

FIELDTRIP GUIDED ACTIVITY MENU

STEM ACTIVITIES DESIGNED TO EXCITE AND INSPIRE STUDENTS

FROZEN SCIENCE: STATES OF MATTER

\$75

Ages 5+

This experience is designed to engage students in an interactive learning experience using liquid nitrogen--a colorless, odorless, and tasteless liquid that is produced when nitrogen liquefies at extremely low temperatures. Did you know that about 80% of the air we breathe is Nitrogen!?

We will start by showcasing both the properties of nitrogen (it boils at room temperature!?), and use this super cool -321 Fahrenheit substance to discuss pressure, freezing point, solids, liquids, gases, and sublimation using four super cool liquid nitrogen experiments. From flash-freezing a flower to "shrinking" a balloon to showcase how molecules expand and contract in the cold and the heat--students will walk away impressed and excited about the power of science to explain their world.

California Standards Connection(s)

- 3-PS-Matter has three states which can change when energy is added or removed.

Next Generation Science Standards:

- 2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

BOAT DESIGN & RACES

\$45

Ages 6+

This activity gives all students in the class a chance to design a tiny sailboat and race it in a fan-propelled mini-race. We'll talk about buoyancy, sail and mast design, and wind.

Next Generation Science Standards

- MS-ETS1 Engineering Design: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

SCHEDULE YOUR TRIP AT [HTTPS://WWW.SCCMOD.ORG/FIELD-TRIPS](https://www.sccmod.org/field-trips)

IT IS SHOCKING: STATIC ELECTRICITY

\$25

Ages 6+

Let us get out our Van de Graaff generator to show your students all about frictional charge generation, electrostatic repulsion, charging and discharging, and lightning. Parents will have a grand time taking pictures of kids with their hair standing on end.

Next Generation Science Standards

- 3-PS2-3 Motion and Stability: Forces and Interactions Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
- MS-PS2-3 Motion and Stability: Forces and Interactions Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
- HS-PS3-5 Energy Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction .

TASTE SCIENCE

\$50

Ages 5+

Not everyone experiences taste in the same way and some people are notoriously fussy! So, why don't we all like the same foods? It's because we all perceive taste in different ways. In this guided activity we will give every student (and chaperone) the chance to find out if they are a supertaster! We'll break down the class and chart our data together to make comparisons back to the general population.

Next Generation Science Standards:

- MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
- MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
- HS-LS4-3. Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

ELEPHANT TOOTHPASTE

\$60

Ages 4+

In this activity, students will observe a chemical change by combining a special catalyst with hydrogen peroxide and dish soap. It is EXTREMELY memorable, extremely messy, and just a touch dangerous (don't worry, we have safety glasses for everyone!)

MOD staff will cover basic chemistry concepts and vocabulary like "decomposition," "mixture," and "chemical".

Next Generation Science Standards

- 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
- MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

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