

# Spotlighting the Scooter

Item #1021, 10599, 12136, 12142

## When Teaching Movement Concepts and Skills

Scooters are a great tool for learning about concepts related to force. Force is required to start, speed up (accelerate), slow down (decelerate), change direction, or stop motion. Force is a critical component in understanding Newton's Laws of Motion. Children can explore the applications of force in all three of Newton's Laws through scooter activities.

## Scooter Activities for Newton's First Law Concepts

Newton's First Law of Motion: an object at rest tends to remain at rest, and an object in motion tends to remain in motion at the same speed and in the same direction.

An object at rest will remain at rest unless acted upon by an outside force.

- Place a scooter on the gym floor; show the students that the scooter will not move unless a force (push or pull) is applied to the scooter.
- Explore using various body parts (hand, foot, knee, elbow, fingers, etc.) to put the scooter in motion. A push or a pull is needed for an object to be set in motion. The object moves in the direction of the force.
- Explore using pushing and pulling actions to move the scooter.
- Explore using force to propel the scooter forward, backward, right, and left. A push or pull action must be exerted to change the direction of a moving object.
- Explore following the path of a moving scooter and then applying a different force to change the direction of movement.

## Scooter Activities for Newton's Second Law Concepts

Newton's Second Law of Motion: The speed of an object is proportional to the force applied and inversely proportional to the object's mass.

The greater the amount of force applied to an object, the greater the speed that the object will travel.

- Push an empty scooter with light force; watch the speed of travel and mark the spot where the scooter stops. Push an empty scooter with heavy force; watch the speed of travel and mark the spot where the scooter stops. Discuss the difference in speed and distance traveled with each type of force. Ask the students to repeat this activity while sitting on the scooter.

- Use the experiment listed above with a partner sitting on the scooter. Which force causes the scooter to travel fastest and farthest? Discuss the result with the students.

If the same amount of force is applied to two objects of different mass, the one with the smaller mass will move faster.

- Explore pushing various sizes of scooters and scooters made from various materials.
- Explore pushing partners of different masses on the scooter. Push a partner to a designated line in the middle of the gym. The partner will stop pushing at the line. Observe the speed and distance the child on the scooter continues to travel. Choose a partner with a different mass. Repeat the activity using the same amount of force and observe the results. Which partner traveled fastest and farthest? Why?

FYI—How to safely move a heavy object. The application of force should be in the direction of the intended motion. The feet should be placed in a stride position with the legs in the direction of the intended motion. The hands should be placed apart for better control of the object, near the object's center of gravity. Explore the application of these tips pushing a partner on the scooter.

## Scooter Activity for Newton's Third Law Concepts

Newton's Third Law of Motion: For every action there is an equal and opposite reaction.

- Explore the action/reaction concept of using the pull/push arm pattern for the freestyle swimming stroke. From a prone position on the scooter, use the arms alternately in the pull/push pattern. The final backward push of the stroke results in a forward motion of the body.

## More Movement Concepts and Skills

- Use scooters for body awareness activities. Move the scooter using various body parts and in various body positions (sitting, kneeling, prone, etc.). Never allow students to stand on a scooter.

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- Use scooters to explore how various body parts and body positions work (by pushing or pulling) together in order to move the scooter in different directions (forward, backward, left, right, clockwise, and counterclockwise).
- Use scooters as a tool for demonstrating the different directions that result from using a pushing/pulling motion to move the scooter.

### When Teaching Games and Sports

A number of traditional games can be played while riding on a scooter.

- Try scooter hockey, scooter soccer, scooter rimbball, scooter volleyball. See the FlagHouse catalog for scooter-ready games.
- Use as a means to increase independent mobility and participation for students dealing with mobility limitations. See FlagHouse "Special Populations" catalog for other independent mobility aids such as: Ready Racer, WanderWagon, Krazy Kar, and Flying Turtles. These are exciting ride-ons that all students will be eager to experience!

### When Teaching Fitness Education

Students may travel for distance (endurance), a burst of speed (strength), or combinations of distance and speed (endurance and strength) when performing fitness activities.

- Perform the following upper-body activities on the scooter: In a prone position, use the arms only (both arms together, or alternately use the right and left arms) to pull the scooter forward in a prone position. Use the arms only (both arms together or alternately use the right and left arm) to push the scooter backward in a seal-walk position with the lower legs) and feet resting on the scooter. Use the upper body to move the scooter, and in a crab-walk position with the feet resting on the scooter, use the upper body to move the scooter.
- Perform the following lower-body activities on the scooter: In a sitting position, use only the legs (both legs together or alternately use the right, then left leg) to pull the scooter forward. In a sitting position, use only the legs (both legs together or alternately use the right and left leg) to push the scooter backward.
- Perform the following upper and lower body coordination and strengthening activity on the scooter: In a prone position, use the right arm and left leg in unison to pull the scooter forward. Use the left arm and right leg to continue the forward movement of the scooter.
- Continue to alternate the arm and leg actions.

### When Teaching Educational Gymnastics

Scooter activities are a fun way to explore concepts of balance and rotary motion. These two areas can be

enhanced with scooter activities.

- Explore which body positions offer more stability on a scooter. Have students assume various body positions (sitting, kneeling, and lying) at low, medium and high levels. Using the concepts of balance (a body is more stable when it is supported by a large base of support and has a low center of gravity), discuss why some positions are more stable than other positions. Have students use the concepts of balance to explain why they should never stand on a scooter.
- Use scooters to explore rotary motion (spinning) concepts. Students can explore spinning concepts around a vertical axis (sitting/kneeling) or a horizontal axis (lying). In order to spin fast on the scooter, the student will need to pull the arms and legs toward the body. To slow down or stop a spinning action, the student will need to extend the arms and legs away from the body. Limit the amount of time students spend spinning, as this activity can cause dizziness.

### When Teaching Cooperative/Team-Building Activities

Use scooters for the following partner activities:

- Pushing/pulling a partner safely on a scooter (caring for others) and designing two-person push/pull combinations on the scooters (creating with others). When working with partner activities, one partner or both partners can use the scooter(s).
- Working in cooperative teams of 3–5, have students design and navigate an obstacle course on scooter mobiles. Scooter mobiles are made by placing a folded gymnastic mat on the scooters (one scooter per student team). Team members must arrange the scooter under the folded gym mat so that the scooter and the mat can support all team members as they move on the scooter. All team members must be on the top of the mat while the scooter mobile is in motion. Team members may move the scooter mobile from a sitting, kneeling, or lying position. Team members may not serve as a motor by pushing or pulling from either end of the scooter mobile.



### **Integrating With Other Subject Areas**

- Use scooters to practice traffic safety—design a roadway in the gym using various traffic signs found in the community (stoplights, yield signs, passing zones, turning lane only, etc.). The students must navigate the roadway in their cars (scooters) following the rules and regulations posted.
- Use scooters when practicing the pathways used in reproducing various shapes, numbers and alphabet letters.

### **Scooter Safety**

- Remind students to keep fingers, hair and clothing away from position themselves the wheels of the scooter.
- Remind students to place the body squarely on the scooter. Off-balance placement may result in the scooter tipping.
- When working with a partner, the partner applying the movement force is also responsible for the safety of the partner riding on the scooter.
- Never allow students to stand on the scooter.

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**In Canada:** FlagHouse Canada, 235 Yorkland Blvd., Suite 105, North York, Ontario M2J 4Y8 Phone 800.265.6900 416.495.8262 Fax 800.265.6922

**International Customers:** FlagHouse, 601 FlagHouse Drive, Hasbrouck Heights, New Jersey, 07604-3116 USA Phone 201.288.7600 Fax 201.288.7887