

**Variables 5<sup>th</sup> Grade Science Kit****Title:** Investigation 4-- Designing Controlled Flipper Experiments**Objectives:**

1. Discuss and demonstrate the process of designing a controlled experiment.
  - a. Find out the effect one variable has in a system
  - b. Conduct the standard experiment and record results (There are NO variables tested in this experiment)
  - c. Conduct a controlled experiment and record results
  - d. Compare Data

**Method:**

- Whole group instruction
  - Angle Measurements
- Modeling
  - Standard Launch
    - Launch angle—0° (flat).
    - Position—Launch object between two short sticks. (Decide which side up)
    - Object—
    - Flip-stick position—all the way in.
    - Energy—flip stick depressed all the way.
- Guided/Independent practice
- Small groups

**Background:**

This is the final investigation in the Variables Science Kit

- Students are familiar with terminology and the flipper system

**Materials:**

- Flipper base
- Angle brace
- Flip sticks
- Popsicle sticks
- Pennies
- Rubber stoppers
- Cork
- Aluminum balls
- Meter sticks
- Science notebooks
  - Design an Experiment: Flippers
  - Two-coordinate graph (as needed) **and transparency**