

Correlation of the STC PROGRAM™ and GEMS® with

Georgia Performance Standards

Grade 8 / Science



Carolina Biological Supply Company

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World-Class Support for Science & Math

Correlation of the **STC PROGRAM™** and **Great Explorations in Math and Science®** With **Georgia Performance Standards**

The following STC PROGRAM™ and GEMS® Units are recommended based on the Georgia Performance Standards. Provided for each grade level, are the units that most strongly align with the content objectives. Other STC PROGRAM™ and GEMS® Units may also match objectives within each grade level.

GRADE	STC PROGRAM™	GEMS®
Kindergarten	<ul style="list-style-type: none"> •Comparing and Measuring •Solids and Liquids 	<ul style="list-style-type: none"> •Eggs, Eggs, Everywhere •Sifting Through Science
1 st Grade	<ul style="list-style-type: none"> •Organisms •Weather 	<ul style="list-style-type: none"> •Ant Homes Under the Ground •Penguins and Their Young
2 nd Grade	<ul style="list-style-type: none"> •Changes •Plant Growth and Development •The Life Cycle of Butterflies 	<ul style="list-style-type: none"> •Buzzing a Hive •Involving Dissolving
3 rd Grade	<ul style="list-style-type: none"> •Animal Studies •Rocks and Minerals •Soils 	<ul style="list-style-type: none"> •On Sandy Shores •Terrarium Habitats
4 th Grade	<ul style="list-style-type: none"> •Ecosystems •Motion and Design •Sound 	<ul style="list-style-type: none"> •Aquatic Habitats •Bubble Festival •Space Science Sequence
5 th Grade	<ul style="list-style-type: none"> •Floating and Sinking •Land and Water •Magnets and Motors •Microworlds 	<ul style="list-style-type: none"> • Microscopic Explorations
6 th Grade	<ul style="list-style-type: none"> • Catastrophic Events • Earth in Space 	<ul style="list-style-type: none"> • Earth, Moon, and Stars • Ocean Currents • Plate Tectonics
7 th Grade	<ul style="list-style-type: none"> • Human Body Systems • Organisms–From Macro to Micro 	<ul style="list-style-type: none"> • Environmental Detectives
8 th Grade	<ul style="list-style-type: none"> • Energy, Machines, and Motion • Properties of Matter 	<ul style="list-style-type: none"> • Color Analyzers • Crime Lab Chemistry • Invisible Universe

CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS

Subject Area: Science

State-Funded Course: Science/Grade 8

Textbook Title: Science and Technology Concepts for Middle Schools™ (STC/MS™) and Great Explorations in Math and Science® (GEMS®)

Publisher: Carolina Biological Supply Company

The Georgia Performance Standards for grades K-12 Science and 9-12 Mathematics may be accessed on-line at <http://www.georgiastandards.org/>.

Standard (Cite Number)	Standard (Cite specific standard)	Where Taught (If print component, cite page number; if non-print, cite appropriate location.)
<p>S8CS1. S8CS1.a.</p>	<p>Habits of Mind Understand the importance of - and keep - honest, clear, and accurate records in science.</p>	<p>STC® Energy, Machines and Motion SG: L10 (pp92-97), L13 (pp120-129), L15 (pp140-147) TG: L04 (pp37-46), L06.Exts (pp68-69) L07 (pp75-84), L10 (pp107-130), L13 (pp157-166) L15 (pp177-184) Light SG: L26 (pp294-297) Properties of Matter SG: L04 (pp30-37), L11 (pp98-105), L13 (pp112-115) L21 (pp186-197), L26 (pp230-235) TG: L04 (pp39-48), L08.Exts (p96), L11 (pp125-134), L13 (pp143-152), L21 (pp241-260), L26 (pp313-332) GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Crime Lab Chemistry TG: Act01-3 (pp7-62) Invisible Universe TG: Act01-5 (pp15-91)</p>

S8CS1.b.	Understand that hypotheses can be valuable even if they turn out not to be completely accurate.	<p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L22 (pp2-236) TG: L01-L22 (pp3-254) Light SG: L06 (pp58-67), L11 (pp116-131) L13-L15 (pp138-165), L18 (pp200-213) L24 (pp266-283) TG: L11 (pp127-136), L13-L15 (pp153-194) L18.Exts (p235) Properties of Matter SG: L03 (pp24-29), L08 (pp74-77), L14 (pp116-121) L15 (pp122-129) TG: L03 (pp27-38), L08 (pp91-100), L14-15 (pp153-168)</p>
<p>S8CS2.</p> <p>S8CS2.a.</p>	<p>Habits of Mind</p> <p>Follow correct procedures for use of scientific apparatus.</p>	<p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L21 (pp2-225) L01-L09 (pp2-83), L11-L26 (pp98-235) Light SG: L01-L26 (pp2-297) TG: L01-L26 (pp3-367) Properties of Matter TG: L01-L26 (pp3-332)</p> <p>GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Crime Lab Chemistry TG: Act01-3 (pp7-62) Invisible Universe TG: Act01-5 (pp15-91)</p>
S8CS2.b.	Demonstrate appropriate techniques in all laboratory situations.	<p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L16 (pp2-161), L18-21 (pp174-225) TG: L01-L16 (pp3-206), L18-21 (pp217-246) Light SG: L01-L26 (pp2-297) TG: L01-L26 (pp3-367) Properties of Matter</p>

<p>S8CS3.c.</p> <p>S8CS3.d.</p> <p>S8CS3.e.</p>	<p>Apply the metric system to scientific investigations that include metric to metric conversions (i.e., centimeters to meters).</p> <p>Decide what degree of precision is adequate, and round off appropriately.</p> <p>Address the relationship between accuracy and precision.</p>	<p>TG: L08.Exts (p96), L13-L14 (pp143-160) L19 (pp209-226), L23-L24 (pp275-302), L25.Exts (pp307-308)</p> <p>GEMS®</p> <p>Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40)</p> <p>Crime Lab Chemistry TG: Act01-3 (pp7-62)</p> <p>Invisible Universe TG: Act01-5 (pp15-91)</p> <p>STC®</p> <p>Energy, Machines and Motion SG: L08 (pp72-81) TG: L08 (pp85-98)</p> <p>Light SG: L04 (pp40-47), L05 (pp48-57), TG: L04 (pp49-58), L06.Exts (p77), L23.Exts (p318)</p> <p>Properties of Matter SG: L14 (pp116-121) TG: L02.Exts (p21), L14 (pp153-160)</p> <p>STC®</p> <p>Energy, Machines and Motion TG: L05 (pp47-58), L06 (pp59-74), L08 (pp85-98)</p> <p>Light SG: L13 (pp138-141). L15 (pp154-165) L26 (pp294-297)</p> <p>TG: L03.Exts (p43), L13 (pp153-168), L15 (pp181-194)</p> <p>Properties of Matter SG: L04 (pp30-37), L13 (pp112-115), L26 (pp230-235) TG: L04 (pp39-48), L13 (pp143-152), L22.Exts (p270) L26 (pp313-332)</p> <p>STC®</p> <p>Light SG: L26 (pp294-297)</p> <p>Properties of Matter SG: L04 (pp30-37), L13 (pp112-115), L26 (pp230-235) TG: L04 (pp39-48), L13 (pp143-152), L26 (pp313-332)</p>
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<p>S8CS3.f.</p>	<p>Use ratios and proportions, including constant rates, in appropriate problems.</p>	<p>STC® Energy, Machines and Motion SG: L09 (pp82-91) TG: L08-10 (pp85-130), L12 (pp147-156) L15 (pp177-184) Light SG: L04 (pp40-47), L13 (pp138-141) TG: L03.Exts (p43), L13 (pp153-168) Properties of Matter SG: L13 (pp112-115) TG: L13 (pp143-152), L25.Exts (pp307-308)</p>
<p>S8CS4. S8CS4.a.</p>	<p>Habits of Mind Use appropriate technology to store and retrieve scientific information in topical, alphabetical, numerical, and keyword files, and create simple files.</p>	<p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L16 (pp2-161), L1-L21 (pp174-225) TG: L01-L13 (pp3-166), L02 (pp23-30), L16 (pp185-202), L17.Exts (p208), L18-21 (pp217-246) Light SG: L010L26 (pp2-297) TG: L01-L26 (pp3-367) Properties of Matter TG: L06.Exts (p74), L11.Exts (p132), L15-L18.Exts (p201), L21.Exts (p251), L23.Exts (p284) GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Crime Lab Chemistry TG: Act01-3 (pp7-62) Invisible Universe TG: Act01-5 (pp15-91)</p>
<p>S8CS4.b.</p>	<p>Use appropriate tools and units for measuring objects and/or substances.</p>	<p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L13 (pp2-129), L16 (pp148-161), L18-21 (pp174-225) TG: L01-L13 (pp3-166), L16 (pp185-202), L18-21 (pp217-246) Light SG: L01-L26 (pp2-297) TG: L01-L26 (pp3-367) Properties of Matter</p>

<p>S8CS4.c.</p>	<p>Learn and use standard safety practices when conducting scientific investigations.</p>	<p>SG: L01-L09 (pp2-83), 11-L26 (pp98-235) TG: L01-L26 (pp3-332)</p> <p>GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Crime Lab Chemistry TG: Act01-3 (pp7-62) Invisible Universe TG: Act01-5 (pp15-91)</p> <p>STC® Energy, Machines and Motion SG: G - (pp237-239, L01-L13 (pp2-129), L16 (pp148-161), L18-21 (pp174-225) TG: L01-L13 (pp3-166), L16 (pp185-202), L18-21 (pp217-246) Light SG: L010L26 (pp2-297) TG: L01-L26 (pp3-367) Properties of Matter SG: L01-L09 (pp2-83), L11-L26 (pp98-235) TG: L01-L09 (pp3-112), L11-L26 (pp125-332)</p> <p>GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Crime Lab Chemistry TG: Act01-3 (pp7-62) Invisible Universe TG: Act01-5 (pp15-91)</p>
<p>S8CS5. S8CS5.a.</p>	<p>Habits of Mind Observe and explain how parts can be related to other parts in a system such as the role of simple machines in complex machines.</p>	<p>STC® Energy, Machines and Motion SG: L01 (pp2-11), L11-13 (pp1600-129) L22 (pp226-236) TG: L01 (pp3-22), L22 (pp247-254) Properties of Matter TG: L25.Exts (pp307-308)</p>

S8CS5.b.	Understand that different models (such as physical replicas, pictures, and analogies) can be used to represent the same thing.	STC® Energy, Machines and Motion TG: L04 (pp37-46) Light SG: L07 (pp68-81), L17 (pp186-199), L19 (pp214-223) TG: L07 (pp83-98), L16.Exts (p203), L17 (pp205-224) L19.Exts (p257), L19 (pp247-274) Properties of Matter TG: L07.Exts (p86, L08.Exts (p96), L12.Exts (p140) L14.Exts (p157), L15.Exts (p166) GEMS® Invisible Universe TG: Act05 (pp78-91)
S8CS6.c.	Organize scientific information in appropriate tables, charts, and graphs, and identify relationships they reveal.	GEMS® Color Analyzers TG: Act01-4 (pp5-40), Exts (pp38-40) Invisible Universe TG: Act01-5 (pp15-91)
S8CS6. S8CS6.a	Habits of Mind Write clear, step-by-step instructions for conducting scientific investigations, operating a piece of equipment, or following a procedure.	STC® Energy, Machines and Motion SG: L03 (pp20-25) TG: L03 (pp31-36)
S8CS6.b.	Write for scientific purposes incorporating information from a circle, bar, or line graph, data tables, diagrams, and symbols.	STC® Energy, Machines and Motion SG: L05 (pp36-47), L09 (pp82-91) TG: L05 (pp47-58), L06 (pp59-74), L08 (pp85-98) L09 (pp99-106), L13 (pp157-166), L15 (pp177-184) Light SG: L01-L26 (pp2-297) TG: L01- (pp3-20), L04-5 (pp49-72), L07 (pp83-98) L09.Exts (p115), L10-L13 (pp119-168) L18-L21 (pp225-304), L24-L26 (pp319-367) Properties of Matter SG: L10 (pp86-97) L24 (pp218-223) TG: L02.Exts (p21), L10 (pp113-124), L22.Exts (p270) L24 (pp295-302)

S8CS6.c.	Organize scientific information in appropriate tables, charts, and graphs, and identify relationships they reveal.	STC® Energy, Machines and Motion SG: L05 (pp36-47), L09 (pp82-91) TG: L05 (pp47-58), L06 (pp59-74), L08 (pp85-98) L09 (pp99-106), L13 (pp157-166), L15 (pp177-184) Light SG: L01 (pp2-19), L04 (pp40-47), L05 (pp48-57) L07 (pp68-81), L10-L13 (pp108-141) L17-L21 (pp186-243), L24-L26 (pp266-297) TG: L01 (pp3-20), L04-5 (pp49-72), L07 (pp83-98) L09.Exts (p115), L10-L13 (pp119-168) L18-L21 (pp225-304). L24-L26 (pp319-367) Properties of Matter SG: L10 (pp86-97), L13-L14 (pp112-121) L19 (pp162-167), L23-L24 (pp208-223) TG: L02.Exts (p21), L08.Exts (p96), L10 (pp113-124) L13-L14 (pp143-160), L19 (pp209-226), L22.Exts (p270), L23-L24 (pp275-302)
S8CS7.	Habits of Mind	
S8CS7.a.	Question claims based on vague attributions (such as 'Leading doctors say...') or on statements made by people outside the area of their particular expertise.	STC® Light SG: L26 (pp294-297) TG: L26 (pp349-367)
S8CS7.b.	Identify the flaws of reasoning in arguments that are based on poorly designed research (e.g., facts intermingled with opinion, conclusions based on insufficient evidence).	STC® Light SG: L26 (pp294-297) TG: L26 (pp349-367)
S8CS7.c.	Question the value of arguments based on small samples of data, biased samples, or samples for which there was no control.	STC® Light SG: L26 (pp294-297) TG: L26 (pp349-367)
S8CS7.d.	Recognize that there may be more than one way to interpret a given set of findings.	STC® Energy, Machines and Motion TG: L08.Exts (pp92-93) Light SG: L12 (pp132-137), L13 (pp138-141)

<p>S8CS8.</p> <p>S8CS8.a.</p> <p>S8CS8.b.</p> <p>S8CS8.c.</p> <p>S8CS9.</p> <p>S8CS9.a.</p>	<p>Habits of Mind</p> <p>When similar investigations give different results, the scientific challenge is to judge whether the differences are trivial or significant, which often requires further study. Even with similar results, scientists may wait until an investigation has been repeated many times before accepting the results as meaningful.</p> <p>When new experimental results are inconsistent with an existing, well-established theory, scientists may pursue further experimentation to determine whether the results are flawed or the theory requires modification.</p> <p>As prevailing theories are challenged by new information, scientific knowledge may change.</p> <p>The Nature of Science</p> <p>Investigations are conducted for different reasons, which include exploring new phenomena, confirming previous results, testing how well a theory predicts, and comparing different theories.</p>	<p>L25 (pp284-293) TG: L12-13 (pp137-168), L25 (pp335-348) Properties of Matter SG: L13-L14 (pp112-121), L19 (pp162-167) L23-L24 (pp208-223) TG: L08.Exts (p96), L13-L14 (pp143-160) L19 (pp209-226), L23-L24 (pp275-302) GEMS® Color Analyzers TG: Act01-4 (pp5-40), Exts (pp38-40) Invisible Universe TG: Act01-5 (pp15-91)</p> <p>STC® Light SG: L26 (pp294-297) TG: L26 (pp349-367)</p> <p>STC® Light SG: L26 (pp294-297) TG: L19.Exts (p257), L26 (pp349-367)</p> <p>STC® Energy, Machines and Motion SG: L02 (pp12-19), L07 (pp62-71), L15 (pp140-147) L09 (pp78-83), L11 (pp98-105), L15 (pp122-129) L19 (pp162-167), L21-23 (pp186-217), L25 (pp224-229) Light TG: L19.Exts (p257)</p> <p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L22 (pp2-236) TG: L01-L22 (pp3-254) Light SG: L01 (pp2-19), L03-L26 (pp32-297)</p>
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<p>S8CS9.b.</p>	<p>Scientific investigations usually involve collecting evidence, reasoning, devising hypotheses, and formulating explanations to make sense of collected evidence.</p>	<p>TG: L01-L26 (pp3-397) Properties of Matter SG: L01-L26 (pp2-235) TG: L01-L26 (pp3-332) GEMS® Color Analyzers TG: Act01-4 (pp5-40), Exts (pp38-40) Invisible Universe TG: Act01-5 (pp15-91)</p> <p>STC® Energy, Machines and Motion SG: G - (pp237-239), L01-L22 (pp2-236) TG: L01-L22 (pp3-254) Light SG: L01 (pp2-19), L03-L26 (pp32-297) TG: L01-L26 (pp3-397) Properties of Matter SG: L01-L26 (pp2-235) TG: L01-L26 (pp3-332) GEMS® Color Analyzers TG: Act01-4 (pp5-40), Exts (pp38-40) Invisible Universe TG: Act01-5 (pp15-91)</p>
<p>S8CS9.d.</p>	<p>Scientists often collaborate to design research. To prevent bias, scientists conduct independent studies of the same questions.</p>	<p>STC® Energy, Machines and Motion TG: L22 (pp247-254) Light SG: L21 (pp230-243) TG: L21 (pp295-304) Properties of Matter SG: L10 (pp86-97) TG: L10 (pp113-124), L11.Exts (p132), L17.Exts (p185) L21.Exts (p251)</p>
<p>S8CS9.e.</p>	<p>Accurate record keeping, data sharing, and replication of results are essential for maintaining an investigator's credibility with other scientists and society.</p>	<p>STC® Light SG: L26 (pp294-297) TG: L26 (pp349-367)</p>

S8CS9.f.	Scientists use technology and mathematics to enhance the process of scientific inquiry.	STC® Energy, Machines and Motion SG: L09 (pp82-91), L16 (pp148-161) TG: L08-L10 (pp85-130), L12 (pp147-156) L15 (pp177-184), L16 (pp185-202) Properties of Matter SG: L13 (pp112-115) TG: L13 (pp143-152), L25.Exts (pp307-308)
S8CS10.	The Nature of Science Reading in All Curriculum Areas: Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas; Read both informational and fictional texts in a variety of genres and modes of discourse; Read technical texts related to various subject areas.	GEMS® Crime Lab Chemistry TG: Exts (pp63-64)
S8CS10.a.	Reading in All Curriculum Areas: Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas; Read both informational and fictional texts in a variety of genres and modes of discourse; Read technical texts related to various subject areas.	
S8CS10.b.	Discussing books: Discuss messages and themes from books in all subject areas; Respond to a variety of texts in multiple modes of discourse; Relate messages and themes from one subject area to messages and themes in another area; Evaluate the merit of texts in every subject discipline; Examine author's purpose in writing; Recognize the features of disciplinary texts.	GEMS® Crime Lab Chemistry TG: Exts (pp63-64)
S8CS10.c.	Building vocabulary knowledge: Demonstrate an understanding of contextual vocabulary in various subjects; Use content vocabulary in writing and speaking; Explore understanding of new words found in subject area texts.	STC® Energy, Machines and Motion SG: G - (pp237-239), G - (pp237-239) Light SG: L04 (pp40-47), L13 (pp138-141) TG: L03.Exts (p43), L13 (pp153-168) Properties of Matter SG: L12 (pp106-111) TG: L12 (pp135-142) GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Crime Lab Chemistry TG: Act01-3 (pp7-62) Invisible Universe TG: Act01-5 (pp15-91)

S8CS10.d.	Establishing context: Explore life experiences related to subject area content; Discuss in both writing and speaking how certain words are subject area related; Determine strategies for finding content and contextual meaning for unknown words.	STC® Energy, Machines and Motion SG: G - (pp237-239) Light SG: G - (pp299-303), L02 (pp20-31) TG: L02 (pp21-36) Properties of Matter SG: G - (pp237-239) GEMS® Color Analyzers TG: Act01-4 (pp5-37), Exts (pp38-40) Invisible Universe TG: Act01-5 (pp15-91)
S8P1. S8P1.a.	Physical Science Distinguish between atoms and molecules.	STC® Light SG: L02 (pp20-31) TG: L02 (pp21-36) Properties of Matter TG: L21.Exts (p251) GEMS® Crime Lab Chemistry TG: Act01-3 (pp7-62)
S8P1.b	Describe the difference between pure substances (elements and compounds) and mixtures.	STC® Properties of Matter SG: L01 (pp2-13), L11-L12 (pp98-111) L14-L15 (pp116-129), L17-L22 (pp140-207) TG: L01 (pp3-14), L11-L12 (pp125-142) L14-L15 (pp153-168), L16.Exts (p178) L17-22 (pp179-274), L23.Exts (p284) GEMS® Crime Lab Chemistry TG: Act01-3 (pp7-62), Exts (pp63-64)
S8P1.c.	Describe the movement of particles in solids, liquids, gases, and plasma states.	STC® Light TG: L10.Exts (p124) Properties of Matter SG: L01 (pp2-13), L03 (pp24-29) L08 (pp74-77), L15-L16 (pp122-139), L26 (pp230-235), TG: L03 (pp27-38), L08 (pp91-100), L15-L16 (pp161-178), L26 (pp313-332)

S8P1.d.	Distinguish between physical and chemical properties of matter as physical (i.e., density, melting point, boiling point) or chemical (i.e., reactivity, combustibility).	STC® Energy, Machines and Motion SG: L02-L03 (pp12-25) TG: L02-L03 (pp23-36) Properties of Matter SG: L20 (pp170-185) TG: L20 (pp227-240)
S8P1.e.	Distinguish between changes in matter as physical (i.e., physical change) or chemical (i.e., development of a gas, formation of precipitate, and change in color).	STC® Properties of Matter SG: L06 (pp56-63, L24 (pp218-223) TG: L06 (pp65-78), L24 (pp295-302)
S8P1.f.	Recognize that there are more than 100 elements and some have similar properties as shown on the Periodic Table of Elements.	STC® Properties of Matter SG: L20-L22 (pp170-207) TG: L20-22 (pp227-274)
S8P1.g.	Identify and demonstrate the Law of Conservation of Matter.	STC® Light TG: L10.Exts (p124) Properties of Matter SG: L25 (pp224-229) TG: L25 (pp303-312)
S8P2. S8P2.a.	Physical Science Explain energy transformation in terms of the Law of Conservation of Energy.	STC® Energy, Machines and Motion SG: L02-4 (pp12-35), L10 (pp92-97), L17 (pp164-173) L19 (pp188-199), L20 (pp200-213), L22 (pp226-236) TG: L02-4 (pp23-46), L09 (pp99-106), L10 (pp107-130) L17 (pp203-216), L19-L22 (pp229-254)
S8P2.b.	Explain the relationship between potential and kinetic energy.	STC® Energy, Machines and Motion SG: L02-L04 (pp12-35), L09 (pp82-91), L10 (pp92-97) L20 (pp200-213), L21 (pp214-225) TG: L01-4 (pp3-46), L09 (pp99-106), L20 (pp235-238) L21 (pp239-246) Light SG: L02 (pp20-31), L07 (pp68-81), L26 (pp294-297) TG: L02 (pp21-36), L26 (pp349-367)

S8P4.	Students will explore the wave nature of sound and electromagnetic radiation.	<p>STC® Light SG: L01-L05 (pp2-57), L07 (pp68-81), L09-11 (pp92-131), L13-14 (pp138-153) L20 (pp224-227) , L26 (pp294-297) TG: L01-L03 (pp3-48), L04.Exts (p54), L07 (pp83-98) L09-10 (pp107-126), L13-14 (pp153-180) L17.Exts (p216), L20 (pp275-294), L23.Exts (p318) L26 (pp349-367)</p>
S8P4.a.	Identify the characteristics of electromagnetic and mechanical waves.	<p>STC® Light SG: L07 (pp68-81), L09 (pp92-107), L07.Exts (p92) L09 (pp107-118), L19.Exts (p257) GEMS® Color Analyzers TG: Act04 (pp31-37) Invisible Universe TG: Act02 (pp26-38)</p>
S8P4.b.	Describe how the behavior of light waves is manipulated causing reflection, refraction diffraction, and absorption.	<p>STC® Light SG: L01-L26 (pp2-297), TG: L01-L26 (pp3-367) Color Analyzers TG: Act04 (pp31-37) GEMS® Invisible Universe TG: Act02 (pp26-38)</p>
S8P4.c.	Explain how the human eye sees objects and colors in terms of wave- lengths.	<p>STC® Light SG: L01 (pp2-19), L08-9 (pp82-107), L11-12(pp116-137) L20 (pp224-227), L24 (pp266-283) TG: L01 (pp3-20), L08-9 (pp99-118) L11-12 (pp127-152), L17.Exts (p216) GEMS® Color Analyzers TG: Act01-4 (pp5-37)</p>

S8P4.d.	Describe how the behavior of waves is affected by medium (such as air, water, solids).	STC® Light SG: L01 (pp2-19), L05-L09 (pp48-107), L11 (pp116-131) L14-L26 (pp144-297) TG: L01 (pp3-20), L03.Exts (p43), L05-6 (pp59-82) L07.Exts (p92), L08-9 (pp99-118), L14-L20 (pp169-294) GEMS® Color Analyzers TG: Act04 (pp31-37)
S8P5. S8P5.a. S8P5.b.	Physical Science Recognize that every object exerts gravitational force on every other object and that the force exerted depends on how much mass the objects have and how far apart they are. Demonstrate the advantages and disadvantages of series and parallel circuits and how they transfer energy.	STC® Energy, Machines and Motion SG: L05 (pp36-47), L06 (pp48-61) L20-L21 (pp200-225) TG: L05 (pp47-58), L20-L211 (pp235-246) STC® Energy, Machines and Motion TG: L07.Exts (p83), L09.Exts (p105) Properties of Matter SG: L20 (pp170-185), L24 (pp218-223) TG: L24 (pp295-302)