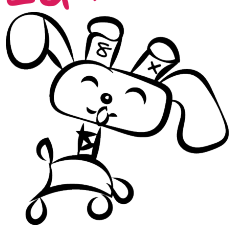
Lab Assistant: Bending Stuff With Blockey

Teacher Edition



Student Lab Objectives:

NGSS Core Objective Prerequisite: ***Balanced and unbalanced forces (Physics 3-PS2-1).***

In this lab Students learn that;

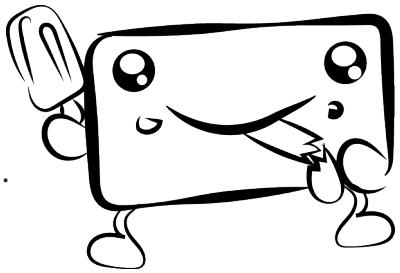
1. A force is a push or a pull
2. Increasing handle length increases the bending and breaking force
3. Students gain engineering intuition by experimenting with geometry and forces by feeling resistance when bending and breaking multiple materials with short and long handle lengths.

Lab materials:

- Blockey Koa - one long metal piece, one short metal piece, & 1 popsicle sticks per student
- Blockey Koa - One Blockey per 1 or2 students
- Blockey Koa - One Springy Spring Scale per 1 or 2 students
- Print off one student lab sheet per student

Running the Lab Activity:

1. **Introduce forces** with discussion of your teaching objectives involving forces.
2. **Show class movie** "Changing Tires"
3. **Pass out 1 Springy Spring Scale per 1 or 2 students** - Ask each student to pull on the spring scale and measure their pulling force to get a feel for what measurement pulling force feels like to them.
4. **Pass out one popsicle stick and 1 Mezzie Measuring Tape per child**. Ask each child to measure and mark 1 inch on their popsicle stick and break it at the inch mark using the edge of the table.
5. **Pass out 1 Blockey per 1 or 2 children.** Explain that they will use Blockey to bend things and that one partner will stabilize Blockey while the other breaks the popsicle stick.
6. **Ask students to break the short and long popsicle sticks** and to feel the difference and record on their lab sheets which was easiest and hardest to break.
7. Ask students if they think they are strong enough to bend metal. **Pass out a long and short wire**



8. **Ask them to bend the wires** and record on their lab sheet which was easiest and hardest to bend.
9. Lead a discussion of their observations and learnings from the lab.

Student Lab Objectives:

To give direction to this student observation and exploration session students can cut and color the POCKETPet creature cards and match them with (and identify) the animal home remnants they see in their samples.