

Discovery Lab Description:

Students will work collectively to design a device that defies gravity. This engaging activity will boost students' creativity and problem solving skills as they explore principles of magnetism and engineering. This is a great lab to help students think outside the box.

During the Discovery Lab students will be expected to:

- Sit 4 students per table.
- Work cooperatively with one another at the table.
- Follow the hands-on procedures just as the Lab teacher or assistant explains them.
- Handle materials and equipment carefully.
- Wear safety glasses at all times when tools are in use.

It is important that teachers and chaperones:

- Help focus the students' attention.
- Assist students with lab activities through questioning allowing the student to do the actual data collection and decision making. For example a parent might ask, "I see your base is shaky, what could you do to strengthen it?"
- Engage students at a higher level by asking open-ended questions throughout the class. For example: "Why did you choose _____?"
- Turn off cell phones and other electronic devices during the activity.

Literary connection:

To get students excited about the upcoming Discovery lesson, we suggest reading the following story with your students: *How To Be An Engineer* by Carol Vanderman. Read about how engineers use STEAM subjects and their imaginations to think critically and solve problems. Be inspired by engineering heroes such as Leonardo da Vinci, Mae Jemison, and Elon Musk. Fun questions, engineering experiments, and real-life scenarios come together to make engineering relevant"--Provided by publisher.

Next Generation Science Standards:

5-PS1-3. Make observations and measurements to identify materials based on their properties. 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

