

Force and Motion

Forces are found everywhere in the universe. A force is a push or pull. Pushes and pulls cause objects to change their motion. A force can be as big as the pull of a star on a planet. It can be as small as a girl raking leaves. A push is a force that moves objects away from something. A pull is a force that moves an object closer to something. A force can change the motion of an object by starting its movement. It can change its speed or direction. It can even stop it.

Friction is the name of the force that slows or stops motion between two surfaces that are touching. Rubbing your hands together is an example of friction. Friction can exist between any two surfaces. There is more friction between rough surfaces than smooth surfaces. Friction can be very useful. Without friction between your pencil and your fingers, you would not be able to write. Friction that takes place between the air and objects is called air resistance. Airplanes have a sleek design in order to help the air slide over them smoothly so that they can move faster.

Gravity is another type of force that pulls objects toward each other. While friction acts on objects that are rubbing together, gravity acts on objects at a distance. Earth's gravity holds the Moon in orbit around the Earth. Objects with greater mass (amount of matter in the object) have stronger gravity. Earth has a greater gravity than the Moon. It has a greater mass. Gravity is the reason why things fall.

Name: _____

1. What is a pull?

- a. moving objects away
- b. moving objects closer
- c. friction
- d. changing to faster speed

2. Which is the best example of gravity?

- a. pushing a box across a floor
- b. a river flowing downhill
- c. Raking leaves
- d. rubbing your hands together

3. Why do things fall?

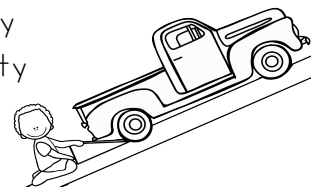
- a. The object is being pulled to the ground
- b. the object is being pushed into space
- c. they have a sleek shape
- d. the distance the object travels over time

4. Which is the best example of a force?

- a. a push or pull
- b. holding a pencil
- c. gravity
- d. all of the above

5. Which is a true statement?

- a. lighter objects have greater gravity
- b. heavier objects have greater gravity
- c. heavier objects have less gravity
- d. None of the above



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1. If you apply a force to an object, what could happen to it?

2. What is mass?

3. What is air resistance?

4. Give two examples of friction.

5. Would there be more friction between a snowboard gliding across snow or moving a box on carpet? Why?

Directions: Label the picture with either push, pull, friction, or gravity.



