** • TG: L13.Exts (p158) • **Light** • TG: L10.Exts (p124) • **Properties of Matter** • SG: L05-08 (pp38-77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • TG: L02.Exts (p21) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L12.Exts (p140) • TG: L13 (pp143-152) • TG: L14.Exts (p157) • TG: L15.Exts (p166) • TG: L18 (pp193-208)

		• TG: L22.Exts (p270)
GRADE LEVEL EXPECTATION	3.2.11.	Conduct simple investigations to demonstrate that heat energy is transferred from one material to another in predictable ways (from materials at higher temperatures to materials at lower temperatures), until both materials reach the same temperature. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • **Electrical Energy and Circuit Design** • TG: L01.Exts (p16) • **Human Body Systems** • TG: L13.Exts (p158)
GRADE LEVEL EXPECTATION	3.2.12.	Explain how the addition or removal of heat energy can change an object's temperature or its physical state. Conduct simple investigations involving changes of physical state and temperature. Relate that there is no change in temperature when a substance is changing state. • **Chemical Reactions** • TG: Exts (pp22-23) • **Catastrophic Events** • SG: L03-05 (pp26--67) • SG: L20-22 (pp224--251) • TG: L03-05 (pp27--68) • TG: L20-22 (pp279--316) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • **Hot Water and Warm Homes from Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Human Body Systems** • TG: L12.Exts (pp147-148) • TG: L13.Exts (p158) • TG: L22.Exts (p258) • **Light** • TG: L10.Exts (p124) • **Ocean Currents** • TG: Act03 (pp47-69) • TG: Act05 (pp85-93) • **Properties of Matter** • SG: L05 -08(pp38--77) • SG: L13 (pp112-115) • SG: L18 (pp150-161) • SG: L25 (pp224-229) • TG: L05-08 (pp49-100) • TG: L11.Exts (p132) • TG: L13 (pp143-152) • TG: L18 (pp193-208) • TG: L22.Exts (p270) • TG: L25 (pp303-312)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	3.3.	Enduring Understanding: Energy readily transforms from one form to another, but these transformations are not always reversible. The details of these transformations depend upon

		the initial form of the energy and the properties of the materials involved. Energy may transfer into or out of a system and it may change forms, but the total energy cannot change.
GRADE LEVEL EXPECTATION	3.3.1.	Identify that energy can exist in several forms, and when it changes from one form into another the process is called energy transformation. • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L07-10 (pp70-117) • SG: L12 (pp122-133) • SG: L15-19 (pp156--209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L07 –10 (pp93-156) • TG: L12 (pp169-180) • TG: L15-19 (pp213--276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12--35) • SG: L10 (pp92-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199) • SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02-04 (pp23--46) • TG: L09 (pp99-106) • TG: L10 (pp107-130) • TG: L17 (pp203-216) • TG: L19-22 (pp229--254) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • SG: L26 (pp294-297) • TG: L02 (pp21-36) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	3.3.2.	Explain that energy transformation and energy transfer are different processes, and that energy transformations can take place during an energy transfer. Give examples of energy transformations that take place during an energy transfer. • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-19 (pp156--209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111--156) • TG: L12 (pp169-180) • TG: L15-19 (pp213-276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-35) • SG: L10 (pp92-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199)

		• SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02 (pp23-30) • TG: L03 (pp31-36) • TG: L04 (pp37-46) • TG: L09 (pp99-106) • TG: L10 (pp107-130) • TG: L17 (pp203-216) • TG: L19-22 (pp229-234) • TG: L20 (pp235-254) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • SG: L26 (pp294-297) • TG: L02 (pp21-36) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	**3.3.3.**	Give examples of energy transfers that do not include energy transformations. Give examples of energy transformations that take place without any energy transfer. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • TG: L03 (pp27-44) • TG: L04 (pp45-56) • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84-117) • SG: L12 (pp122-133) • SG: L15-19 (pp156--209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10 (pp111-156) • TG: L12 (pp169-180) • TG: L15-19 (pp213--276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12--35) • SG: L10 (pp92-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199) • SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02-04 (pp23--46) • TG: L09 (pp99-106) • TG: L10 (pp107-130) • TG: L17 (pp203-216) • TG: L19-22 (pp229--254) • **Human Body Systems** • TG: L13.Exts (p158) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • SG: L26 (pp294-297)

		• TG: L02 (pp21-36) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	**3.3.4.**	Use energy chains to trace the flow of energy through physical systems. Indicate the energy transfers and the energy transformations that are involved in the processes (e.g., the lighting of an electric lamp in a region serviced by a hydroelectric (or coal fueled) electric power plant, or the sediment that clouds a stream after a heavy rainfall). • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L05 (pp54-67) • SG: L13 (pp154-163) • TG: L03 (pp27-44) • TG: L05 (pp57-68) • TG: L05.Exts (p62) • TG: L13 (pp177-186) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83--146) • **Electrical Energy and Circuit Design** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L05 (pp46-57) • SG: L08-10 (pp84--117) • SG: L12 (pp122-133) • SG: L15-19 (pp156-209) • TG: L01 (pp3-22) • TG: L02 (pp23-36) • TG: L05 (pp61-76) • TG: L08-10pp111-156) • TG: L12 (pp169-180) • TG: L15-19 (p213--276) • **Energy, Machines, and Motion** • SG: L02-04 (pp12-19) • SG: L10 (pp92-97) • SG: L17 (pp164-173) • SG: L19 (pp188-199) • SG: L20 (pp200-213) • SG: L22 (pp226-236) • TG: L02-04 (pp23--46) • TG: L09 (pp99-106) • TG: L10 (pp107-130) • TG: L17 (pp203-216) • TG: L19 (pp229-234) • TG: L20 (pp235-238) • TG: L21 (pp239-246) • TG: L22 (pp247-254) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37) • **Light** • SG: L02 (pp20-31) • SG: L07 (pp68-81) • SG: L26 (pp294-297)

		• TG: L02 (pp21-36) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	3.3.5.	Recognize that when light enters an eye, the energy carried by the light waves carries information and allows living things to see. • **Light** • SG: L24 (pp266-283)
GRADE LEVEL EXPECTATION	3.3.6.	Trace the flow of the energy carried by the light when the light strikes a material and is reflected from, transmitted through, and/or absorbed by the material. Describe the energy transfers and transformations that take place when light energy is absorbed by a material. • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act04 (pp31-37) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Light** • SG: L01 (pp2-19) • SG: L03 (pp32-39) • SG: L05 (pp48-57) • SG: L06 (pp58-67) • SG: L08 (pp82-91) • SG: L10 (pp108-115) • SG: L11 (pp116-131) • SG: L14 –20 (pp144-227) • SG: L24 (pp266-283) • SG: L26 (pp294-297) • TG: L01 (pp3-20) • TG: L03 (pp37-48) • TG: L05 (pp59-72) • TG: L06 (pp73-82) • TG: L08 (pp99-106) • TG: L10 (pp119-126) • TG: L14-20 (pp169--294) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	3.3.7.	Conduct investigations to show that materials can absorb some frequencies of electromagnetic waves, but reflect others or allow them to transmit through the material. Use this selective absorption process to explain how objects obtain their color, how materials like sunscreen can serve to protect us from harmful electromagnetic waves, and how selective absorption contributes to the Greenhouse Effect. • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act01-04 (pp5--37) • **Catastrophic Events** • SG: L03 (pp26-41) • TG: L03 (pp27-44) • TG: L08.Exts (p108) • **Earth in Space** • SG: L07 (pp88-101) • SG: L17 (pp268-289) • SG: L19 (pp312-323)

		• TG: L07 (pp83-96) • TG: L17 (pp269-276) • TG: L19 (pp287-292) • **Global Warming and the Greenhouse Effect** • TG: Ses01-08 (pp5--124) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses05 (pp39-41) • **Light** • SG: L01 (pp2-19) • SG: L03 (pp32-39) • SG: L05 (pp48-57) • SG: L06 (pp58-67) • SG: L08-12 (pp82-137) • SG: L14-20 (pp144-227) • SG: L24 (pp266-283) • SG: L26 (pp294-297) • TG: L01 (pp3-20) • TG: L03 (pp37-48) • TG: L05 (pp59-72) • TG: L06 (pp73-82) • TG: L08-12 (pp99-152) • TG: L14-20 (pp169-294) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	**3.3.8.**	Trace what happens to the energy from the Sun when it reaches Earth and encounters various materials, such as, atmosphere, oceans, soil, rocks, plants, and animals. Recognize that these materials absorb, reflect and transmit the electromagnetic waves coming from the sun differently. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L05 (pp54-67) • SG: L13 (pp154-163) • TG: L03 (pp27-44) • TG: L05 (pp57-68) • TG: L05.Exts (p62) • TG: L13 (pp177-186) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83-146) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37)
GRADE LEVEL EXPECTATION	**3.3.9.**	Conduct investigations to determine how the physical properties of materials (e.g., size, shape, color, texture, hardness) can account for the effect the materials have on sunlight and the degree of change observed in the materials (e.g., dark cloth absorbs more heat than light cloth, clear water transmits more light than murky water, and polished materials reflect more light than dull materials). • **Bubble-ology** • TG: Act05 (pp35-39) • **Color Analyzers** • TG: Act01-04 (pp5--37) • **Catastrophic Events**

		• SG: L03 (pp26-41) • TG: L03 (pp27-44) • TG: L08.Exts (p108) • **Earth in Space** • SG: L07 (pp88-101) • TG: L07 (pp83-96) • **Invisible Universe** • TG: Act02 (pp26-38) • **Light** • SG: L01-20 (pp2--227) • SG: L24 (pp266-283) • SG: L26 (pp294-297) • TG: L01-10 (pp3-126) • TG: L13- (pp153- -294) • TG: L23.Exts (p318) • TG: L26 (pp349-367)
GRADE LEVEL EXPECTATION	**3.3.10.**	Use the properties of water and soil to explain how uneven heating of Earth's surface can occur. Conduct an investigation that shows how water and soil are heated unequally by sunlight. Describe how this can be used to explain unequal heating of the Earth's surface, producing atmospheric movements that influence weather. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L05 (pp54-67) • SG: L13 (pp154-163) • TG: L03 (pp27-44) • TG: L05 (pp57-68) • TG: L13 (pp177-186) • **Earth in Space** • SG: L07-09 (p88-127) • TG: L07-09 (pp83-146) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37)
CONTENT STANDARD	**DE.3.**	**Energy and Its Effects**
PERFORMANCE INDICATOR / GLE	**3.4.**	Enduring Understanding: People utilize a variety of resources to meet the basic and specific needs of life. Some of these resources cannot be replaced. Other resources can be replenished or exist in such vast quantities they are in no danger of becoming depleted. Often the energy stored in resources must be transformed into more useful forms and transported over great distances before it can be helpful to us.
GRADE LEVEL EXPECTATION	**3.4.1.**	Identify different forms of alternative energy (i.e., solar, wind, ocean waves, tidal and hydroelectric systems). Research and report on the use of this alternative form of energy. Discuss and compare findings to describe the advantages and disadvantages of different kinds of alternative energy. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L04 (pp42-53) • SG: L06 (pp68-79) • SG: L07 (pp80-95) • TG: L03 (pp27-44) • TG: L03.Exts (pp35-36) • TG: L04 (pp45-56)

		• TG: L06 (pp69-82) • TG: L07 (pp83-102) • TG: L19.Exts (pp274-275) • TG: L24.Exts (pp337-338) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83-146) • **Electrical Energy and Circuit Design** • SG: L19 (pp196-209) • TG: L01.Exts (p16) • TG: L19 (pp263-276) • **Energy, Machines, and Motion** • SG: L08 (pp72-81) • TG: L04.Exts (pp41-42) • **Hot Water and Warm Homes from Sunlight** • TG: Ses01-05 (pp7--41) • **Light** • SG: L02 (pp20-31)
CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	**4.1.**	Enduring Understanding: Observable, predictable patterns of movement in the Sun, Earth, Moon system occur because of gravitational interaction and energy from the Sun.
GRADE LEVEL EXPECTATION	**4.1.1.**	Describe how scientists have historically confirmed that the Earth is round, not flat. • **Catastrophic Events** • SG: L10 (pp114-119) • SG: L14 (pp164-169) • SG: L17 (pp194-197) • SG: L18 (pp200-209) • TG: L10 (pp143-148) • TG: L14 (pp187-196) • TG: L17 (pp233-256) • TG: L18 (pp257-264) • **Earth, Moon, and Stars** • TG: Act02 (pp9-16) • **Earth in Space** • SG: L01 (pp2-11) • SG: L02 (pp12-21) • SG: L04 (pp42-61) • SG: L11 (pp146-159) • SG: L12 (pp160-173) • SG: L17 (pp268-289) • G: L19 (pp312-323) • TG: L01 (pp3-10) • TG: L02 (pp11-20) • TG: L04 (pp37-52) • TG: L11 (pp159-180) • TG: L12 (pp181-196) • TG: L17 (pp269-276) • TG: L19 (pp287-292) • **Plate Tectonics** • TG: Ses03 (pp43-55)
GRADE LEVEL EXPECTATION	**4.1.2.**	Analyze data on sunrise and sunset times (in terms of length of daylight) and describe patterns. Explain

		the reason for the patterns by using models or computer simulations of the Earth and Sun. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • TG: L07.Exts (p95) • **Earth, Moon, and Stars** • TG: Act05 (pp33-40) • TG: Act06 (pp40-52) • **Earth in Space** • SG: L02-04 (pp12--61) • SG: L06 (pp74-87) • SG: L08 (pp102-121) • TG: L02-04 (pp11-52) • TG: L06 (pp73-82) • TG: L08 (pp97-120) • **The Real Reasons for the Seasons** • TG: Act02 (pp22-28) • TG: Act06-08 (pp65--88)
GRADE LEVEL EXPECTATION	**4.1.3.**	Using internet, newspaper, and actual observations of the night sky for at least two months, collect data on the Moon's appearance, and moonrise and moonset times. Analyze the data to describe the observable patterns (phases). Explain why the Moon's appearance changes in a repeating cyclical pattern. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03-066 (pp17--52) • **Earth in Space** • SG: L02-06 (pp12--87) • SG: L08 (pp102-121) • SG: L16 (pp244-265) • TG: L02-06 (pp11-82) • TG: L08 (pp97-120) • TG: L16 (pp245-268) • **Moons of Jupiter** • TG: Act03 (pp31-39) • **The Real Reasons for the Seasons** • TG: Act02 (pp22-28) • TG: Act06-08 (pp65--88)
GRADE LEVEL EXPECTATION	**4.1.4.**	Use models to describe how the relative positions of the Sun, Moon, and Earth account for Moon phases, eclipses, and tides. • **Catastrophic Events** • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L07 (pp83-102) • **Earth, Moon, and Stars**

		• TG: Act03 (pp17-24) • TG: Act04 (pp25-32) • **Earth in Space** • SG: L01-09 (pp2-127) • SG: L16 (pp244-265) • TG: L01-09 (pp3--146) • TG: L16 (pp245-268) • **Invisible Universe** • TG: Act04 (pp58-77) • **Light** • SG: L05 (pp48-57) • TG: L05 (pp59-72) • **Moons of Jupiter** • TG: Act03 (pp31-39) • **The Real Reasons for the Seasons** • TG: Act03 (pp29-48) • TG: Act06 (pp65-71) • TG: Act07 (pp73-79) • TG: Act08 (pp81-88) • **Stories in Stone** • TG: Ses02 (pp23-31)
GRADE LEVEL EXPECTATION	**4.1.5.**	Describe how the relative positions of the Earth, Moon and Sun can cause high and low tides, and unusually high or low tides. • **Earth, Moon, and Stars** • TG: Act04 (pp25-32) • **Earth in Space** • SG: L16 (pp244-265) • TG: L16 (pp245-268) • **Moons of Jupiter** • TG: Act03 (pp31-39)
CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	**4.2.**	Enduring Understanding: All objects in the Solar System orbit the Sun and have distinctive physical characteristics and orderly motion.
GRADE LEVEL EXPECTATION	**4.2.1.**	Demonstrate an understanding of the components of our Solar System and their characteristics, including the Moon, the Sun, the planets and their moons, extra-solar planets, and smaller objects such as asteroids and comets. Construct scale models of the Solar System in order to describe the relative sizes of planets and their distances from the Sun. • **Earth, Moon, and Stars** • TG: Act03 (pp17-24) • **Earth in Space** • SG: L01-22 (pp2-343) • TG: L01-22 (pp3--326) • **Energy, Machines, and Motion** • TG: L05.Exts (pp53-54) • **Living with a Star** • TG: Act01 (pp15-38) • TG: Act02 (pp41-58) • TG: Act06 (pp113-131) • **Light** • SG: L02 (pp20-31) • **Messages From Space** • TG: Act02 (pp27-45)

		• TG: Act03 (pp46-87) • TG: Act05 (pp96-123) • **Moons of Jupiter** • TG: Act02 (pp19-29)
GRADE LEVEL EXPECTATION	**4.2.2.**	Use a variety of resources (e.g., NASA photographs, computer simulations) to compare and contrast the physical properties (i.e., temperature, size, composition, surface features) of planets. • **Earth in Space** • SG: L10 (pp130-145) • SG: L11 (pp146-159) • SG: L13-16 (pp174--265) • TG: L10 (pp147-158) • TG: L11 (pp159-180) • TG: L13-16 (pp197--268) • **Messages From Space** • TG: Act03 (pp46-87) • **Moons of Jupiter** • TG: Act04 (pp41-51)
GRADE LEVEL EXPECTATION	**4.2.3.**	Demonstrate an understanding of the motion of the bodies in our Solar System. Use models, charts, illustrations, and other suitable representations to predict and describe regular patterns of motion for most objects in the Solar System. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03-06 (pp17--52) • **Earth in Space** • SG: L02-08 (pp12-121) • SG: L12 (pp160-173) • SG: L14-17 (pp200-289) • SG: L22 (pp340-343) • TG: L02-08 (pp11-120) • TG: L12 (pp181-196) • TG: L14-17 (pp209-276) • TG: L22 (pp311-326) • **Invisible Universe** • TG: Act04 (pp58-77) • **Light** • SG: L05 (pp48-57) • TG: L05 (pp59-72) • **Moons of Jupiter** • TG: Act01 (pp7-17) • **The Real Reasons for the Seasons** • TG: Act02 (pp22-28) • TG: Act04 (pp49-56) • TG: Act06-08 (pp65-88) • **Stories in Stone** • TG: Ses02 (pp23-31)

GRADE LEVEL EXPECTATION	4.2.4.	Explain how the Sun is the central and largest body in our Solar System and the source of the light energy that hits our planet. Use models to explain how variations in the amount of Sun's energy hitting the Earth's surface results in seasons. • **Catastrophic Events** • SG: L03 (pp26-41) • SG: L07 (pp80-95) • TG: L01.Exts (pp10-11) • TG: L03 (pp27-44) • TG: L07 (pp83-102) • **Earth, Moon, and Stars** • TG: Act03-06 (pp17--52) • **Earth in Space** • SG: L02-08 (pp12-121) • SG: L12 (pp160-173) • SG: L14-17 (pp200-289) • SG: L22 (pp340-343) • TG: L02-08 (pp11-120) • TG: L12 (pp181-196) • TG: L14-17 (pp209-276) • TG: L22 (pp311-326) • **Living with a Star** • TG: Act01 (pp15-38) • TG: Act02 (pp41-58) • TG: Act06 (pp113-131) • **Light** • SG: L02 (pp20-31) • **Messages From Space** • TG: Act02 (pp27-45) • TG: Act03 (pp46-87) • **Organisms-From Macro to Micro** • TG: L10.Exts (pp175-176) • **The Real Reasons for the Seasons** • TG: Act01 (pp17-21) • TG: Act02 (pp22-28) • TG: Act04-08 (pp49-88)
GRADE LEVEL EXPECTATION	4.2.5.	Recognize that the force of gravity keeps planets in orbit around the sun and influences objects on Earth and other planets (i.e., tides, ability of humans to move and function). Differentiate between an object's mass and weight. • **Earth, Moon, and Stars** • TG: Act02 (pp9-16) • **Earth in Space** • SG: L14-16 (pp200-265) • TG: L14-16 (pp209-268) • **Energy, Machines, and Motion** • TG: L05.Exts (pp53-54)
CONTENT STANDARD	**DE.4.**	**Earth in Space**
PERFORMANCE INDICATOR / GLE	4.3.	Enduring Understanding: Technology expands our knowledge of the Solar System.
GRADE LEVEL EXPECTATION	4.3.1.	Describe how scientists have acquired knowledge about components of our Solar System. Recognize the importance of people and technologies that have led to our current understanding of space. • **Catastrophic Events**

		• SG: L01 (pp2-11) • SG: L02 (pp12-25) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • **Earth in Space** • SG: L08-10 (pp102-145) • SG: L13-17 (pp174- -289) • SG: L20 (pp324-333) • TG: L02 (pp11-20) • TG: L05.Exts (p64) • TG: L07.Exts (pp92-93) • TG: L08-10 (pp97--158) • TG: L13-17 (pp197-276) • TG: L20 (pp293-308) • **Electrical Energy and Circuit Design** • TG: L19.Exts (pp275-276) • **Living with a Star** • TG: Act03 (pp61-84) • **Light** • SG: L09 (pp92-107) • SG: L16 (pp166-185) • SG: L22 (pp244-251) • **Messages From Space** • TG: Act01 (pp6-25) • TG: Act05 (pp96-123) • **Moons of Jupiter** • TG: Act01 (pp7-17) • TG: Act04 (pp41-51) • TG: Act05 (pp53-64) • **More Than Magnifiers** • TG: Act03 (pp23-28)
CONTENT STANDARD	**DE.5.**	**Earth's Dynamic Systems**
PERFORMANCE INDICATOR / GLE	**5.2.**	Enduring Understanding: Earth's components form systems. These systems continually interact at different rates of time, affecting the Earth locally and globally.
GRADE LEVEL EXPECTATION	**5.2.1.**	Observe, measure, and predict changes in weather using atmospheric properties (wind speed and direction, cloud cover and type, temperature, dew point, air pressure, and relative humidity). Describe how air pressure and temperature change with increasing altitude and/or latitude. • **Catastrophic Events** • SG: L02-08 (pp12-101) • SG: L24 (pp264-273) • TG: L02-08 (pp17--126) • TG: L24 (pp329-346) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	**5.2.2.**	Explain how uneven heating of Earth's components - water, land, air - produce local and global atmospheric and oceanic movement. Describe how these local and global patterns of movement influence weather and climate. • **Catastrophic Events** • SG: L04 (pp42-53) • SG: L07 (pp80-95)

		• TG: L07 (pp83-102) • **Ocean Currents** • TG: Act02-07 (pp29-140) • **Only One Ocean** • TG: Act01 (pp15-40) • TG: Act02 (pp43-87) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	5.2.3.	Investigate the rate at which different Earth materials absorb heat. Explain how these differences in heat absorption causes air pressure differences that result in convection currents (i.e., local land and sea breezes). • **Catastrophic Events** • SG: L02-08 (pp12-101) • SG: L13 (pp154-163) • SG: L24 (pp264-273) • TG: L02-08 (pp17--126) • TG: L13 (pp177-186) • TG: L24 (pp329-346) • **Earth in Space** • SG: L07-09 (pp88-127) • TG: L07-09 (pp83--146) • **Global Warming and the Greenhouse Effect** • TG: Ses02 (pp17-27) • TG: Ses03 (pp29-57) • **Hot Water and Warm Homes from Sunlight** • TG: Ses03 (pp19-31) • TG: Ses04 (pp33-37) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	5.2.4.	Use a variety of models, charts, diagrams, or simple investigations to explain how the Sun's energy drives the cycling of water through the Earth's crust, oceans, and atmosphere. • **Catastrophic Events** • SG: L06 (pp68-79) • TG: L06 (pp69-82) • **Properties of Matter** • SG: L01 (pp2-13)
GRADE LEVEL EXPECTATION	5.2.5.	Examine maps of ocean currents and trace the origin and flow of such currents to explain the transfer of heat energy. Identify which currents have dominant influence on the Delaware coast. • **Catastrophic Events** • SG: L07 (pp80-95) • TG: L07 (pp83-102) • **Ocean Currents** • TG: Act02-07 (pp29-140) • **Only One Ocean** • TG: Act01 (pp15-40) • TG: Act02 (pp43-87) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL	5.2.6.	Differentiate between weather, which is the condition of the atmosphere at a given time, and climate,

EXPECTATION		which is the weather averaged over a long period of time. • **Catastrophic Events** • SG: L02-04 (pp12--53) • SG: L07 (pp80-95) • TG: L02 (pp17-26) • TG: L03 (pp27-44) • TG: L04.Exts (p54) • TG: L06.Exts (pp77-78) • TG: L07 (pp83-102) • **Earth in Space** • SG: L19 (pp312-323) • TG: L19 (pp287-292) • **Global Warming and the Greenhouse Effect** • TG: Ses01 (pp5-15) • **Human Body Systems** • TG: L22.Exts (p258) • **Light** • TG: L03.Exts (p43)
GRADE LEVEL EXPECTATION	5.2.7.	Discuss the origin and identify characteristics (i.e., air circulation pattern, wind speed, temperature and dew point, and air pressure) of storm systems including hurricanes, Nor' easters, tornadoes, thunderstorms, and mid-latitude cyclones. Explain how these weather events can transfer heat. Describe the environmental, economic, and human impact of these storms. • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3--372) • **Electrical Energy and Circuit Design** • TG: L02.Exts (pp35-36)
GRADE LEVEL EXPECTATION	5.2.9.	Describe how origin affects the temperature and moisture content of an air mass. Describe how the interaction of air masses produces different fronts (warm, cold, and stationary) that influence our weather. • **Catastrophic Events** • SG: L02 (pp12-25) • SG: L03 (pp26-41) • SG: L05-07 (pp54--95) • TG: L02 (pp17-26) • TG: L03 (pp27-44) • TG: L05-07 (pp57-102)
GRADE LEVEL EXPECTATION	5.2.10.	Describe how the formation of clouds is influenced by the dew point, environmental temperature and amount of particles in the air. Explain how various lifting mechanisms affect cloud formation. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L04 (pp42-53) • SG: L06 (pp68-79) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • TG: L04 (pp45-56) • TG: L06 (pp69-82)

GRADE LEVEL EXPECTATION	5.2.11.	Use cloud characteristics (altitude, composition, and form) to predict the weather. Discuss how different cloud types are indicators of weather and weather systems such as frontal systems and hurricanes • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L04 (pp42-53) • SG: L06 (pp68-79) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • TG: L04 (pp45-56) • TG: L06 (pp69-82)
CONTENT STANDARD	DE.5.	Earth's Dynamic Systems
PERFORMANCE INDICATOR / GLE	5.3.	Enduring Understanding: Technology enables us to better understand Earth's systems. It also allows us to analyze the impact of human activities on Earth's systems and the impact of Earth's systems on human activity.
GRADE LEVEL EXPECTATION	5.3.1.	Examine isobars on weather maps to describe how wind (moving air) travels from a region of high pressure to a region of low pressure. Apply this knowledge to explain the cause of wind. • **Catastrophic Events** • SG: L02-08 (pp12-101) • SG: L24 (pp264-273) • TG: L02-08 (pp17126) • TG: L24 (pp329-346) • **Properties of Matter** • TG: L05.Exts (p56)
GRADE LEVEL EXPECTATION	5.3.2.	Record and interpret daily weather measurements over an extended period of time using a variety of instruments (i.e., barometer, anemometer, sling psychrometer, rain gauge, and thermometer) in order to predict and to identify weather patterns. • **Catastrophic Events** • SG: L01 (pp2-11) • SG: L02 (pp12-25) • SG: L06 (pp68-79) • TG: L01 (pp3-16) • TG: L02 (pp17-26) • TG: L06 (pp69-82) • TG: L08.Exts (p108) • TG: L24.Exts (pp337-338) • **Earth in Space** • SG: L09 (pp122-127) • **Hot Water and Warm Homes from Sunlight** • TG: Ses02 (pp13-16) • TG: Ses04 (pp33-37) • **Properties of Matter** • SG: L05 (pp38-55) • SG: L07 (pp64-73) • SG: L18 (pp150-161) • TG: L05 (pp49-64) • TG: L07 (pp79-90) • TG: L18 (pp193-208)

GRADE LEVEL EXPECTATION	5.3.4.	Examine satellite imagery pictures and use these images to identify cloud patterns and storm systems. • **Catastrophic Events** • SG: L01-25 (pp2-282) • TG: L01-25 (pp3-372) • **Electrical Energy and Circuit Design** • TG: L02.Exts (pp35-36) • **Living with a Star** • TG: Act03 (pp61-84) • **Light** • SG: L09 (pp92-107) • SG: L16 (pp166-185)
CONTENT STANDARD	DE.7.	**Diversity and Continuity of Living Things**
PERFORMANCE INDICATOR / GLE	7.1.	Enduring Understanding: Organisms reproduce, develop, have predictable life cycles, and pass on heritable traits to their offspring.
GRADE LEVEL EXPECTATION	7.1.1.	Relate the advantages and disadvantages of different reproductive strategies in terms of energy expenditure per offspring and survival rates of that offspring. • **Chemical Reactions** • TG: Part1 (pp9-14) • TG: Part2 (pp15-21) • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L05 (pp46-63) • SG: L09 (pp106-119) • SG: L14 (pp172-179) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L05 (pp57-72) • TG: L09 (pp151-166) • TG: L12.Exts (p207) • TG: L14 (pp237-252) • TG: L18 (pp293-302)
GRADE LEVEL EXPECTATION	7.1.2.	Research and report on reproductive strategies of different organisms (i.e., broadcast spawning versus nurturing parenting) that allow them to be successful. • **Chemical Reactions** • TG: Part1 (pp9-14) • TG: Part2 (pp15-21) • **Organisms-From Macro to Micro** • SG: L03 (pp28-37) • SG: L05 (pp46-63) • SG: L09 (pp106-119) • SG: L14 (pp172-179) • SG: L18 (pp204-215) • TG: L03 (pp33-48) • TG: L05 (pp57-72) • TG: L09 (pp151-166) • TG: L12.Exts (p207) • TG: L14 (pp237-252) • TG: L18 (pp293-302)

Carolina™ Curriculum Correlation to Delaware Science Content Standards

CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things
PERFORMANCE INDICATOR / GLE	7.2.	Enduring Understanding: The diversity and changing of life forms over many generations is the result of natural selection, in which organisms with adaptive traits survive, reproduce, and pass those traits to offspring.
GRADE LEVEL EXPECTATION	7.2.1.	Recognize that species acquire many of their unique characteristics through biological adaptations, which involve the selection of naturally occurring variations in populations. • **Human Body Systems** • TG: L22.Exts (p258) • **Life Through Time** • TG: Ses05-07 (pp173-204) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L13 (pp158-171) • TG: L06 (pp73-104) • TG: L10.Exts (pp175-176) • TG: L13 (pp219-236) • TG: L18.Exts (pp299-300)
GRADE LEVEL EXPECTATION	7.2.2.	Observe a variety of organisms and explain how a specific trait could increase an organism's chances of survival. • **Life Through Time** • TG: Ses05-07 (pp173-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236)
GRADE LEVEL EXPECTATION	7.2.4.	Conduct a natural selection simulation to demonstrate how physical adaptations (i.e., protective camouflage, long neck for food gathering, muscular legs for running, heavy beak for nut cracking, etc.) have selective advantages for an organism. Research and report on beneficial physical adaptations of a variety of organisms. • **Human Body Systems** • TG: L22.Exts (p258) • **Life Through Time** • TG: Ses02 (pp37-100) • TG: Ses05-07 (pp173-269) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L09 (pp106-119) • SG: L13 (pp158-171) • TG: L06 (pp73-104) • TG: L10.Exts (pp175-176) • TG: L13 (pp219-236) • TG: L18.Exts (pp299-300)
GRADE LEVEL EXPECTATION	7.2.5.	Investigate and discuss how short-term physiological changes of an organism (e.g., skin tanning, muscle development, formation of calluses) differ from long-term evolutionary adaptations (e.g., white coloration of polar bears, seed formation in plants) that occur in populations of organisms over generations. • **Life Through Time** • TG: Ses02-07 (pp37-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236)

		• TG: L19.Exts (pp317-318)
GRADE LEVEL EXPECTATION	7.2.6.	Conduct simulations to investigate how organisms fulfill basic needs (i.e., food, shelter, air, space light/dark, and water) in a competitive environment. Relate how competition for resources can determine survival. • **Acid Rain** • TG: Ses01 (pp7-19) • **Environmental Detectives** • TG: Act05 (pp113-141) • **Earth in Space** • TG: L07.Exts (pp92-93) • **Organisms-From Macro to Micro** • SG: L05 (pp46-63) • SG: L10 (pp120-131) • SG: L14 (pp172-179) • TG: L04.Exts (pp53-54) • TG: L05 (pp57-72) • TG: L06.Exts (pp89-91) • TG: L10 (pp167-184) • TG: L14 (pp237-252) • **Properties of Matter** • SG: L04 (pp30-37)
GRADE LEVEL EXPECTATION	7.2.7.	Examine an assortment of plants and animals and use simple classification keys, based on observable features, to sort and group the organisms. • **Life Through Time** • TG: Ses01-06 (pp13--234) • **Organisms-From Macro to Micro** • SG: L01 (pp2-11) • SG: L04-07 (pp38--93) • SG: L11 (pp132-145) • SG: L16 (pp188-193) • SG: L20 (pp236-243) • TG: L01 (pp3-14) • TG: L05-07 (pp57-130) • TG: L10.Exts (pp175-176) • TG: L11 (pp185-200) • TG: L16 (pp267-280) • TG: L20 (pp331-350)
CONTENT STANDARD	**DE.8.**	**Ecology**
PERFORMANCE INDICATOR / GLE	8.1.	Enduring Understanding: Organisms and their environments are interconnected. Changes in one part of the system will affect other parts of the system.
GRADE LEVEL EXPECTATION	8.1.1.	Survey the diversity of organisms in a local or model ecosystem. Recognizing that a population consists of all individuals of a species that occur together at a given place and time, describe how to estimate and then calculate the size of a large population of a variety of organisms. Chart the diversity of the organisms in the ecosystem. • **Environmental Detectives** • TG: Act05 (pp113-141) • **Only One Ocean** • TG: Act03 (pp89-144) • **Organisms-From Macro to Micro** • SG: L02 (pp12-27)

		• SG: L04 (pp38-45) • TG: L12.Exts (p207)
GRADE LEVEL EXPECTATION	8.1.3.	Describe and explain how factors (i.e., space, food, water, disease) limit the number of organisms an ecosystem can support. • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • TG: L01.Exts (p12) • TG: L05.Exts (pp69-70) • TG: L10.Exts (pp175-176)
GRADE LEVEL EXPECTATION	8.1.4.	Construct a data table or line graph to show population changes of a selected species over time. Describe the population changes portrayed by the graph. • **Environmental Detectives** • TG: Act05 (pp113-141)
GRADE LEVEL EXPECTATION	8.1.5.	Observe graphs or data tables showing both the population growth of a species and the consequences of resource depletion on the population. Analyze the data and explain the effect that may occur from exponential growth of a population (given finite resources). • **Environmental Detectives** • TG: Act05 (pp113-141) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • TG: L01.Exts (p12) • TG: L05.Exts (pp69-70) • TG: L10.Exts (pp175-176)
GRADE LEVEL EXPECTATION	8.1.6.	Investigate and discuss how short-term physiological changes of an organism (e.g., skin tanning, muscle development, formation of calluses) differ from long-term evolutionary adaptations (e.g., white coloration of polar bears, seed formation in plants) that occur in a group of organisms over generations. • **Life Through Time** • TG: Ses02-07 (pp37-269) • **Organisms-From Macro to Micro** • SG: L13 (pp158-171) • TG: L13 (pp219-236)
GRADE LEVEL EXPECTATION	8.1.7.	Investigate local areas, disturbed and undisturbed, that are undergoing succession (i.e., abandoned gardens, ditch banks, and the edge of a forest). Predict how plant communities that grow in the area may change over time and how their presence determines what kinds of animals may move into and out of the areas. • **Organisms-From Macro to Micro** • SG: L12 (pp146-155) • TG: L12 (pp201-218)
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.2.	Enduring Understanding: Matter needed to sustain life is continually recycled among and between organisms and the environment. Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.
GRADE LEVEL EXPECTATION	8.2.1.	Construct food webs and identify the relationships among producers, consumers, and decomposers. • **Earth in Space**

		• TG: L07.Exts (pp92-93) • **Light** • TG: L11.Exts (p131)
GRADE LEVEL EXPECTATION	8.2.2.	Design food webs and trace the flow of matter and energy (beginning with the Sun) through the food web. • **Earth in Space** • TG: L07.Exts (pp92-93) • **Human Body Systems** • SG: L13 (pp110-119) • TG: L13 (pp153-158) • **Light** • SG: L11 (pp116-131) • TG: L11.Exts (p131)
CONTENT STANDARD	DE.8.	Ecology
PERFORMANCE INDICATOR / GLE	8.3.	Enduring Understanding: Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system.
GRADE LEVEL EXPECTATION	8.3.1.	Research and analyze data on human population changes that have occurred in a specific Delaware ecosystem. Discuss reasons for changes in human population and explain how these changes have affected the biodiversity of local organisms and availability of natural resources in the given ecosystem (e.g., habitat loss, water quality, preservation/conservation efforts). • **Environmental Detectives** • TG: Act01 (pp15-31) • **Global Warming and the Greenhouse Effect** • TG: Ses06-08 (pp93-124) • **Ocean Currents** • TG: Act01 (pp9-28) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L13 (pp158-171) • **Properties of Matter** • SG: L12 (pp106-111) • **River Cutters** • TG: Exts (p73)
GRADE LEVEL EXPECTATION	8.3.2.	Identify ways in which invasive species can disrupt the balance of Delaware as well as other ecosystems (i.e., competition for resources including habitat and/or food). Research and report on an invasive species, indicating how this species has altered the ecosystem. • **Environmental Detectives** • TG: Act05 (pp113-141) • **Organisms-From Macro to Micro** • SG: L06 (pp64-81) • SG: L17 (pp194-203)