

## 6. Newton's Laws

**Subject:** Physics

**Objective:** To introduce students to a basic scientific principle.

**Logistics:** Experiment can be done in teams of 3 or 4 or as a demonstration for the whole class.

**Materials:**

*wooden block on wheels or roller*

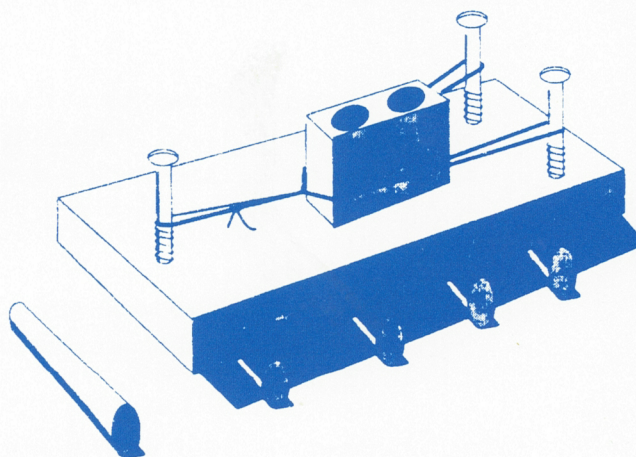
*smaller wooden block with drilled holes for lead weights*

*rubber bands for sling shot (see diagram)*

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**Procedure:**

**Step 1:** Place the larger block on rollers. Set the small block on top of the larger block within the sling shot made of rubber bands. Mark the edge of large block with masking tape. Release block from sling by cutting retaining string. Measure distance large block has traveled.



**Step 2:** Repeat Step 1 using first one and then two lead weights in small block. Result will be roughly quantitative showing that the larger the force in one direction the farther the large block will travel. Vary the number of rubber bands to change the throwing power and size of weights to demonstrate the quantitative aspects of the second and third laws

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**Vocabulary:** *force, action, reaction, scientific law, Isaac Newton, vacuum*

**What they Learn:** Newton's Third Law explains why rockets fly. Hot gases out of rear propel rocket (the reaction) in space. The Law also explains why rockets work in the vacuum of space.