

5th Grade

SCIENCE ZONE

FIELD TRIPS

Theme: Physical Science
Topic: Density

DESCRIPTION: In this hands-on investigation of density, students will engage first hand with a number of science and engineering practices like making observations, collecting and analyzing data, using appropriate tools, and communicating an argument using evidence.

OBJECTIVES:

- Students will conduct an experiment to compare the density of liquids and develop an understanding of the concept of density as the measure of mass per volume.
- Students will engage with science and engineering practices like observing, conducting tests, analyzing data, and building a prototype.

NGSS & WY Science Standards:
PHYSICAL SCIENCE: 5TH GRADE

- 5-PS1-3

ENGINEERING: 5TH GRADE

- 3-5-ETS1-1
- 3-5-ETS1-3

Theme: Physical Science
Topic: Penny Chemistry

DESCRIPTION: This lesson has students exploring the difference between chemical and physical reactions. Through hands-on discovery, students will find out how different liquids affect pennies and decide whether they see a physical or chemical reaction.

OBJECTIVES:

- Students will be able to explain the basic difference between physical and chemical reactions.
- Students will practice identifying chemical and physical reactions caused by acids on metal through observing demonstrations and conducting experiments.

NGSS & WY Science Standards:
PHYSICAL SCIENCE: 5TH GRADE

- 5-PS1-1
- 5-PS1-2
- 5-PS1-3

Theme: Physical Science
Topic: Wind Energy

DESCRIPTION: Students explore how to capture the energy of wind and transfer that energy to another object. In this lesson, students will build cars that are powered by the wind. Comparing designs and models to see the most efficient process.

OBJECTIVES:

- Students will demonstrate an understanding of energy transfer by building a car that effectively uses wind as a power source.
- Students will analyze design results to create the most efficient way of harnessing the wind's energy.

NGSS & WY Science Standards:
ENGINEERING: 5TH GRADE

- 3-5-ETS1-1
- 3-5-ETS1-2
- 3-5-ETS1-3

5th Grade

SCIENCE ZONE

FIELD TRIPS

Theme: Earth Science & Engineering Design
Topic: Problem Solving

DESCRIPTION: In this lesson will explore ways human activities, specifically fisheries, impact fish populations around the world. Students will develop and model different strategies to eliminate bycatch of fish and mitigate unwanted loss of certain fish populations.

OBJECTIVES:

- Students will explore population dynamics in ocean ecosystems and discuss human impacts on certain fish populations.
- Students will actively engage with a range of science and engineering practices including observing, conducting tests, analyzing data, and building a prototype floatation device based on findings.

NGSS & WY Science Standards:
EARTH SCIENCE: 5th

- 5-ESS3-1

ENGINEERING: 5TH GRADE

- 3-5-ETS1-1
- 3-5-ETS1-2
- 3-5-ETS1-3

Theme: Physical Science
Topic: Gravity

DESCRIPTION: Students will develop a deeper understanding of gravity by working through a variety of hands-on experiments in this lesson. Students will explore different theories to see how scientists in the past worked towards the answer to the question “What is Gravity?”

OBJECTIVES:

- Students will explore gravity by conducting experiments to see if they can defy gravity.
- Students will be able to explain that gravity pulls things inward rather than down.
- Students will be able to identify the main factor that must change in order to change the pull of gravity.

NGSS & WY Science Standards:
PHYSICAL SCIENCE: 5th

- 5-PS2-1

Theme: Life Science
Topic: Ecosystems

DESCRIPTION: This lesson dives into the components of an ecosystem. Students will discover the need for both living and non-living organisms in an ecosystem and their reliance on one another.

OBJECTIVES:

- Students will demonstrate an understanding of the term abiotic by identifying non-living components in certain ecosystems.
- Students will demonstrate an understanding of the relationship of biotic and abiotic organisms by creating an ecosystem model.

NGSS & WY Science Standards:
PHYSICAL SCIENCE: 5th

- 5-PS3-1

LIFE SCIENCE: 5th

- 5-LS2-1

- LS2.A
- LS2.B