Name: _____ Date: _____

Why Water Stays in a Spinning Salad Spinner

Circle group

A salad spinner looks like a plain kitchen tool. But it teaches a lot about motion. When you wash lettuce, drops cling to the leaves. Put the lettuce in the basket and spin it fast. The water leaves the leaves and gathers in the outer bowl. What pulls the water away? In truth, nothing does. To see why, we look at inertia.

Inertia is the tendency of an object to keep doing what it is already doing. A moving object keeps going in a straight line at the same speed unless a force changes its motion. A drop of water on a leaf is the same. When the basket spins, the drop wants to go straight ahead. At each moment, straight ahead points along the edge of the circle, not around it.

To make something move in a circle, a force must keep pulling or pushing it toward the center. The basket holds the leaves, so they go around. The water is only loosely stuck to them. The sticking is not strong enough to pull the drops around the curve. The drops fly off in straight lines through the holes in the basket.

The same rule explains why a car passenger seems to slide toward the outside of a turn. The car turns, but the passenger's body tries to go straight. Then the door or seat belt pushes inward. Nothing flings the passenger outward. The body just follows inertia.

Questions

1. Where does the water gather when the spinner turns fast?

_____

_____

2. What is inertia?

_____

_____

3. Which way does a drop of water want to move when the basket spins?

_____

_____

4. Why do the leaves stay in the basket while the water leaves?

_____

_____

5. What must happen to make an object move in a circle?

_____

_____

6. Why does a passenger seem to slide toward the outside of a turn?

_____

_____

Words to know

inertia: the tendency of an object to keep moving or keep still
force: a push or a pull
curve: a smooth bend that is not a straight line
basket: a container with holes in its sides

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Water Stays in a Spinning Salad Spinner

Triangle group

A salad spinner looks like a plain kitchen tool, but it is a neat lesson in motion. When you wash lettuce, drops of water cling to the leaves, but if you put the lettuce in the basket and spin it fast, the water leaves and gathers in the outer bowl. What pulls the water away? In truth, nothing does, and understanding the reason takes a close look at inertia.

Inertia is the tendency of an object to keep doing what it is already doing. A moving object keeps going in a straight line at the same speed unless some force changes its motion. A drop of water on a leaf is no different. When the basket spins, the drop wants to go straight ahead, which at any moment points along the edge of the circle rather than around it.

To make something travel in a circle, a force must keep pulling or pushing it toward the center. The basket can supply this force for the lettuce, because the leaves are held inside it, but the water is only loosely stuck to them, and the sticking is not strong enough to pull the drops around the curve, so the drops escape in straight lines and pass through the holes in the basket.

The same rule explains why a car passenger seems to slide toward the outside of a turn. The car turns, and the passenger's body tries to keep going straight until the door or seat belt pushes inward. Nothing flings the passenger outward. The body simply obeys inertia.

Questions

1. Where does the water gather when the salad spinner turns fast?

_____

_____

2. What is inertia?

_____

_____

3. In which direction does a drop of water want to move when the basket spins?

_____

_____

4. Why do the leaves stay in the basket while the water leaves?

_____

_____

5. What must happen to make an object travel in a circle?

_____

_____

6. Why does a passenger seem to slide toward the outside of a turn?

_____

_____

Words to know

inertia: the tendency of an object to keep moving or keep still
force: a push or a pull
curve: a smooth bend that is not a straight line
basket: a container with holes in its sides
obeys: follows a rule

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Water Stays in a Spinning Salad Spinner

Square group

A salad spinner may look like an ordinary kitchen gadget, but it offers a neat lesson about motion. After lettuce is washed, droplets cling stubbornly to the leaves. Place the lettuce in the basket, spin it rapidly, and the water departs from the leaves and collects in the outer bowl. What drags the water away? Strictly speaking, nothing does, and understanding why requires a careful look at inertia.

Inertia is the tendency of an object to continue doing whatever it is already doing. A moving object keeps traveling in a straight line at a constant speed unless some force alters its motion. A droplet of water on a leaf is no exception. When the basket spins, the droplet tends to continue straight ahead, and at any given instant, straight ahead points along the edge of the circle instead of around it.

To make something travel in a circle, a force must continually pull or push it toward the center. The basket can supply this for the lettuce, because the leaves are held firmly in place. The water, however, is only loosely attached to them, and that weak attachment is not strong enough to haul the droplets around the curve. They escape in straight lines and pass out through the holes in the basket.

The same principle explains why a car passenger seems to slide toward the outside of a turn. The car turns, but the passenger's body tries to keep moving straight until the door or the seat belt pushes inward. Nothing flings the passenger outward. The body is simply obeying inertia.

Questions

1. Where does the water collect when the salad spinner turns rapidly?

_____

_____

2. What is inertia?

_____

_____

3. In which direction does a water droplet tend to travel when the basket spins?

_____

_____

4. Why do the leaves remain in the basket while the water departs?

_____

_____

5. What is required to make an object travel in a circle?

_____

_____

6. Why does a passenger seem to slide toward the outside of a turn?

_____

_____

Words to know

inertia: the tendency of an object to keep moving or keep still
force: a push or a pull
curve: a smooth bend that is not a straight line
basket: a container with holes in its sides

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Why Water Stays in a Spinning Salad Spinner

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Why Water Stays in a Spinning Salad Spinner

Easier · 239 words · Flesch-Kincaid grade 4.1

1. In the outer bowl.
2. The tendency of an object to keep doing what it is already doing.
3. Straight ahead along the edge of the circle, not around it.
4. The basket holds the leaves, but the water is stuck too loosely to be pulled around the curve.
5. A force must keep pulling or pushing it toward the center.
6. The body keeps going straight until the door or seat belt pushes it inward.

Triangle: Why Water Stays in a Spinning Salad Spinner

This passage · 258 words · Flesch-Kincaid grade 7.5

1. In the outer bowl.
2. The tendency of an object to keep doing what it is already doing.
3. Straight ahead along the edge of the circle, not around it.
4. The basket holds the leaves, but the water is stuck too loosely to be pulled around the curve.
5. A force must keep pulling or pushing it toward the center.
6. The body keeps going straight until the door or seat belt pushes it inward.

Square: Why Water Stays in a Spinning Salad Spinner

Harder · 262 words · Flesch-Kincaid grade 8

1. In the outer bowl.
2. The tendency of an object to continue doing whatever it is already doing.
3. Straight ahead along the edge of the circle, not around it.
4. The basket holds the leaves, but the water is too loosely attached to be hauled around the curve.
5. A force must continually pull or push it toward the center.
6. The body keeps moving straight until the door or the seat belt pushes it inward.