

Name: _____

Period: _____

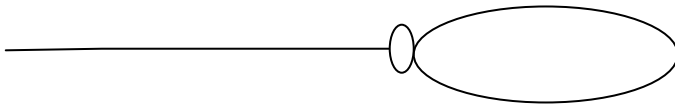
Newton's Third Law of Motion Action/Reaction

Isaac Newton was the first to notice that forces always act in pairs. His third law of motion states that every time one object exerts a force on another object, the second object exerts a force that is equal in size and opposite in direction back on the first object. Or, as it is more often referred: **“For every action, there is an equal and opposite reaction”**.

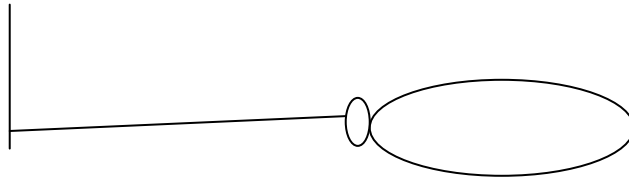
In this activity we will be identifying what the action force is, in what direction the force is being exerted, then what the reaction force is, and the direction of the reaction force.

Directions:

1. Attach a balloon with tape to the end of flexible straw that is furthest away from the bend. Make sure no air can escape around the straw. Blow up the balloon, then set it on the floor or a table. Let go of the end of the straw and observe what happens. On the lines below, write what you observed. Then on the drawing, draw and label an arrow that represents the action force and the reaction force.



2. Next, blow up the balloon and bend the flexible end to a 90° angle. Set the balloon down on the floor or a table. Release the air in the balloon. Does the balloon move in the same direction as in #1? If not, why not? Describe what happens on the lines below. Then draw the action and reaction forces as in #1.



3. Now try to bend the straw at a different angle of your choice. (You may need tape to hold it in place.) Release the straw as before. Draw what you observe below, labeling the action and reaction forces.

4. Describe what you observed during all phases of the activity using Newton's Third Law of motion. You must use the words action, reaction and force.
