A Correlation of the New York State Learning Standards for Mathematics, Science, and Technology and the Science and Technology for Children™ Curriculum

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The following tables are provided to give a quick visual guide to the correlation of the New York State Learning Standards for Mathematics, Science, and Technology with the individual *Science and Technology for Children* ™ (STC™) units of study.

Key to Abbreviations of STC Units

O	Organisms	PGD	Plant Growth and Development	Mw	Microworlds
W	Weather	RM	Rocks and Minerals	E	Ecosystems
SL	Solids and Liquids	CT	Chemical Tests	FC	Food Chemistry
CM	Comparing and Measuring	So	Sound	FS	Floating and Sinking
LCB	The Life Cycle of Butterflies	AS	Animal Studies	EP	Experiments with Plants
S	Soils	LW	Land and Water	MT	Measuring Time
C	Changes	MD	Motion and Design	TP	The Technology of Paper
BW	Balancing and Weighing	EC	Electric Circuits	MM	Magnets and Motors

Recommended Grade Levels for STC Units

The National Science Resources Center (NSRC) recommends that an STC unit not be moved up or down more than one grade level from these recommendations.

1st				2nd				3rd			
O	W	SL	**CM**	**LCB**	S	C	BW	PGD	**RM**	**CT**	**So**

4th				5th				6th			
AS	**LW**	**MD**	FC	Mw	E	FC	FS	EP	MT	TP	MM

Standard 1—Analysis, Inquiry, and Design

Mathematical Analysis

1. Abstraction and symbolic representation are used to communicate mathematically.
W CM C BW PGD AS MD Mw E FS EP MT TP MM

2. Deductive and inductive reasoning are used to reach mathematical conclusions.
All STC Units

3. Critical thinking skills are used in the solution of mathematical problems.
All STC Units

Scientific Inquiry

1. The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.
All STC Units

2. Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.
S C BW RM CT So AS LW MD EC E FC FS EP MT TP MM

3. The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.
All STC Units

Engineering Design

1. Engineering design is an iterative process involving modeling and optimization finding the best solution within given constraints which is used to develop technological solutions to problems within given constraints.
W SL CM LCB S C BW PGD CT So AS LW MD EC E FS EP MT TP MM

Standard 2—Information Systems

All STC units are compatible with this standard; however, STC does not *require* the use of computers, etc.

Standard 3—Mathematics

1. Students use mathematical reasoning to analyze mathematical situations, make conjectures, gather evidence, and construct an argument.
O W CM C BW PGD MD E FS EP MT TP MM

2. Students use number sense and numeration to develop an understanding of the multiple uses of numbers in the real world, the use of numbers to communicate mathematically, and the use of numbers in the development of mathematical ideas.
W CM BW PGD MD Mw E FS EP MT TP MM

3. Students use mathematical operations and relationships among them to understand mathematics.
CM BW PGD MD E EP MM

4. Students use mathematical modeling/multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships.
All STC Units

5. Students use measurement in both metric and English measure to provide a major link between the abstractions of mathematics and the real world in order to describe and compare objects and data.
W CM C BW PGD AS LW MD Mw E FS EP MT TP MM

6. Students use ideas of uncertainty to illustrate that mathematics involves more than exactness when dealing with everyday situations.
CM BW MD FS MT MM

7. Students use patterns and functions to develop mathematical power, appreciate the true beauty of mathematics, and construct generalizations that describe patterns simply and efficiently.
O W SL CM LCB C BW PGD CT So AS LW MD E FC FS EP MT TP MM

Standard 4—Science

Physical Setting

1. The Earth and celestial phenomena can be described by principles of relative motion and perspective.
W MT

2. Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.
W SL CM S C RM LW E FS MT

3. Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.
O W SL CM S C BW RM CT So LW MD Mw E FC FS TP MM

4. Energy exists in many forms, and when these forms change energy is conserved.
W C CT So LW MD EC E FC FS EP MT TP MM

5. Energy and matter interact through forces that result in changes in motion.
SL C BW RM So LW MD FS MT MM

The Living Environment

1. Living things are both similar to and different from each other and nonliving things.
O LCB S PGD AS E FC EP

2. Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.
O LCB S PGD AS E FC EP

3. Individual organisms and species change over time.
O LCB S PGD AS E EP

4. The continuity of life is sustained through reproduction and development.
O LCB S PGD AS E EP

5. Organisms maintain a dynamic equilibrium that sustains life.
O LCB S PGD AS E FC EP

6. Plants and animals depend on each other and their physical environments.
O LCB S PGD AS E FC EP

7. human decisions and activities have had a profound impact on the physical and living environment.
W PGD RM LW MD E EP TP MM

Standard 5—Technology

1. Engineering design is an iterative process involving modeling and optimization used to develop technological solutions to problems within given constraints.
W SL CM LCB S C BW PGD CT So AS LW MD EC E FS EP MT TP MM

2. Technological tools, materials, and other resources should be selected on the basis of safety, cost, availability, appropriateness, and environmental impact; technological processes change energy, information, and material resources into more useful forms.
W CM S C BW So LW MD EC E FS MT TP MM

3. Computers, as tools for design, modeling, information processing, communication, and system control, have greatly increased human productivity and knowledge.

4. Technological systems are designed to achieve specific results and produce outputs, such as products, structures, services, energy, or other systems.
W CM S C BW So LW MD EC E FS MT TP MM

5. Technology has been the driving force in the evolution of society from an agricultural to an industrial to an information base.
W CM MD EC FS MT TP MM

6. Technology can have positive and negative impacts on individuals, society, and the environment and humans have the capability and responsibility to constrain or promote technological development.
W CM S LW MD E TP

7. Project management is essential to ensuring that technological endeavors are profitable and that products and systems are of high quality and built safely, on schedule, and within budget.
LW MD E TP

Standard 6—Interconnectedness: Common Themes

1. Through systems thinking, people can recognize the commonalities that exist among all systems and how parts of a system interrelate and combine to perform specific functions.

All STC Units

2. Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation, or design.

All STC Units

3. The grouping of magnitudes of size, time, frequency, and pressures of other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems.

O W SL CM LCB BW PGD RM AS LW MD Mw E FS EP MT

4. Equilibrium is a state of stability due either to a lack of changes (static equilibrium) or a balance between opposing forces (dynamic equilibrium).

W C BW AS LW MD E FS EP

5. Identifying patterns of change is necessary for making predictions about future behavior and conditions.

LCB S C BW PGD CT So AS LW MD EC Mw E FC FS EP MT TP MM

6. In order to arrive at the best solution that meets criteria within constraints, it is often necessary to make trade-offs.

All STC Units

Standard 7—Interdisciplinary Problem Solving

1. The knowledge and skills of mathematics, science, and technology are used together to make informed decisions and solve problems, especially those relating to issues of science/technology/society, consumer decision making, design, and inquiry into phenomena.

All STC Units

2. Solving interdisciplinary problems involves a variety of skills and strategies, including effective work habits, gathering and processing information; generating and analyzing ideas; realizing ideas; making connections among the common themes of mathematics, science, and technology; and presenting results.

All STC Units