



Course Outcome Summary

Course Information: Montessori First Grade Science

Instruction Level: Montessori First Grade

Course Standards:

The Montessori approach uses specific Montessori materials to meet the needs of the children at their stage of development. At the end of each level the children will meet these units of study. By using the Montessori approach the children then become active learners and are able to reach their own unique potential because they are learning at their own pace and rhythm focusing on their own particular developmental needs at that moment.

Unit

1. **Waves: Light and Sound**
2. **Structure, Function, and Information Processing**
3. **Space Systems: Patterns and Cycles**
4. **Engineering Design**

Unit Outlines

1. Light and Sound Standards:

- Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
- Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.
- Use tools and materials to design and build a device that uses light or sound to solve a problem of communicating over a distance.

Essential Question:

Students will be able to answer the following question(s):

- How does sound travel?
- What are waves?
- How has communication technology changed over time?
- How does light travel?

Essential Knowledge:

- I can plan and show that vibrating objects make sound and that sound makes objects vibrate.
- I can determine the effect light has on objects made of different materials.

- I can communicate over a distance by creating a device that uses light or sound.

2. Structure, Function, and Information Processing

Standards:

- 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.

Essential Question:

Students will be able to answer the following question(s):

- How do animal and plant parts relate to their function?
- How do plants and animals capture and convey information?

Essential Knowledge:

- I can design a solution to a human problem by mimicking plant and animal survival characteristics.

3. Space Systems: Patterns and Cycles

Standards:

- Use observations of the sun, moon, and stars to describe patterns that can be predicted.

Essential Question:

Students will be able to answer the following question(s):

- What tools can we use to make observations of the sun, moon, and stars?
- How do people track predictable patterns?

Essential Knowledge:

- I can observe and describe predictable patterns made by the sun, moon, and stars.

4. Engineering Design

Standards:

- 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.

Essential Question:

Students will be able to answer the following question(s):

- What does an engineer do?
- How do engineers design solutions to problems?

Essential Knowledge:

- I can collect data about a problem that can be solved with the use of a new object or tool.