Air Puck

P4-2150

TEACHER'S NOTES:

The Air Puck glides best on hard floors. Low carpet can also be used. The rubber bumper on the Air Puck helps it bounce elastically off hard barriers, such as walls or boards.

CHANGING THE BATTERIES:

To change the batteries, remove the white circular cover located underneath the Air Puck. It is held in place by the three inner most screws located near the outer edge of the solid white cover. The air puck runs on 4 "AA" batteries.

EXPERIMENTS:

Note: Some experiments recommend the use of a sonic motion sensor. The puck will need an attached "flag" or other object for the motion sensor to sense. Take care not to block the air intake area with this object.

1. **Newton's First Law (Law of Inertia):** Demonstrate how the puck glides smoothly in a straight line until acted on by an outside force. The usual outside force of friction is greatly reduced for the puck.

2. **Motion on an inclined plane:** Use a motion sensor to measure the acceleration of the puck as it glides down a wide inclined plane. Compare this acceleration to calculated acceleration, and to the acceleration of other objects, such as a sliding block, rolling car, or rolling ball. Attach some mass to the puck (make sure it still glides smoothly) and repeat the measurement.

3. <u>**Collisions and conservation of momentum and energy:**</u> Use two or three Air Pucks to investigate the behavior of objects in collisions. Use a motion sensor for quantitative measurements. For inelastic collisions, attach some hook-and-loop (Velcro) fastener to the bumpers.

RELATED PRODUCTS:

Newtonian Demonstrator (P1-6001). Classic 5-ball demonstration of Newton's Laws and conservation of momentum and energy.

Bullseye Level (P6-2604). First, use the level to make sure your Air Puck is moving on a level surface. Then attach it to the Air Puck itself and use it as a simple accelerometer!

Teaching Physics with Toys (P8-0500). This easy-to-use workbook gives you dozens of activities for grades K-9 that use simple, fun toys.

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