

Fun with Physical Science: Lab Exploration

Topics covered: Build a density column. Float a paperclip on water. Test the strength of a magnet. In this lab, students discuss the scientific method and practice developing hypotheses. They participate in demonstrations and conduct experiments that reveal science in materials we use every day. They use plastic bottles, water droppers, magnets and more to observe properties of matter including density, surface tension and magnetism.

Ages: K-2

Purchase Details: Lab Exploration - \$5 per student

Programs can be reserved by phone: 901-636-2362
Wednesday - Saturday, 10:30 am - 5:30 pm

Objectives:

1. Recognize that matter has predictable properties that can be tested through scientific investigation.
2. Conduct experiments to illustrate that air takes up space and has density.
3. Demonstrate that liquids of different densities will not mix.
4. Investigate the surface tension of water.
5. Explore magnetic and non-magnetic materials.

Vocabulary:

scientific method
hypothesis
experiment
air
density
high pressure
low-pressure

surface tension
cohesion
molecules
magnet
magnetic force
magnetic field

Fun Facts:

- Scoop ice cream into your root beer. Density makes it a root beer float. Which has the greater density--the ice cream or the root beer?
- The detergent we add to a load of dirty clothes lowers the surface tension of the water--so that water will soak into the fabric.
- Lodestones, naturally occurring magnetic rocks, were used in early compasses because they could provide a rough indication of the cardinal directions.

Web Resources:

Indianapolis Public Library/Density--

<https://www.indypl.org/blog/for-kids/science-experiment-density-bouyancy>

Science Lessons that Rock/Density--

<https://www.sciencelessonsthatrock.com/blog/7-lab-ideas-for-teaching-density>

Brainpop/Magnetism--

<https://educators.brainpop.com/lesson-plan/magnets-activities-for-kids-2/>

Physics Girl/Surface Tension--

<https://www.youtube.com/watch?v=WsksFbFZeeU>

Museum Resources:

- **For Your Classroom:** Reserve the Magnets & Magnetism Suitcase for use in your classroom. It includes a lodestone, compasses and a variety of magnets for K-5 student research. The Electricity Suitcase features electroscopes, a potato clock, batteries, wires, and bulbs for hands-on experiments for grades K-8.
- **In the galleries:** Learn more about Earth's magnetic field. See the Restless Dynamic Earth Exhibit in the museum's Geology Gallery.

Where: Pink Palace Discovery Lab or Classroom (for 15-32 students)

When: August-May Tuesday-Friday at 9:30 & 11 am 45-60 Minutes

- **Standards:**
 - (Grade Level) K-2
- **Tennessee: (Science)**
 - GRADE K: K.PS1, K.ETS1, K.ETS2
 - GRADE 1: 1.ETS1, 1.ETS2
 - GRADE 2: 2.PS2
- **Mississippi: (Science)**
 - GRADE K: P.K.5
 - GRADE 1:
 - GRADE 2: P.2.5
- **Arkansas: (Science)**
 - GRADE K:
 - GRADE 1:
 - GRADE 2: 2-PS-1, 2-PS-2
- **Catholic Diocese: (Science)**
 - GRADE K:
 - GRADE 1: 1.III.1, 1.III.5, 1.V.1, 1.V.3, 1.V.4, 1.V.6
 - GRADE 2: