

## 2021 - 2022, Third Grade, Science, Quarter 1

### Big Ideas/Key Concepts:

- Living things have forms and functions which support survival.
- There is a cause and effect relationship between an environment undergoing a natural change and organisms' ability to survive.
- Living things, including humans, adapt to their environment and may have their resources affected by an environment.

Standards	Student Friendly "I Can" Statements
<p><b><u>From Molecules to Organisms: Structures and Processes</u></b></p> <p><b>3.LS1.1</b> Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.</p> <p><b><u>Ecosystems: Interactions, Energy, and Dynamics</u></b></p> <p><b>3.LS2.1</b> Construct an argument to explain why some animals benefit from forming groups.</p> <p><b><u>Biological Change: Unity and Diversity</u></b></p> <p><b>3.LS4.1</b> Explain the cause and effect relationship between a naturally changing environment and an organism's ability to survive.</p>	<p><b><u>From Molecules to Organisms: Structures and Processes</u></b></p> <p>I can describe how living things (<u>plants</u> and <u>animals</u>) use their <u>internal organs</u> and <u>external parts</u> to survive, grow, reproduce, and respond to their environment (<u>land</u> and/or <u>aquatic</u> habitat).</p> <p><b><u>Ecosystems: Interactions, Energy, and Dynamics</u></b></p> <p>I can construct an argument to explain why some animals benefit from forming groups (e.g. school of fish or herd of cattle).</p> <p>I can differentiate between animal groups where individuals have similar roles and animal groups where individuals have different roles.</p> <p>I can explain why a species might benefit from forming a small group or forming a large group depending on their needs.</p> <p>I can compare different reasons for why animals benefit from forming groups (i.e., obtain food, defend themselves, cope with changes).</p> <p><b><u>Biological Change: Unity and Diversity</u></b></p> <p>I can explain how a naturally changing environment may affect an organism's ability to survive.</p>

Standards	Student Friendly "I Can" Statements
<p><b>3.LS4.2</b> Infer that plant and animal adaptations help them survive in land and aquatic biomes.</p>	<p>I can investigate how plant and animal adaptations help them survive in their biomes (land and <u>aquatic</u>).</p>
<p><b>3.LS4.3</b> Explain how changes to an environment's biodiversity influence human resources.</p>	<p>I can explain how human resources are affected by changes to an environment and the living things found in it (e.g., overfishing).</p>

**Embedded K-8 TN Computer Science Standards:**

- **AIT.1** Identify and define problems and form significant questions for investigation.
- **AIT.2** Develop a plan to use technology to find a solution and create projects.
- **AIT.6** Collect, organize, analyze, and interpret data to identify solutions and/or make informed decisions.
- **AIT.7** Infer and predict or propose relationships with data.
- **DC.1** Advocate, demonstrate, and routinely practice safe, legal, and responsible use of information and technology.
- **DC.2** Exhibit a positive mindset toward using technology that supports collaboration, learning, and productivity.

## 2021 - 2022, Third Grade, Science, Quarter 2

### Big Ideas/Key Concepts:

- Planets are classified as inner planets or outer planets according to patterns found in their physical properties.
- Matter is made up of particles too small to be seen.
- Solids, liquids, and gases have identifiable physical properties.
- Heating or cooling matter may cause changes that can be reversed, or changes that cannot be reversed.
- Matter has physical properties such as color, texture, shape, length, mass, temperature, volume, state, hardness, and flexibility.

Standards	Student Friendly "I Can" Statements
<p><b><u>Earth's Place in the Universe</u></b></p> <p><b>3.ESS1.1</b> Use data to categorize the planets in the solar system as inner or outer planets according to their physical properties.</p> <p><b><u>Matter and Its Interactions</u></b></p> <p><b>3.PS1.1</b> Describe the properties of solids, liquids, and gases and identify that matter is made up of particles too small to be seen.</p> <p><b>3.PS1.2</b> Differentiate between changes caused by heating or cooling that can be reversed and that cannot.</p> <p><b>3.PS1.3</b> Describe and compare the physical properties of matter including color, texture, shape, length, mass, temperature, volume, state, hardness, and flexibility.</p>	<p><b><u>Earth's Place in the Universe</u></b></p> <p>I can research data on the planets in the solar system in order to sort them as inner or outer planets based on their physical properties.</p> <p><b><u>Matter and Its Interactions</u></b></p> <p>I can investigate and determine that matter is made up of particles too small to be seen.</p> <p>I can model and describe the properties (e.g. particle movement) of solids, liquids, and gases.</p> <p>I can investigate and explain the difference between changes caused by heating or cooling that can be reversed and those that cannot.</p> <p>I can describe and compare matter by its physical properties including color, texture, shape, length, mass, temperature, volume, state, hardness, and flexibility.</p>

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- **DC.3** Exhibit leadership for digital citizenship.

## 2021 - 2022, Third Grade, Science, Quarter 3

### Big Ideas/Key Concepts:

- Natural hazards impact humans and the environment, and solutions can be engineered to reduce a hazard’s impact.
- Design a solution to a real-world problem using the engineering design process.
- The water cycle on Earth is a series of events that impacts an environment and follows a repeatable pattern.
- Cloud types can be classified and associated with specific weather conditions.
- Weather and climate varies throughout different regions on Earth.

Standards	Student Friendly “I Can” Statements
<p><b><u>Earth and Human Activity</u></b></p> <p><b>3.ESS3.1</b> Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.</p> <p><b>3.ESS3.2</b> Design solutions to reduce the impact of natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) on the environment.</p>	<p><b><u>Earth and Human Activity</u></b></p> <p>I can research and explain how humans are impacted by natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods).</p> <p>I can research and explain how the environment is impacted by natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods).</p> <p>I can design a solution to reduce the impact of natural hazards on the environment (fires, landslides, earthquakes, volcanic eruptions, floods).  <b>**Apply the Engineering Design Standards found on the following page**</b></p>
<p><b><u>Engineering Design</u></b></p> <p><b>3.ETS1.1</b> Design a solution to a real-world problem that includes specified criteria for constraints.</p> <p><b>3.ETS1.2</b> Apply evidence or research to support a design solution.</p>	<p><b><u>Engineering Design</u></b></p> <p>I can design a solution to a real-world problem including specific criteria for constraints.</p> <p>I can apply evidence from research to support a design solution.</p>

Standards	Student Friendly "I Can" Statements
<p><b><u>Earth's Systems</u></b></p> <p><b>3.ESS2.1</b> Explain the cycle of water on Earth.</p> <p><b>3.ESS2.2</b> Associate major cloud types (cumulus, cumulonimbus, cirrus, stratus, and nimbostratus) with weather conditions.</p> <p><b>3.ESS2.3</b> Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.</p> <p><b>3.ESS2.4</b> Incorporate weather data to describe major climates (polar, temperate, tropical) in different regions of the world.</p>	<p><b><u>Earth's Systems</u></b></p> <p>I can model the water cycle as a series of events that impacts an environment and follows a repeatable pattern.</p> <p>I can identify the form and function of major cloud types (cumulus, cumulonimbus, cirrus, stratus, and nimbostratus).</p> <p>I can associate major cloud types with weather conditions.</p> <p>I can use tables, graphs, and tools (anemometer, thermometer, rain gauge, barometer, and wind vane) to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.</p> <p>I can describe major climates (polar, temperate, and tropical) in different regions of the world by using weather data.</p>

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- **AIT.7** Infer and predict or propose relationships with data.
- **DC.1** Advocate, demonstrate, and routinely practice safe, legal, and responsible use of information and technology.
- **DC.2** Exhibit a positive mindset toward using technology that supports collaboration, learning, and productivity.
- **DC.3** Exhibit leadership for digital citizenship.

## 2021 – 2022, Third Grade, Science, Quarter 4

### Big Ideas/Key Concepts:

- Magnets have a cause and effect relationship with other magnets and that interaction can be applied to solve a problem.
- Use the engineering design process to solve real world problems.
- Energy is present when objects move, and can be transferred from one object to another.
- Electricity is a form of energy and can be converted to other forms of energy using open or closed simple circuits.
- Magnets can affect the position and movement of objects with certain properties, even without touching those objects.
- Identify the parts of the respiratory and circulatory systems and their functions within the human body. (WCS Standard)

Standards	Student Friendly “I Can” Statements
<p><b><u>Motion and Stability: Forces and Interactions</u></b></p> <p><b>3.PS2.1</b> Explain the cause and effect relationship of magnets.</p> <p><b>3.PS2.2</b> Solve a problem by applying the use of the interactions between two magnets.</p> <p><b><u>Energy</u></b></p> <p><b>3.PS3.1</b> Recognize that energy is present when objects move; describe the effects of energy transfer from one object to another.</p> <p><b>3.PS3.2</b> Apply scientific ideas to design, test, and refine a device that converts electrical energy to another form of energy, using open or closed simple circuits.</p>	<p><b><u>Motion and Stability: Forces and Interactions</u></b></p> <p>I can investigate the cause and effect relationship of magnets.</p> <p>I can identify and solve a problem by using the interactions between two magnets.</p> <p><b><u>Energy</u></b></p> <p>I can recognize that energy is present when objects move.</p> <p>I can describe the effects of energy transfer from one object to another.</p> <p>I can describe energy transfer by waves (e.g. sound, mechanical, and electromagnetic radiation waves).</p> <p>I can analyze energy transfer during a collision between a moving object and an object at rest.</p> <p>I can describe energy transfer by electric currents.</p>

Standards	Student Friendly “I Can” Statements
<p><b>3.PS3.3</b> Evaluate how magnets cause changes in the motion and position of objects, even when the objects are not touching the magnet.</p> <p><b><u>Links Among Engineering, Technology, Science, and Society</u></b></p> <p><b>3.ETS2.1</b> Identify and demonstrate how technology can be used for different purposes.</p> <p><b><u>Human Body Systems</u></b></p> <p><b>3.WCE.SC.1</b> Identify the parts of the respiratory system and their functions. <i>Introduce after TCAP – this standard is not assessed.</i></p> <p><b>3.WCE.SC.2</b> Identify the parts of the circulatory system and their functions. <i>Introduce after TCAP – this standard is not assessed.</i></p> <p><b>3.WCE.SC.3</b> Identify the parts of the ear and how each part functions in hearing. <i>Introduce after TCAP – this standard is not assessed.</i></p>	<p>I can use open or closed simple circuits to design, test, and refine a device that converts electrical energy to another form of energy.</p> <p>I can evaluate how magnets cause changes in the motion and position of objects, even when the objects are not touching the magnet.</p> <p><b><u>Links Among Engineering, Technology, Science, and Society</u></b></p> <p>I can identify and demonstrate how technology can be used for different purposes.</p> <p><b><u>Human Body Systems</u></b></p> <p>I can identify and label the parts of the respiratory system (e.g. lungs, trachea, bronchi, and diaphragm).</p> <p>I can explain the functions of the parts of the respiratory system.</p> <p>I can identify and label the parts of the circulatory system (e.g. heart, blood vessel, artery, vein, capillary, platelets, and plasma).</p> <p>I can explain the functions of the parts of the circulatory system.</p> <p>I can identify the parts of the ear and how they function together to provide hearing, which includes: the inner ear, the middle ear and the outer ear.</p> <p>I can correctly label a diagram of the ear including the: cochlea, semicircular canal, eardrum, ossicles, Eustachian tube, auricle and ear canal.</p>

**Embedded K-8 TN Computer Science Standards:**

- **AIT.1** Identify and define problems and form significant questions for investigation.
- **AIT.2** Develop a plan to use technology to find a solution and create projects.
- **AIT.5** Evaluate the accuracy, relevance, appropriateness, and bias of electronic information sources.
- **AIT.6** Collect, organize, analyze, and interpret data to identify solutions and/or make informed decisions.
- **AIT.7** Infer and predict or propose relationships with data.
- **DC.1** Advocate, demonstrate, and routinely practice safe, legal, and responsible use of information and technology.
- **DC.2** Exhibit a positive mindset toward using technology that supports collaboration, learning, and productivity.
- **DC.3** Exhibit leadership for digital citizenship.
- **DC.4** Recognize and describe the potential risks and dangers associated with various forms of online communications (e.g., cell phones, social media, digital photos).
- **DC.5** Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use such as copyright infringement and piracy.