2021 - 2022, First Grade, Science, Quarter 1

Big Ideas/Key Concepts:

- **Plants have form and function which can be related to their parts.**
- **Plants have a life cycle with identifiable patterns.**
- **Changes in a plant's environment may cause the plant to respond in different ways.**
- **Science tools can support an investigation when used appropriately.**

Standards	Student Friendly "I Can" Statements
From Molecules to Organisms: Structures and Processes	**From Molecules to Organisms: Structures and Processes**
1.LS1.1 Recognize the structure of plants (roots, stems, leaves, flowers, fruits) and describe the function of the parts (taking in water and air, producing food, making new plants).	I can observe and identify the parts of a plant (roots, stems, leaves, flowers, fruits). I can connect the parts of a plant (roots, stems, leaves, flowers, fruits) with their function **(**taking in water and air, producing food, making new plants).
1.LS1.2 Illustrate and summarize the life cycle of plants.	I can create a model which summarizes the life cycle of plants.
1.LS1.3 Analyze and interpret data from observations to describe how changes in the environment cause plants to respond in different ways.	I can investigate how changes in the environment cause plants to respond in different ways.

Standards	Student Friendly "I Can" Statements
Links Among Engineering, Technology, Science, and Society **1.ETS2.1** Use appropriate tools (magnifying glass, basic balance scale) to make observations and answer testable scientific questions.	**Links Among Engineering, Technology, Science, and Society** I can use science tools (magnifying glass, basic balance scale) appropriately to make observations and answer testable questions.
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. ● **DC.1** Advocate, demonstrate, and routinely practice safe, legal, and responsible use of information and technology.	

2021 - 2022, First Grade, Science, Quarter 2

Big Ideas/Key Concepts:

- **Light and heat energy from our Sun warm Earth's surface.**
- **Light is required to make things visible.**
- **Some objects produce their own light, while other objects reflect light.**
- **Solve scientific problems by asking testable questions, making observations, and gathering information.**
- **Objects are transparent, translucent, opaque, and/or reflective.**

Standards	Student Friendly "I Can" Statements
Energy **1.PS3.1** Make observations to determine how sunlight warms Earth's surfaces (sand, soil, rocks, and water). **Waves and Their Application in Technologies for Information Transfer** **1.PS4.1** Use a model to describe how light is required to make objects visible. Summarize how illumination could be from an external light source or by an object giving off its own light.	**Energy** I can observe how sunlight warms Earth's surfaces (sand, soil, rocks, and water). I can observe how placing an object in direct sunlight may cause it to feel warmer than placing it in shade. **Waves and Their Application in Technologies for Information Transfer** I can model and describe how light makes objects visible. I can explain when light is reflected off a surface versus when an object gives off its own light.

Standards	Student Friendly "I Can" Statements
1.PS4.2 Determine the effect of placing objects made with different materials (transparent, translucent, opaque, and reflective) in the path of a beam of light. **Engineering Design** **1.ETS1.1** Solve scientific problems by asking testable questions, making short-term and long-term observations, and gathering information.	I can investigate and organize information about a variety of materials to categorize them as translucent, transparent, opaque, or reflective. I can design and carry out an experiment to investigate how different surfaces either reflect or absorb light. **Engineering Design** I can ask testable questions in order to solve a scientific problem. I can make short-term and long-term observations in order to solve a scientific problem. I can gather information in order to solve a scientific problem.
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. ● **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.	

2021 - 2022, First Grade, Science, Quarter 3

Big Ideas/Key Concepts in Quarter 1:

- **Patterns can be observed in the day and night sky.**
- **Objects in the day and night sky change position.**
- **Objects in the sky can be observed using a telescope, which provides greater detail of objects in the sky.**

Standards	Student Friendly "I Can" Statements
Earth's Place in the Universe	**Earth's Place in the Universe**
1.ESS1.1 Use observations or models of the sun, moon, and stars to describe patterns that can be predicted.	I can use what I know about patterns to predict the movement of the sun and moon across the sky. I can use graphs or other models to describe patterns about the sun, moon, and stars.
1.ESS1.2 Observe natural objects in the sky that can be seen from Earth with the naked eye and recognize that a telescope, used as a tool, can provide greater detail of objects in the sky.	I can explain why I need to use a telescope to see objects in the sky with more detail. I can compare photos of objects in the sky and recognize if a telescope was used or not.
1.ESS1.3 Analyze data to predict patterns between sunrise and sunset and the change of seasons.	I can collect data about sunrise and sunset times for days in different seasons.

Standards	Student Friendly "I Can" Statements
	I can predict seasonal patterns between sunrise and sunset based on observations, informational texts, and class discussions. I can describe how the amount of daylight changes with the seasons.
Embedded K-8 TN Computer Science Standards: ● **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. ● **AIT.5** Evaluate the accuracy, relevance, appropriateness, and bias of electronic information sources.	

2021 - 2022, First Grade, Science, Quarter 4

Big Ideas/Key Concepts:

- **Plants need air, water, minerals, and light to grow and thrive.**
- **Plants can be classified by where they grow and the plants' parts.**
- **Plants depend on their surroundings and other living things to meet their needs.**

Standards	Student Friendly "I Can" Statements
Ecosystems: Interactions, Energy, and Dynamics	**Ecosystems: Interactions, Energy, and Dynamics**
1.LS2.1 Conduct an experiment to show how plants depend on air, water, minerals from soil, and light to grow and thrive.	I can conduct an experiment to show how plants need air, water, minerals from soil, and light to grow and thrive.
1.LS2.2 Obtain and communicate information to classify plants by where they grow (water, land) and the plant's physical characteristics.	I can research and classify plants by where they grow (water, land) and the plant's physical properties.
1.LS2.3 Recognize how plants depend on their surroundings and other living things to meet their needs in the places they live.	I can identify the ways plants depend on their surroundings and other living things to meet their needs.

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.