Sparta Area School District

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Course Outcome Summary

Course Information: Kindergarten Science

Description: This course is about developing an understanding of the world around us by observing and conducting simple experiments and using the basic principles of the scientific method.

Instruction Level: Kindergarten

Course Standards:

In Kindergarten science instruction, students will learn to:

- Push and pull objects to move them.
- Explain how gravity works.
- Describe the effect the sun has on the Earth.
- Identify needs of plants and animals.
- Describe the weather.
- Describe living things and their habitats.
- Develop an awareness of the environment and how to sustain it.
- Use scientific tools such as thermometers, balances, and magnifiers.
- Use magnets to move objects.
- Observe and conduct simple experiments.
- Use scientific method with teacher support.

Unit

1. **Motion and Stability: Forces and Interactions**
2. **Energy**
3. **From Molecules to Organisms: Structures and Processes**
4. **Earth's Systems**
5. **Earth and Human Activity**

Unit Outlines

1. Motion and Stability: Forces & Interactions

Standards:

- Push and pull objects to move them.

- Explain how gravity works.

Essential Question:

- What happens if you push or pull an object harder?

Essential Knowledge:

- Pushes and pulls can have different strengths and directions.
- Pushing or pulling on an object can change the speed or direction of its motion and can start and stop it.
- When objects touch or collide, they push on one another and can change motion.
- A bigger push or pull makes things speed up or slow down more quickly.
- 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.

2. Energy
Standards:

- Describe the effect that sun has on the Earth.

Essential Question:

- How does sunlight affect the Earth and the living and non-living things on it?

Essential Knowledge:

- Sunlight warms Earth's surface.

3. From Molecules to Organisms: Structures and Processes
Standards:

- Identify needs of plants and animals.

Essential Question:

- What do plants and animals need in order to live and grow?

Essential Knowledge:

- All animals need food in order to live and grow.
- They obtain their food from plants or from other animals.
- Plants need water and light to live and grow.

4. Earth's Systems
Standards:

- Describe the weather.

Essential Question:

- What is the weather like today and how is it different from yesterday?

Essential Knowledge:

- Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time.
- People measure these conditions to describe and record the weather and to notice patterns over time.
- Plants and animals can change their environment (seasonal changes).

5. Earth and Human Activity
Standards:

- Describe living things and their habitats.
- Develop an awareness of the environment and how to sustain it.

Essential Question:

- How do people, plants and animals affect the Earth?

Essential Knowledge:

- Living things need water, air, and resources from the land, and they live in places that have the things they need.
- Humans use natural resources for everything they do.
- Some kinds of severe weather are more likely than others in a given region.
- Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.
- Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.
- Asking questions, making observations, and gathering information are helpful in thinking about problems.
- 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.