

Course Name: Elementary Science 5th Grade

School Year: 2025-26

Course Purpose and Relevance:

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(a) Introduction.

In Kindergarten through Grade 5 Science, content is organized into recurring strands. The concepts within each grade level build on prior knowledge, prepare students for the next grade level, and establish a foundation for high school courses. In Grade 5, the following concepts will be addressed in each strand.

- A. Scientific and engineering practices. Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, correlative, comparative, or experimental. The method chosen should be appropriate to the grade level and question being asked. Student learning for different types of investigations includes descriptive investigations, which have no hypothesis that tentatively answers the research question and involve collecting data and recording observations without making comparisons; correlative and comparative investigations, which have a hypothesis that predicts a relationship and involve collecting data, measuring variables relevant to the hypothesis that are manipulated, and comparing results; and experimental investigations, which involve processes similar to comparative investigations but in which a hypothesis can be tested by comparing a treatment with a control.
- B. Matter and energy. Students investigate matter expanding their understanding of properties learned in Grade 4 (mass, volume, states, temperature, magnetism, and relative density) to include solubility and the ability to conduct or insulate both thermal and electrical energy. Students observe the combination of substances to make mixtures and develop an understanding of conservation of matter. These concepts lead to the understanding of elements and compounds. Students will build on this understanding in middle school when they learn to determine density and to identify evidence of chemical changes.
- C. Force, motion, and energy. Students investigate equal and unequal forces and the effects these forces have on objects (motion and direction). Additionally, students investigate energy, including mechanical, light, thermal, electrical, and sound. They uncover cycles (e.g., movement of thermal energy), patterns (e.g., behavior of light, including reflection and refraction), and systems through their exploration. Students will build on this understanding in middle school when they begin to use calculations and measurements to study force, motion, and energy through the study of Newton's Laws of Motion.
- D. Earth and space. This strand is focused on identifying recognizable patterns and processes as students learn about Earth's rotation and demonstrate the effects this movement has on Earth's surface, including day and night, shadows, and the rotation of Earth on its axis. Students continue their learning of patterns and processes on Earth while exploring weather, climate, the water cycle, the formation of sedimentary rock and fossil fuels, and the formation of landforms. Finally, students learn ways to manage natural resources to support a healthy environment.
- E. Organisms and environments. This strand focuses on identifying relationships, systems, and cycles within organisms and environments. Students describe the interactions of biotic and abiotic factors in an ecosystem. Students build on their understanding of food webs

from Grade 4 by predicting how ecosystem changes affect the flow of energy. Additionally, they describe how humans impact the ecosystem. Students also learn how organisms' structures help them to survive, and they distinguish between instinctual and learned behaviors in animals. This will set the foundation for Grade 6 where students compare and contrast variations within organisms and how they impact survival. how humans impact the ecosystem. Students also learn how organisms' structures help them to survive, and they distinguish between instinctual and learned behaviors in animals. This will set the foundation for Grade 6 where students compare and contrast variations within organisms and how they impact survival.

Science Support Tips for Busy Parents from the National Science Teachers Association

Do you panic when your child comes home from school asking for help with his or her science fair project? Do you ever wonder how you can help your child learn science? You are not alone. Many parents—especially those who didn't pursue careers in science—may be apprehensive, sometimes even fearful, about this endeavor.

We commend you for your desire to help guide and support your children in their education, specifically in the field of science. Science is a way of understanding the world, a perspective, and a pattern of thinking that begins in the very early years. That is why parent involvement is so important in a child's science education.

Families who explore together nurture great young scientists! Studies show that the family experiences that students bring to school are some of the biggest predictors of success (Hazen and Trefil 1991). With this in mind, the National Science Teachers Association has created the following set of resources for parents:

- **See science everywhere.** Parents can take opportunities to ask, "What would happen if...?" questions or present brainteasers to encourage children to be inquisitive and seek out answers. Children need to know that science isn't just a subject, but it is a way of understanding the world around us.
- **Lead family discussions on science-related topics.** Dinnertime might be an ideal time for your family to have discussions about news stories that are science based, like space shuttle missions, severe weather conditions, or new medical breakthroughs. Over time, children will develop a better understanding of science and how it affects many facets of our lives. Movies and TV shows with science-related storylines are also great topics for discussion. For example: After watching Jurassic Park, you might want to discuss with your children the significance of the name of the movie or how human involvement in natural processes can cause drastic consequences.
- **Encourage girls and boys equally.** Many fathers might be inclined to fix a problem for a daughter without challenging her to find the solution on her own. Many girls are left out of challenging activities simply because of their gender. Be aware that both girls and boys need to be encouraged and exposed to a variety of subjects at a very early age.
- **Do science together.** Children, especially elementary-age children, learn better by investigating and experimenting. Simple investigations done together in the home can

bolster what your child is learning in the classroom. Check with your child's teacher on what your child is currently learning in class and what activities you can explore at home. There are also many books on the market and numerous websites that present ideas for investigations. For example: Using a penny and a water dropper, ask your child to guess how many drops of water will fit on top of it. Ask your child to count the drops as he or she drops them on the penny. Why doesn't the water spill off after a few drops? Water molecules across the surface are attracted to each other. The attraction is strong enough to allow the water to rise above the penny without spilling. At some point, the molecules of water can no longer hold together and spill off the penny.

- **Obtain science resources.** Follow up science discussions, home experiments, or classroom lessons with books, magazines, CDs, and other resources. Science themes will be reinforced through further exploration, and over time your family will have plenty of resources on which to draw.
- **Explore nonformal education sites.** In an informal learning situation—the kind of learning that happens outside the traditional confines of the classroom, at science centers, museums, zoos, and aquariums—children are encouraged to experiment on their own and ask questions about what they are experiencing.
- **Connect science with a family vacation.** Family vacations are a great way to explore science. It could be a hiking trip where you explore nature or a discussion on tides during a beach vacation.
- **Become active in your children's formal education by getting to know the teacher and the curriculum.** Participate in your child's school science program by locating scientists and others to be guest speakers or accompany your child on a field trip to a science-related place.
- **Show excitement for science.**

How to Assist Your Learner at Home:

<https://www.nsta.org/science-resources-parents>

Link to Course TEKS on State website:

<https://teksguide.org/>

Days of Instruction	Date	5th Science
3	Aug 11-15	SEL Development
5	Aug 18-22	Unit 1: Scientific Practices, Themes & Routines BB1: Onward We Go (5.1A-G, 5.2A-D, 5.3A-C, 5.4A-B, 5.5A-G - 8 days)
5	Aug 25-29	Unit 2 - Matter and Energy BB1: Matter (5.6A - 7 days) BB2: Changes to Matter (5.6B, 5.6C, 5.6D - 12 days)
4	Sept 1-5	
5	Sept 8-12	
5	Sept 15-19	
5	Sept 22-26	Tier 2 Instruction
4	Sept 29 -Oct 3	Unit 3 - Force, Motion, and Energy BB1: Force and Motion (5.7AB - 16 days) BB2: Energy Transformation (5.8A - 5 days) BB3: Electricity and Light (5.8B - 9 days)
4	Oct 6-10	
3	Oct 13-17	
5	Oct 20-24	
5	Oct 27-31	
4	Nov 3-7	
5	Nov 10-14	
5	Nov 17-21	Tier 2 Instruction
5	Dec 1-5	Unit 3 - Force, Motion, and Energy BB3: Electricity and Light, cont'd (5.8C - 10 days)
5	Dec 8-12	
5	Dec 15-19	Tier 2 Instruction/SEL Development
4	Jan 5-9	
5	Jan 12-16	
4	Jan 19-23	Unit 4 - Earth's Surface BB1: Changes to Earth's Surface (5.10C - 10 days) BB2: Earth's Processes & Cycles (5.10B, 5.10A - 13 days) BB3: Patterns of the Sky (5.9A - 10 days)
5	Jan 26-30	
5	Feb 2-6	
5	Feb 9-13	
4	Feb 16-20	
5	Feb 23-27	
5	Mar 2-6	Tier 2 Instruction
4	Mar 16-20	Unit 5 - Organisms and Environments BB1: Structures and Functions of Organisms (5.13A - 6 days) BB2: Interactions in Ecosystems (5.12A - 7 days)
5	Mar 23-27	
4	Mar 30 - Apr 3	
5	Apr 6-10	Tier 2 Instruction/STAAR Prep
4	Apr 13-17	
4	Apr 20-24	POST-STAAR UNIT Energy Flow in Food Webs & Human Activities Affect Ecosystems (5.12BC - 3 days) Instinctual Traits & Learned Behaviors (5.13B - 3 days) Solutions for Conservation, Recycling and Proper Disposal (5.11A - 5 days)
4	Apr 27 - May 1	
5	May 4-8	
5	May 11-15	
4	May 18-21	Tier 2 Instruction