



## **Grade 6-8: Mini Lab Boxes**

**Please choose one Mini-Lab for your field trip.**

### ***Physical Science***

#### **Mini-Lab # 1 Pulling Your Weight!**

Students learn about simple machines and how they combine to create more complicated machines. Your class will discuss: levers, pulleys, wheel and axles, fulcrums and Newton's Laws of Motion.

**Projects Include: Building a Pulley System, Catapult, and Crane.**

#### **Mini-Lab #2 Properties of Matter**

Students calculate liquid densities and apply filtration and evaporation to suspensions and solutions. They measure gas volumes and pressures to demonstrate Boyle's law. They investigate atomic structure and learn to read the Periodic Table.

**Projects Include: a neutralization reaction between bases and acids, an oxidation reaction that produces rust, and a double replacement reaction to form a precipitate.**

#### **Mini-Lab # 3 Newton's Toy Box**

Students experiment freely with familiar toys and objects. As they explain their observations, they prove Newton's three laws of motion. Experiments reinforce the concepts of inertia, gravity, acceleration, mass, force, and momentum. Students engage in races, games, and challenges that emphasize the laws of motion that govern everyday tasks and cosmic interactions.

**Projects Include: The Flip of a Grasshopper Toy, Keep on Rolling, Ball and Cup Contest, and Parachute Man**

#### **Mini-Lab #4 Robot Rumble**

Your class will learn about the history of robotics and get involved in our Hex Bug Nano Races! Then they will learn about electricity and motors as they build their very own Draw Bot.

**Projects Include: Draw Bot and Hex Bug Nano.**

**Mini-Lab # 5 Edison's Workshop**

The unit focuses on the transfer of electrical energy by electric current. Students build, operate, and analyze circuits, becoming skilled in assembling bulbs, batteries, wires, and switches. They explore the concepts of energy sources, receivers, and converters.

**Projects Include: LED Flashlight, Squishy Dough, and Static Electricity Challenge.**

**Mini-Lab #6 Energy and Electromagnetism**

This **Mini-Lab** introduces or reinforces concepts in physical science dealing with energy and change. Students experience electricity and magnetism as related effects and learn useful applications of electromagnetism in everyday life.

**Projects Include: Magnet Stone Experiments, Building a Telegraph, and Constructing and LED Throwie.**