Earth Science Curriculum

2022 - 2023

Content Addressed (by Unit)

- Geologic time
- Earth's features
- Space
- Earth's movements
- Rocks and minerals
- Water
- Chemical reactions
- Thermal energy design

Example of Content Objective: Students will develop and use a model to explain how the seasons occur and how Alaskan seasons are affected by their position on Earth.

Link to full curriculum map

Science Skills Developed

Addresses Common Core Literacy Standards for Science

- Keep an organized science binder throughout the year
- Understand and demonstrate proper lab safety
- Work through the scientific process in varying scenarios and identify parts of the scientific process
- Follow multi-step instructions (to various degrees of complexity based on age) when doing experiments
- Use the CER (Claim, Evidence, Reasoning) model to communicate understanding of topics or results of experiments
- Compare and contrast data from experiments and investigations with information from text
- Practice reading/comprehending scientific texts with the preloading of vocabulary
- Determine main ideas from scientific text and write a summary of scientific texts
- Synthesize ideas from several texts/sources
- Represent scientific information in a variety of ways (e.g. chart, diagram, graph, table)
- Present scientific data to an audience - class, community, peers, etc.

Differentiation in Classes

Class A	Class B	Class C
• Predominantly guided labs, experiments, investigations • Fill in the blank/short answers for post-lab questions • Introduction to researching on the Internet with assistance • Read scientific texts as a class or in small groups • More direct instruction when taking notes, doing experiments, working on projects, etc. • All tests open note • Present scientific data through posters, charts, graphs, etc.	• Mix of guided and independent labs, experiments, investigations • Mix of fill in the blank/short answer and longer answers on post-lab questions • Working towards independence on projects, labs, investigations, etc. • Research with assistance or in small groups • Read scientific texts semi-independently • Structured note-taking • Tests primarily open note • Verbally present scientific data within class	• Predominantly independent labs, experiments, investigations, projects • More extensive write-ups for labs, experiments, etc. • Work towards *designing* experiments to answer questions • Research and write about scientific concepts with little to no assistance • Read scientific texts independently • Independent note-taking • Tests primarily closed note • Verbally present scientific data to peers, school, community, etc.

Foundational Changes Theme/Other Subject Alignment

- Earth’s features and landforms units aligned with social studies focus on American landforms and geography
- Bulletin board project (all subjects) incorporates major scientific discoveries related to space
- Science fair writing supported in language arts with a research writing focus
- Scientific concepts illustrated in art lessons
- Major discoveries in chemistry - incorporated into readers theater with other subjects