

Movement, Direction, Shape

You have probably heard the word "force" before in conversations. Here are a few examples: "the rocket had a lot of *force* at blast off" or "the *force* of the storm blew the roof off the building." What is force? **Force is defined as a push or pull on an object.**

When you ride a bike, your foot pushes against the pedal. The push makes the wheels of the bike move. When an apple falls from a tree, it is *pullled* to the ground by gravity. Forces affect how objects move. They may cause motion; they may also slow, stop, or change the direction of motion of an object that is already moving.

Force can change a number of things about an object. They include:

- direction
- speed
- both direction and speed
- shape

Some examples of force changing the **direction** of an object.

- A good soccer player can control the motion of a soccer ball by applying a force that changes the ball's direction but not its speed.
- Swinging a ball on a string around your head.

Some examples of force changing the **direction and speed** of an object.

- A tennis player returning a very fast serve.
- Starting on a swing.

Some examples of force changing the **shape** of an object.

- A hammer beating a piece of metal.
- A trampoline deforming as someone jumps on it.

