

# Wheel & Axle Demonstrator

for STEM in the Gym™

**User Guide**



**PITSCO**  
EDUCATION

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## **Materials Included**

- Pitsco Wheel & Axle Demonstrator (axle with wheels)

## **Optional Items (not included)**

- 2 or more cones or other objects to roll around

## **Using the Demonstrator**

**Note:** This experiment should be done on a smooth, level surface such as a gym floor. Place a cone or object at each end of the course.

1. The student should become familiar with the demonstrator's movement. Kneeling down and placing the wheel and axle directly in front of him or her. The student places both hands on the axle (Figure 1).



*Figure 1*

2. Keeping a firm grip on the axle, the student gently inches the wheels forward while keeping his or her elbows slightly bent to control speed and movement (Figure 2).



*Figure 2*

3. Have the student push the wheels and axle forward approximately one foot. Ask the student to think about how their arms, chest, shoulders, abs, and trunk muscles feel and react to the movement.
4. Now have him or her reverse the motion by pulling back to the starting position. Ask them how differently did the muscles feel while doing this.
5. Set up a cone or object 15 feet or so in front of the start line you determine. You can set up multiple cones if there are more demonstrators and adequate room.
6. The student pushes the demonstrator slowly while walking and holding on to the axle. Have him or her move around the cone, return to the starting position, and move to the end of the line (Figure 3).



*Figure 3*

## **Safety**

- Use this device only in the manner discussed and illustrated in this guide.
- Do not attempt to stand on the wheel and axle – serious injury could occur.

## **Curriculum**

For curriculum to lead a more in-depth activity with the Wheel & Axle Demonstrator, consider the *STEM in the Gym – Simple Machines* book available at [shop.pitsco.com/STEMnGym](http://shop.pitsco.com/STEMnGym).



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