

## Lesson Plan

### Name Five: Inertia Examples

**Book:** *Focus on Inertia*

**Series:** Hands-On STEM

**Level:** Beacon

#### Objective

To help students practice coming up with specific examples that illustrate a concept described in a text.

#### Supplies

- *Focus on Inertia* book
- Name Five! Categories (attached)
- Timer or stopwatch
- Paper and pencils

#### Before the Activity

Read through the *Focus on Inertia* book, or assign it to students to read on their own.

#### Activity

Divide the students into two teams. Explain that you will read a category, such as “objects with lots of inertia” or “things that could cause a car to stop.” Then you will set a timer for one minute. During that minute, members of each team must work together to write down five objects or situations that fit the category.

When the time is up, each team should read their answers out loud. Give each team one point for each correct answer. If a team correctly comes up with five answers in the allotted time, give that team five additional points. Also give each team one bonus point for each answer that the other team didn't think of. Then reset the timer and move on to the next category. However, remind students that they cannot reuse an answer from a previous category.

#### Name Five! Categories

1. Objects that have rotational motion.
2. Objects that have straight motion.
3. Objects with large moments of inertia.
4. Objects with small moments of inertia.
5. Objects with lots of inertia.

6. Objects that do not have much inertia.
7. Moving objects that will keep moving unless something stops them.
8. Objects that will stay still unless something moves them.
9. Objects that could stop a cart from rolling down a hill.
10. Ways a person could make a bowling ball start moving.
11. Ways a person could make a paper airplane start moving.
12. Things that could cause a motorcycle to stop moving.
13. Things that could cause a soccer ball to stop moving.
14. Reasons inertia would be different in outer space than it is on Earth's surface.
15. Reasons inertia would be different underwater than it is on Earth's surface.
18. Things you could do to change a merry-go-round's rotational motion.
19. Things you could do to stop a bicycle tire's rotational motion.
20. Things you could do to change the motion of a charging rhino.
21. Things you could do to make a can of soup start moving in a straight line.
22. Things you could do to stop a chicken that is running in a straight line.
23. Objects with more inertia than a car speeding down the highway.
24. Objects with less inertia than a ping-pong ball sitting a table.
25. Objects with more inertia than a tractor wheel lying on the ground.
26. Objects with less inertia than Frisbee flying through the air.
27. Situations where the net force causes an object to move forward.
28. Situations where the net force causes an object to move backward.
29. Situations where a net force causes an object to stay still.
30. Things that could keep moving because of inertia if a car screeches to a stop at a red light.
31. Things that could keep moving because of inertia if a serving cart crashed into a wall at a restaurant.
32. Things that would change a car's net force from forward to backward.
33. Things that would change a softball's net force from backward to forward.
34. Situations when inertia is helpful in playing sports.
35. Situations when inertia is not helpful in playing sports.

### **Evaluation**

The first team to get to 300 points wins.

### **Standards**

This lesson may be used to address the Common Core State Standards' speaking and listening standards, grade 4 (SL 4.1), and the National Council for Social Studies Standards Content Standard 8.