Sparta Area School District

Good people, great schools.

Course Outcome Summary

Course Information: SAILS: 3rd Rock from the Sun

Description: 3rd Rock from the Sun is designed to be a fun and relatable Earth/Life Science course. Students will study all living and non-living parts of an ecosystem as well as evolution and geology. They will understand how all things across the globe are connected.

Instruction Level: 10 - 12

Total Credits: 1

Prerequisites: NA

Textbooks: NA

Course Standards:

- Explain current scientific ideas and information about the molecular and genetic basis of heredity.
- Understand the theory of evolution, natural selection, and biological classification.
- Investigate how organisms both cooperate and compete in ecosystems.
- Using the science themes, infer changes in ecosystems prompted by the introduction of new species, environmental conditions, chemicals, and air, water, or earth pollution.
- Understand the impact of energy on organisms in living systems.
- Analyze* the geochemical and physical cycles of the earth and use them to describe* movements of matter.
- Analyze* the benefits, costs, and limitations of past, present, and projected use of resources and technology and explain* the consequences to the environment

Unit

1. **Ecology and Ecosystems**
2. **Plant Sciences**
3. **Water and Soil**
4. **Critters, Creatures, and Crawlers**
5. **A Changing Earth**

Unit Outlines

1. **Ecology and Ecosystems**
   Standards:

- Analyze all aspects and interactions of an ecosystem.

Essential Question:
- What does an ecosystem need to thrive?

Essential Knowledge:
- Students will research a particular biome and describe all the aspects of its ecosystem.
- Students will discover the threats to an ecosystem and the species within it.

2. **Plant Sciences**
   Standards: Evaluate the role of plants within an ecosystem and the energy they provide.

   Essential Question: What is the importance of plants throughout the globe?

   Essential Knowledge
   - Students will identify plants as a key role in the energy chain of our planet.
   - Students will determine what conditions plants need to prosper in various ecosystems.

3. **Water and Soil**
   Standards: Investigate the role of water and soil in creating a healthy environment.

   Essential Question: How can one effectively manage water and soil to preserve the vitality of the ecosystem?

   Essential Knowledge:
   - Students will discover strategies to improve water and soil in areas where the quality has deteriorated.
   - Students will study the water cycle and natural cycles within soil that are vital to life.

4. **Critters, Creatures, and Crawlers**
   Standards: Study the aspects of all non-plant living things on Earth.

   Essential Question: How did species come to find their current balance amongst each other?

   Essential Knowledge:
   - Students will analyze evolution and how various species have changed over time.
   - Students will evaluate the role of humans as the dominant species on the planet and how they influence all other species.

5. **A Changing Earth**
   Standards: Use current information and patterns to predict the state or our Earth's environment in the future.

   Essential Question: What impact will climate changes have on different ecosystems around our planet and what can be done about it?

Essential Knowledge:

- Students will evaluate weather data to find patterns within the last 100 years.
- Students will discuss the various factors that affect climate and what strategies can be applied to counter negative effects.