

Science

This course grounds students in the techniques of observation and experimentation, which form the foundations of science. Students will come to see the practice of science as a general method for approaching any problem in the world, and for finding answers. Students explore physics, chemistry, biology, and earth science—not as topics in isolation, but as knowledge that emerges from the careful and rigorous application of scientific skills.

Topics and Themes

Identifying Problems in the Everyday World

Understanding how scientific thinking is applicable to solving problems in the everyday world.

Applying Scientific Reasoning/Hypothesizing in Multiple Areas

Learning to formulate a hypothesis, in order to learn how to make and support effective arguments through the scientific method.

Experience vs. Experimentation

Using relevant techniques to create an understanding of how many aspects of the world work, and develop a broader range of experience from which to accomplish further solutions.

Standards Addressed

NGSS Physical Science (PS)

PS1.A-B; PS2.A; PS3.A-D

Life Science (LS)

LS1.A,C; LS2.A-C; LS4.B-D

Earth & Space Science (ESS)

ESS1.A-B; ESS2.A,C; ESS3.A,C

Engineering Design

ETS1.A-B

Key Skills

Make Observations

Evaluate data in a variety of forms, from direct observation in the field to numeric data collected by instruments.

Ask Questions

Formulate questions using a variety of sources, including the past work of other scientists, collaboration, and individual insight.

Formulate Hypotheses

Develop testable explanations that suggest a causal relationship.

Design Experiments

Perform an experiment using a wide variety of methods to test hypotheses, as well as experimental controls.

Find and Evaluate Sources

Assess the applicability of other scientists' work as a starting point, with an understanding of the uncertainty involved.

Evaluate Hypotheses

Interpret data by identifying patterns, correlations, and trends. Draw on evidence, scientific principles, and previous research to support a claim.

Recognize Error

Distinguish the reliability of data in an experiment, and identify possible sources of error.

Communicate

Visually represent data and analysis in formal reports to communicate experimentation and analysis to others.

Collaborate

Work with others to gain perspective on ideas, and utilize their strengths to complement one's own, avoiding cognitive biases.

Science

Featured Quests



4 Activities

Science

Playground Momentum

How do we make things stop or go?

momentum, force, impulse, velocity, Make Observations, Identify a Question, Develop Hypotheses, Evaluate Hypotheses, Tables and Graphs, collaborate

1 Artifact



Use video evidence to analyze your soccer kick in terms of momentum and impulse.



4 Activities

Science

Will it Levitate

How can you use magnetism to build a floating car?

magnet, electricity, levitation, collaborate, design, polarity, electromagnetism, force, collaboration, Lab Notebook

1 Artifact



Design and create a floating car. Be able to explain the design using visual representations if necessary.



5 Activities

Science

Opposites Attract

What is a magnet and how does it work?

Develop Hypotheses, Make Observations, Tables and Graphs, collaborate, Lab Notebook, magnetism, static electricity

1 Artifact



Design an experiment to test static electricity and collect data in table form.



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