A Correlation of

Elevate Science

Grade 1, ©2019

ARCHDIOCESE of MILWAUKEE

Office for Schools

To the

Next Generation Science Standards

Archdiocese of Milwaukee Science Curriculum for Grade 1

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Introduction

The following document demonstrates how the ***Elevate Science ©2019*** program supports the Archdiocese of Milwaukee's current science curriculum for Grade 1, through concurrent implementation of the Next Generation Science Standards. For each standard, correlation references are to the Student Edition and Teacher Edition where applicable.

Elevate Science is a comprehensive K-5 science program that focuses on active, student-centered learning. It builds students' critical thinking, questioning, and collaboration skills, and fuels interest in STEM and creative problem solving while supporting literacy development for elementary-age learners. Developed to support Next Generation Science Standards (NGSS), ***Elevate Science*** integrates three dimensional learning of the Scientific and Engineering Practices, Crosscutting Concepts (CCC), and Disciplinary Core Ideas (DCIs).

The ***Elevate Science*** blended print and digital curriculum engages students in phenomena-based inquiry and hands-on investigations.

- Problem–based learning Quests put students on a journey of discovery
- Engineering-focused features infuse STEM learning
- Coding and innovation engage students and build 21st century skills

The Teacher's Edition of ***Elevate Science*** helps elementary educators teach science with confidence: Scaffolding, ELD, differentiated instruction, and an instructional organization based upon the 5E learning model, (Engage, Explore, Explain, Extend/Elaborate, Evaluate), provide all the support needed for successful teaching practices. Professional development offers point-of-use support. A full-view approach to inquiry and testing provides new options for a variety of hands-on labs and assessments for three-dimensional learning.

Elevate Science prepares students for the challenges of tomorrow, building strong reasoning skills and critical thinking strategies as they engage in explorations, formulate claims, and gather and analyze data that promote evidence-based argument. Designed for today's classroom, preparing students for tomorrow's world. ***Elevate Science*** promises to:

- Elevate thinking.
- Elevate learning.
- Elevate teaching.

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1-PS4 Waves and their Applications in Technologies for Information Transfer	
Performance Expectation 1-PS4-1	
Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. **Clarification Statement:** Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.	**SE/TE:** 2-4, 6-19, 21, 25, 30–31
Disciplinary Core Ideas	
PS4.A: Wave Properties Sound can make matter vibrate, and vibrating matter can make sound.	**SE/TE:** 2–19, 21, 25, 30–31
Science and Engineering Practices	
Planning and Carrying Out Investigations Plan and conduct investigations collaboratively to produce evidence to answer a question.	**SE/TE:** 4, 7, 13, 18–19, 34–35
Connections to Nature of Science Science investigations begin with a question.	**SE/TE:** 4, 7, 13, 18–19, 34–35
Scientists use different ways to study the world.	**SE/TE:** 4, 7, 13
Crosscutting Concepts	
Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes.	**SE/TE:** 4, 34–35

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Performance Expectation 1-PS4-2	
Make observations to construct an evidence-based account that objects can be seen only when illuminated. **Clarification Statement:** Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.	**SE/TE:** 40, 42–47, 58, 60, 62–63, 68–69
Disciplinary Core Ideas	
PS4.B: Electromagnetic Radiation Objects can be seen if light is available to illuminate them or if they give off their own light.	**SE/TE:** 40, 42–47, 58, 60, 62–63, 68–69
Science and Engineering Practices	
Constructing Explanations and Designing Solutions Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.	**SE/TE:** 40, 59
Crosscutting Concepts	
Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes.	**SE/TE:** 40

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Performance Expectation 1-PS4-3	
Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. **Clarification Statement:** Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror). **Assessment Boundary:** Assessment does not include the speed of light.	**SE/TE:** 38–39, 43, 46, 48–57, 59, 64–65
Disciplinary Core Ideas	
PS4.B: Electromagnetic Radiation Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.	**SE/TE:** 40, 42–43, 46, 48–57, 72–73, 108–109
Science and Engineering Practices	
Planning and Carrying Out Investigations Plan and conduct investigations collaboratively to produce evidence to answer a question.	**SE/TE:** 42–43, 48–49, 72–73
Crosscutting Concepts	
Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes.	**SE/TE:** 42–43, 48–49, 72–73

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Performance Expectation 1-PS4-4	
Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. **Clarification Statement:** Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats. **Assessment Boundary:** Assessment does not include technological details for how communication devices work.	**SE/TE:** 2–3, 10, 17–19, 21–28, 30–31, 34–35, 38–39, 47, 53–54, 57–66, 68–69
Disciplinary Core Ideas	
PS4.C: Information Technologies and Instrumentation People also use a variety of devices to communicate (send and receive information) over long distances.	**SE/TE:** 21
Science and Engineering Practices	
Constructing Explanations and Designing Solutions Use tools and materials provided to design a device that solves a specific problem.	**SE/TE:** 18–19, 25–28, 54, 64–66
Influence of Engineering, Technology, and Science, on Society and the Natural World	
People depend on various technologies in their lives; human life would be very different without technology.	**SE/TE:** 22–27, 60–63

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1-LS1 From Molecules to Organisms: Structures and Processes	
Performance Expectation 1-LS1-1	
Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. **Clarification Statement:** Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.	**SE/TE:** 160–161, 163, 174–176
Disciplinary Core Ideas	
LS1.A: Structure and Function All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.	**SE/TE:** 142–143, 148–167, 174–175, 178–179, 182–183, 210–211
LS1.D: Information Processing Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.	**SE/TE:** 158, 162–167, 206–215

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Next Generation Science Standards Grade 1	Elevate Science ©2019
Science and Engineering Practices	
Constructing Explanations and Designing Solutions Use materials to design a device that solves a specific problem or a solution to a specific problem.	**SE/TE:** 144, 160–161, 176
Structure and Function The shape and stability of structures of natural and designed objects are related to their function(s).	**SE/TE:** 148–151, 153, 155–156, 159, 169
Influence of Engineering, Technology, and Science, on Society and the Natural World	
Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.	**SE/TE:** 153, 159–166
Performance Expectation 1-LS1-2	
Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. **Clarification Statement:** Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).	**SE/TE:** 189, 206–215
Disciplinary Core Ideas	
LS1.B: Growth and Development of Organisms Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive.	**SE/TE:** 189, 206–215

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Science and Engineering Practices	
Obtaining, Evaluating, and Communicating Information Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world.	**SE/TE:** 189, 206–215
Connections to Nature of Science Scientists look for patterns and order when making observations about the world.	**SE/TE:** 211, 216
Crosscutting Concepts	
Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.	**SE/TE:** 194–195, 206–214
1-LS3 Heredity: Inheritance and Variation of Traits	
Performance Expectation 1-LS3-1	
Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. **Clarification Statement:** Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same. **Assessment Boundary:** Assessment does not include inheritance or animals that undergo metamorphosis or hybrids	**SE/TE:** 184–188, 191, 193, 196–205, 216, 218–223
Disciplinary Core Ideas	
LS3.A: Inheritance of Traits Young animals are very much, but not exactly, like their parents. Plants also are very much, but not exactly, like their parents.	**SE/TE:** 184–188, 191, 193, 196–205, 216, 218–223

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LS3.B: Variation of Traits Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.	**SE/TE:** 199–202
Science and Engineering Practices	
Constructing Explanations and Designing Solutions Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.	**SE/TE:** 188, 191, 194–195, 197, 222–223
Crosscutting Concepts	
Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.	**SE/TE:** 196–202
1-ESS1 Earth's Place in the Universe	
Performance Expectation 1-ESS1-1	
Use observations of the sun, moon, and stars to describe patterns that can be predicted. **Clarification Statement:** Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day. **Assessment Boundary**: Assessment of star patterns is limited to stars being seen at night and not during the day.	**SE/TE:** 76–77, 86–93, 98–99, 102
Disciplinary Core Ideas	
ESS1.A: The Universe and its Stars Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.	**SE/TE:** 76–77, 86–93, 98–99, 102

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Science and Engineering Practices	
Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.	**SE/TE:** 81, 83, 87, 92–93, 95–99
Crosscutting Concepts	
Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.	**SE/TE:** 86–93, 95–99
Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes natural events happen today as they happened in the past.	**SE/TE:** 86-90, 92-93, 95-97
Many events are repeated.	**SE/TE:** 88–90, 93, 96–99
Performance Expectation 1-ESS1-2	
Make observations at different times of year to relate the amount of daylight to the time of year. **Clarification Statement:** Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall. **Assessment Boundary:** Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.	**SE/TE:** 94–101, 104–107, 129, 136–137
Disciplinary Core Ideas	
ESS1.B: Earth and the Solar System Seasonal patterns of sunrise and sunset can be observed, described, and predicted.	**SE/TE:** 86–101, 108–109, 132–133

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Science and Engineering Practices	
Planning and Carrying Out Investigations Make observations (firsthand or from media) to collect data that can be used to make comparisons.	**SE/TE:** 96–99, 129, 132–133
Crosscutting Concepts	
Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.	**SE/TE:** 94–97, 129
Engineering Design	
Performance Expectation K-2-ETS1-1	
Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	**SE/TE:** 2–3, 26–27, 57, 78, 100–101, 108–109, 132–133, 170, EM10
Disciplinary Core Ideas	
ETS1.A: Defining and Delimiting Engineering Problems A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.	**SE/TE:** 2–3, 38–39
Asking questions, making observations, and gathering information are helpful in thinking about problems.	**SE/TE:** 2–3, 78, 100–101, 108–109, 132–133, 170, EM10
Before beginning to design a solution, it is important to clearly understand the problem.	**SE/TE:** 64–65, 117, 176, EM10

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Performance Expectation K-2-ETS1-2	
Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	**SE/TE:** 78, 98–101, 146, 148–153, 155, 160–161, 182–183, 204–205, 207, EM12-EM13
Disciplinary Core Ideas	
ETS1.B: Developing Possible Solutions Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.	**SE/TE:** 25, 64–65, 124–125, 146, 204–205
Performance Expectation K-2-ETS1-3	
Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**SE/TE:** 125, 155
Disciplinary Core Ideas	
ETS1.C: Optimizing the Design Solution Because there is always more than one possible solution to a problem, it is useful to compare and test designs.	**SE/TE:** 28, 124–125, EM11–EM13