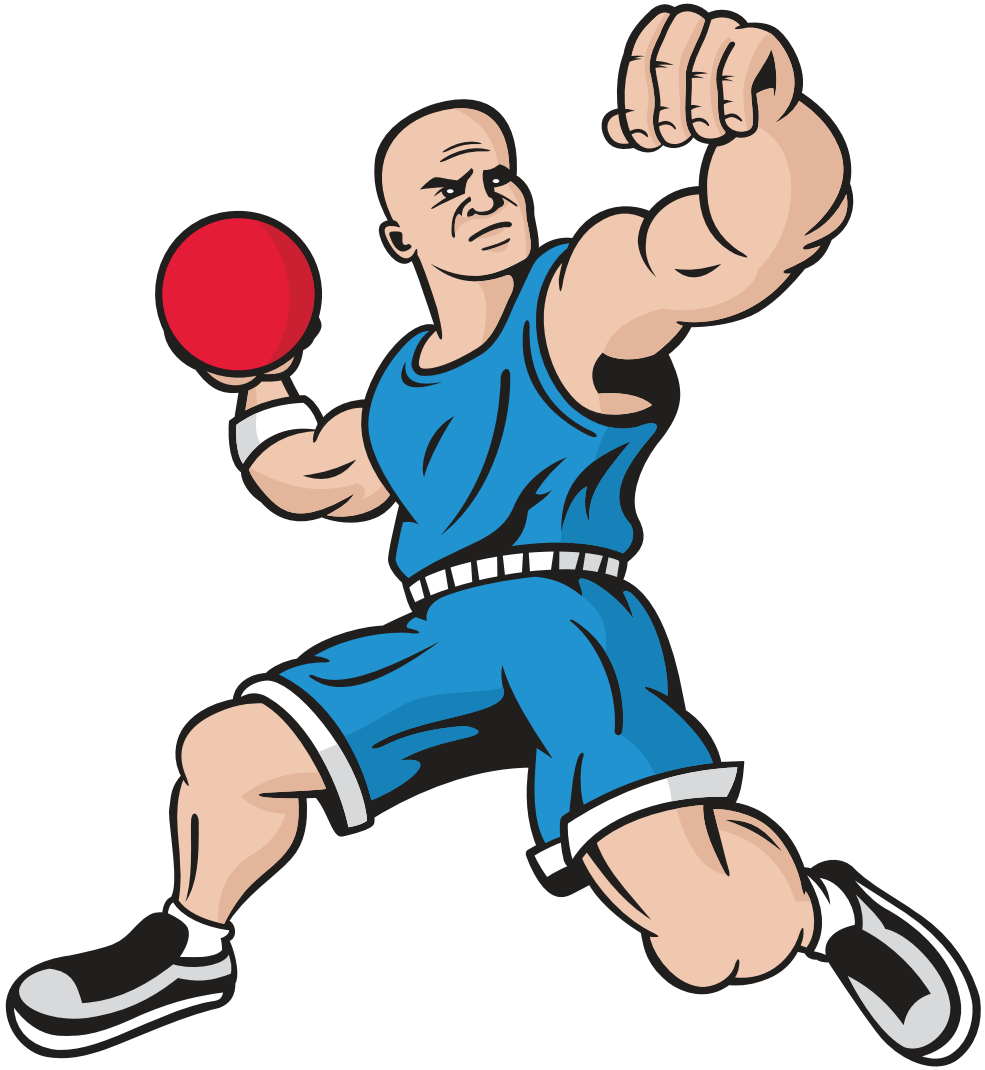
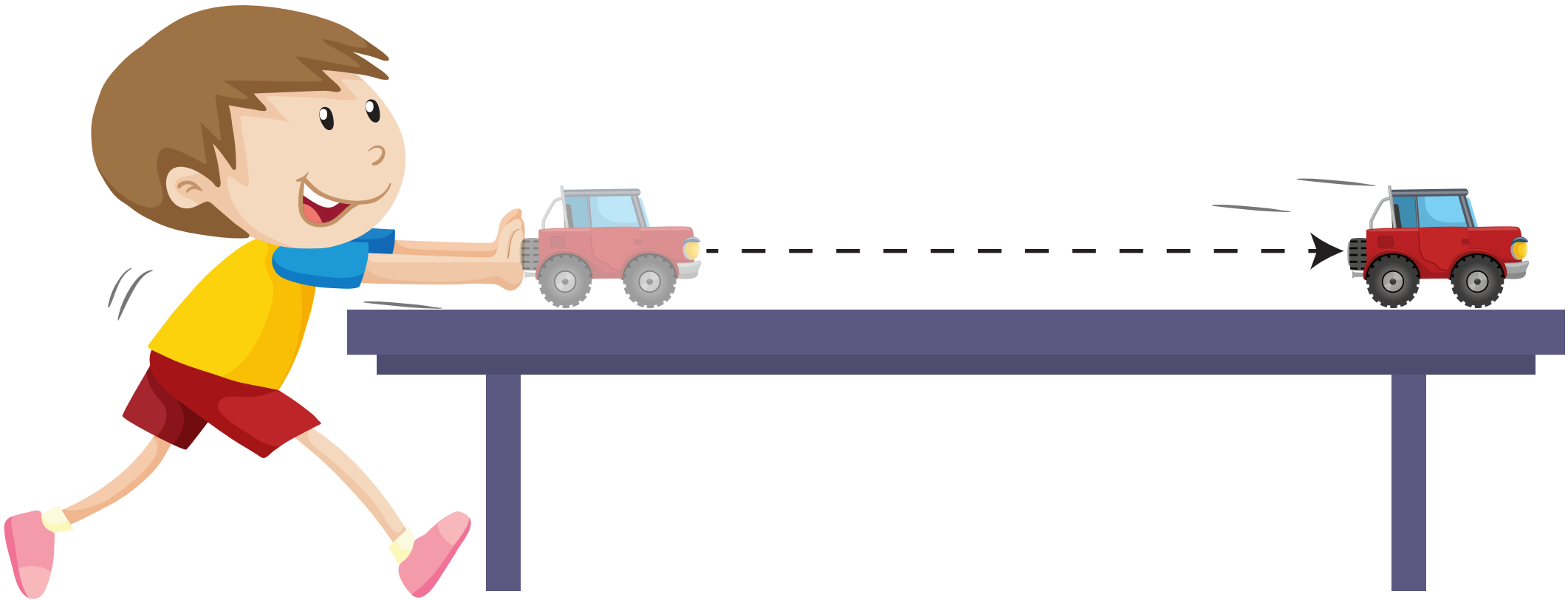
FORCES

The effect of forces on objects

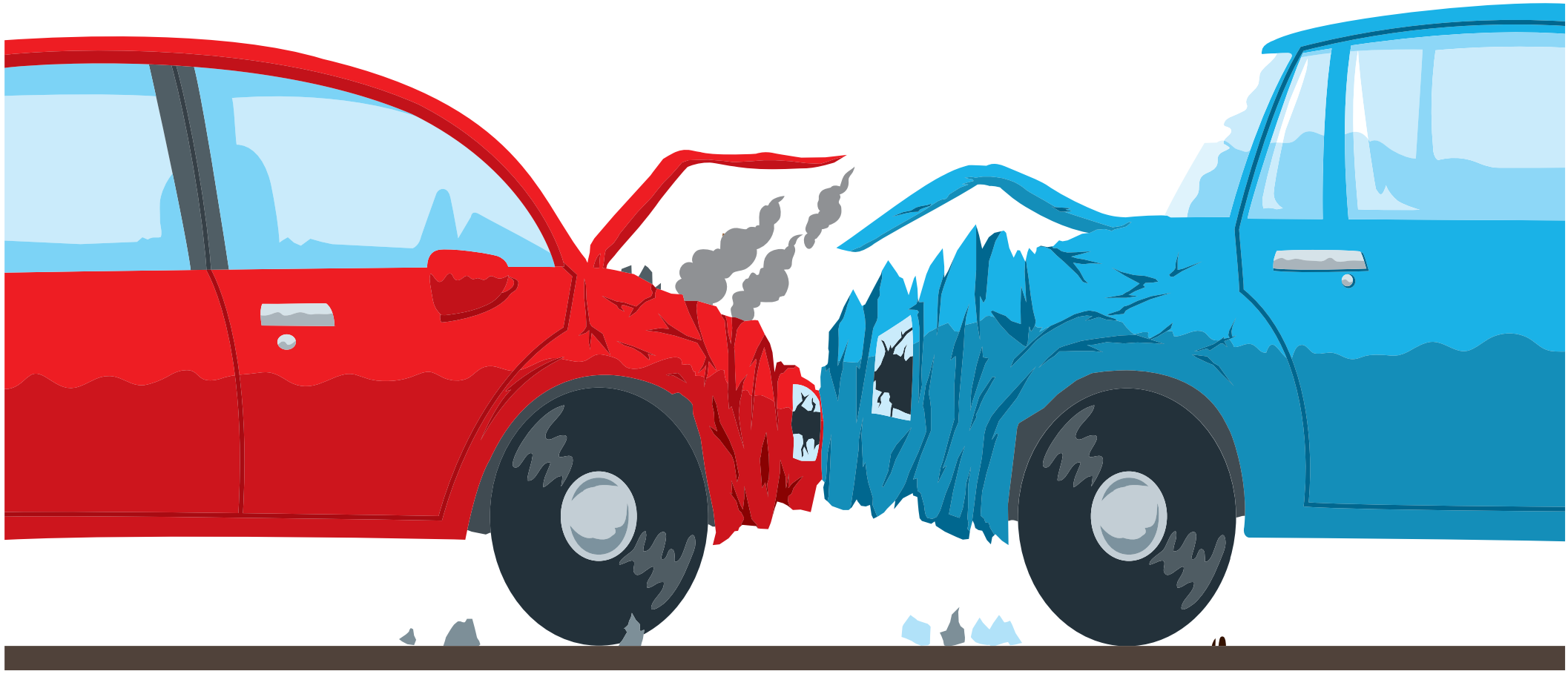


A force can cause an object to start moving.

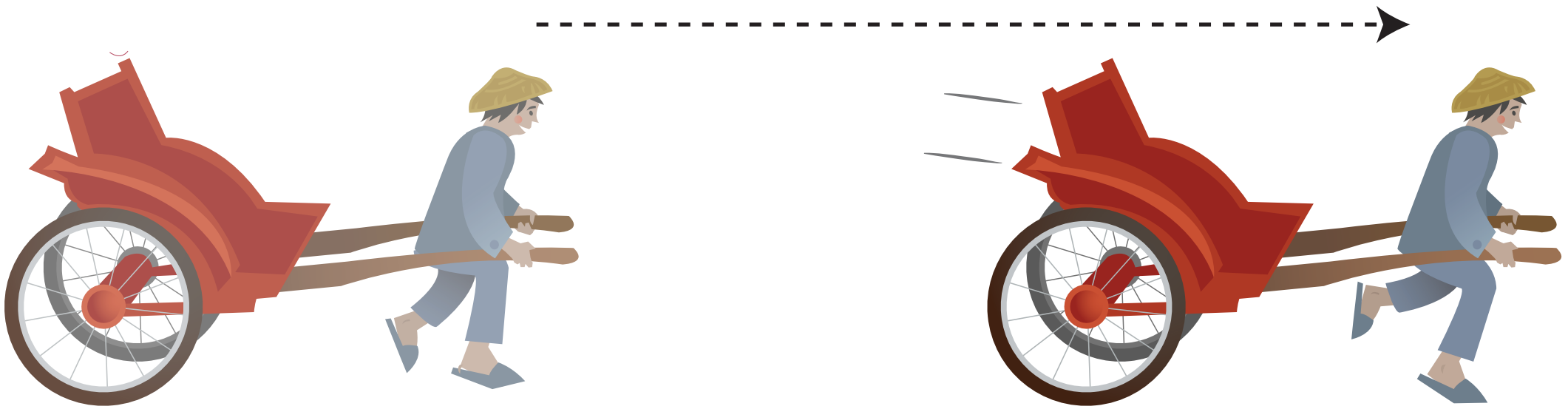


A force can cause an object to stop moving.

A force can cause an object to change its shape.

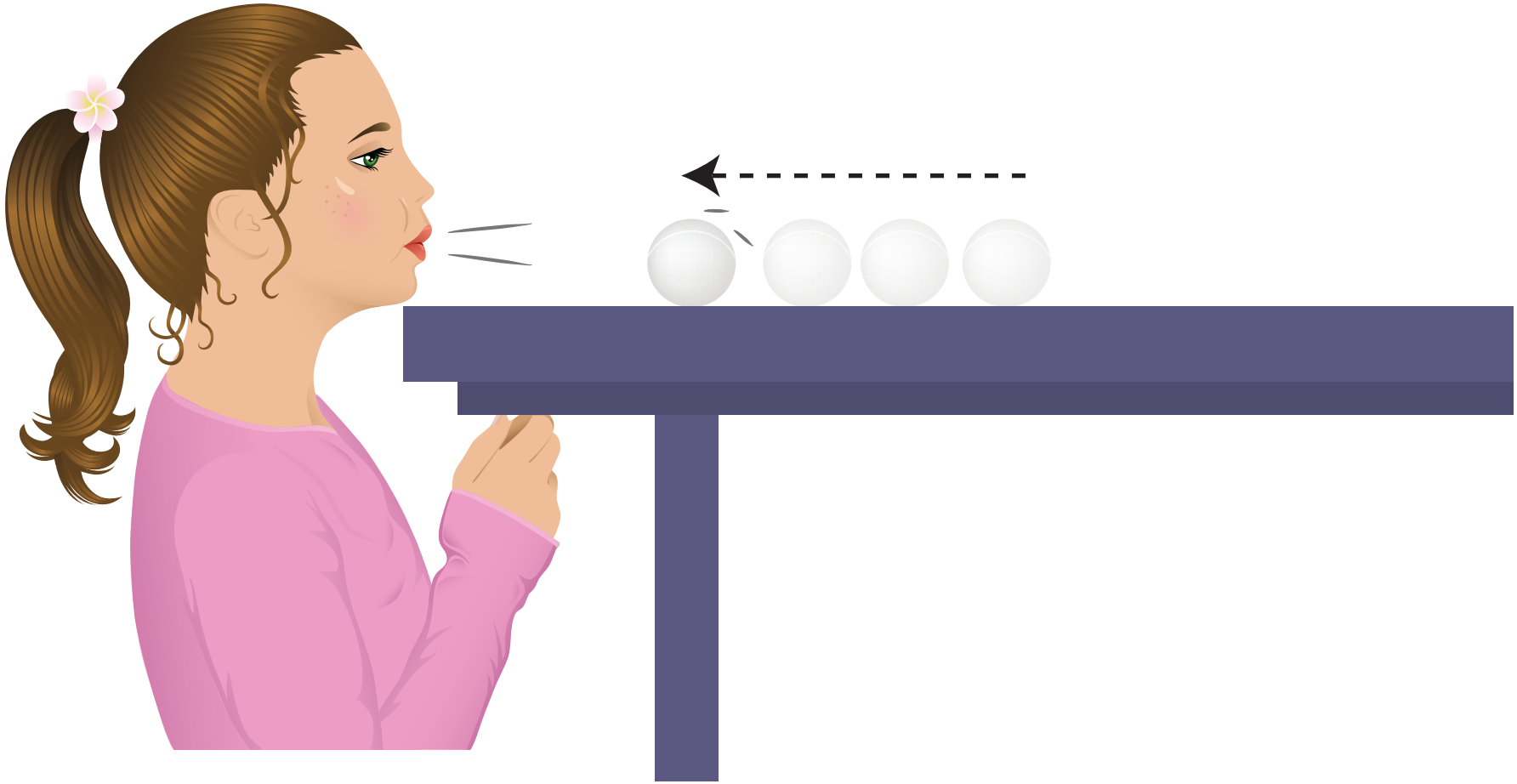


A force can cause an object to accelerate (move more quickly).



The rickshaw accelerates when the man pulling the rickshaw goes from a walk to a run.

A force can cause an object to decelerate (move more slowly).

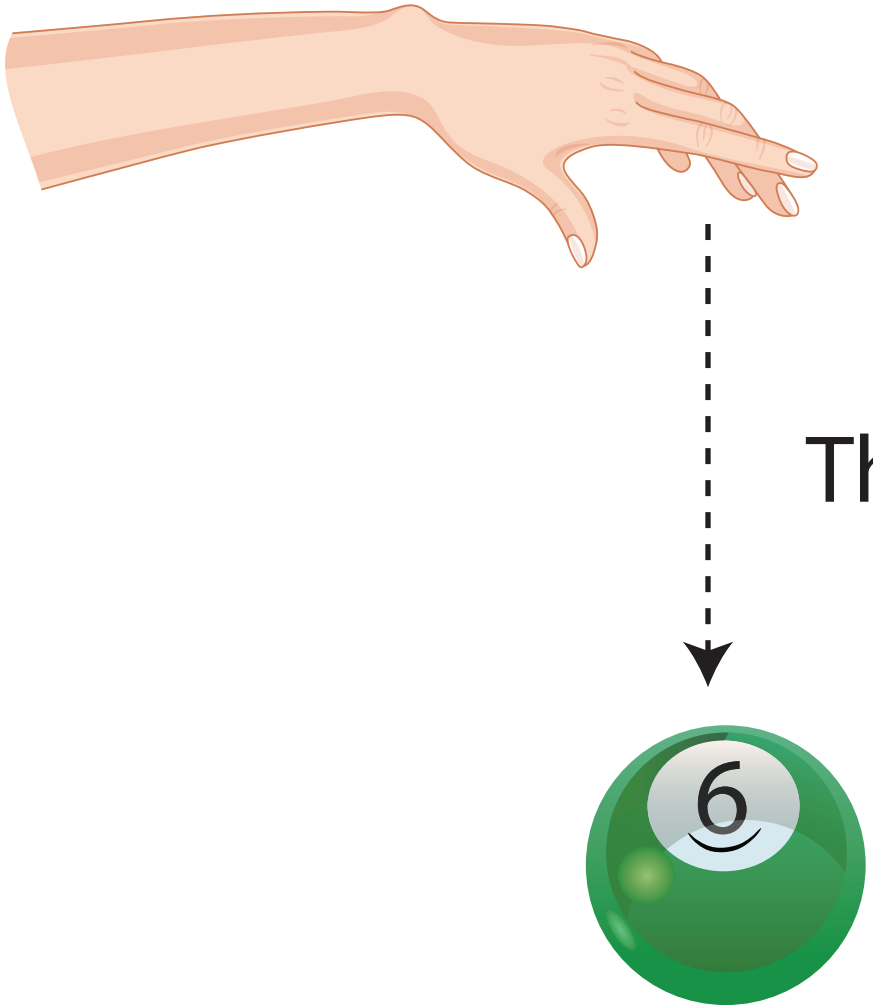


The rolling ball decelerates as the girl blows on it.

How do forces effect the movement of objects in different situations?

Dropping an object

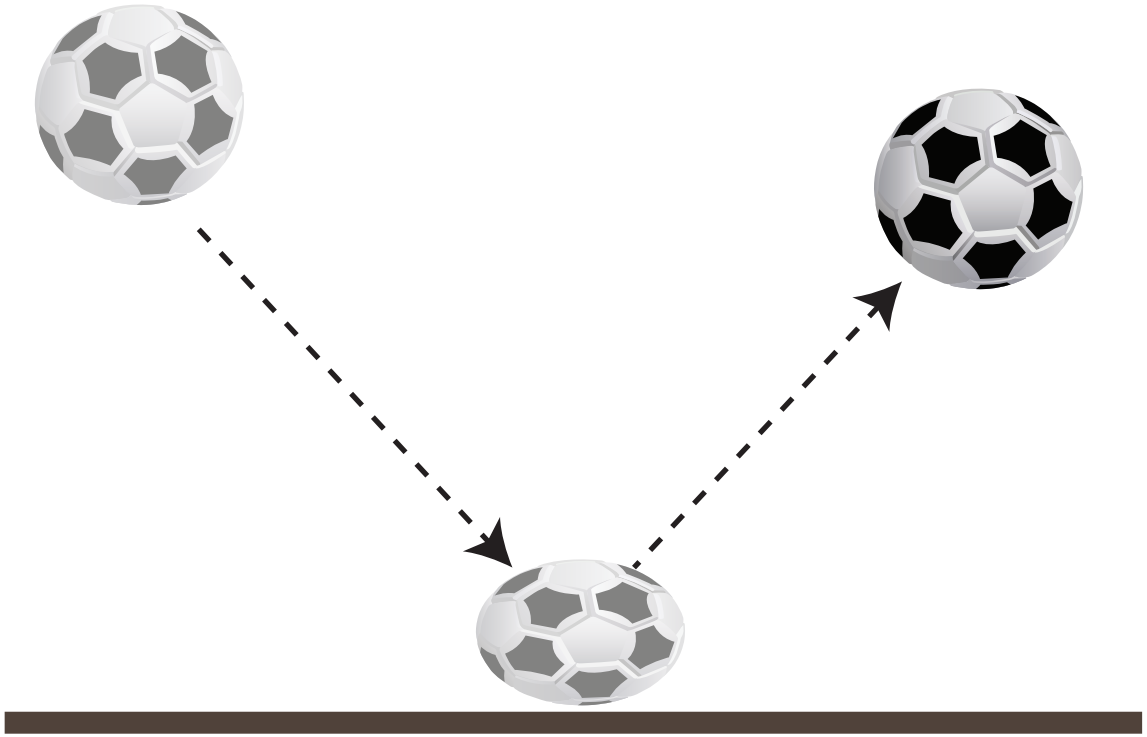
When an object is released the force of gravity pulls the object towards the ground.



Bouncing a ball

The force of gravity pulls the ball downwards.

When the ball hits the ground it stores the energy from the downward force. The energy in the compressed ball is then released back causing it to bounce.



Throwing a ball

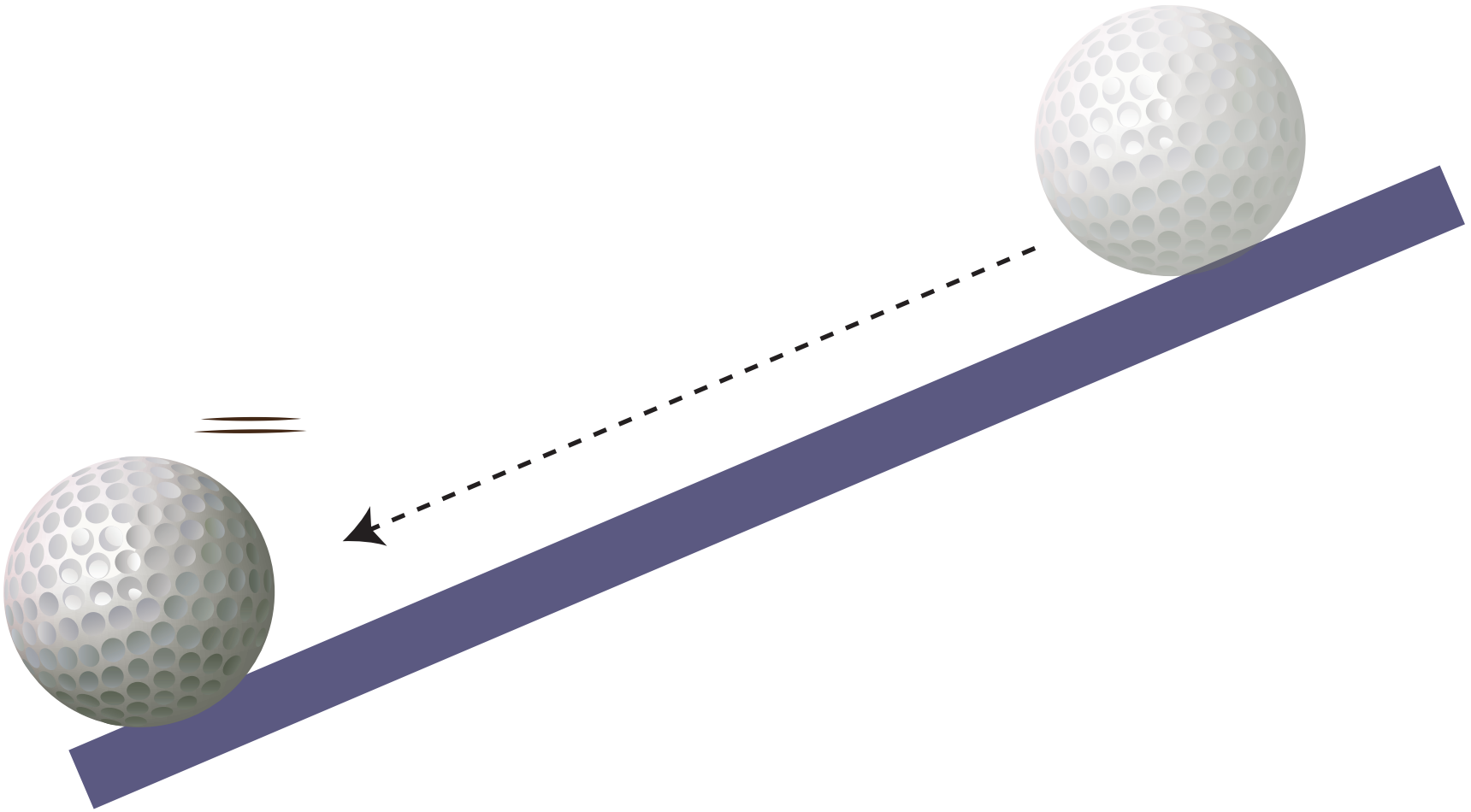
The forces created by the thrower are transferred to the ball, pushing the ball away from his body when he releases it. The more force the thrower generates the more quickly and further the ball will travel.

Hitting a ball

The harder the batsman swings the bat the more forces (energy) he produces. The energy is then transferred to the ball when the bat strikes it, pushing it in the opposite direction.

A rolling object

A rolling ball has energy. The more quickly it moves the more energy it produces.



Discussion Questions:

Why does a slow moving car cause less damage during an accident?

Why does swinging a bat more quickly hit a ball further?

Why does a rubber ball bounce, whereas a metal ball doesn't?