

For every action there is an equal and opposite reaction. Children on a playground often have a bouncy ball to play with. When you slam a ball to the ground, it will bounce back up. The harder you push it toward the ground the farther it will travel back. The action is you pushing it to the ground, the reaction is the ball bouncing back up. If a cyclist rides his or her bicycle into a wall (we suggest you don't try this) they will not simply stop, rather you will notice they bounce back away from the wall first.

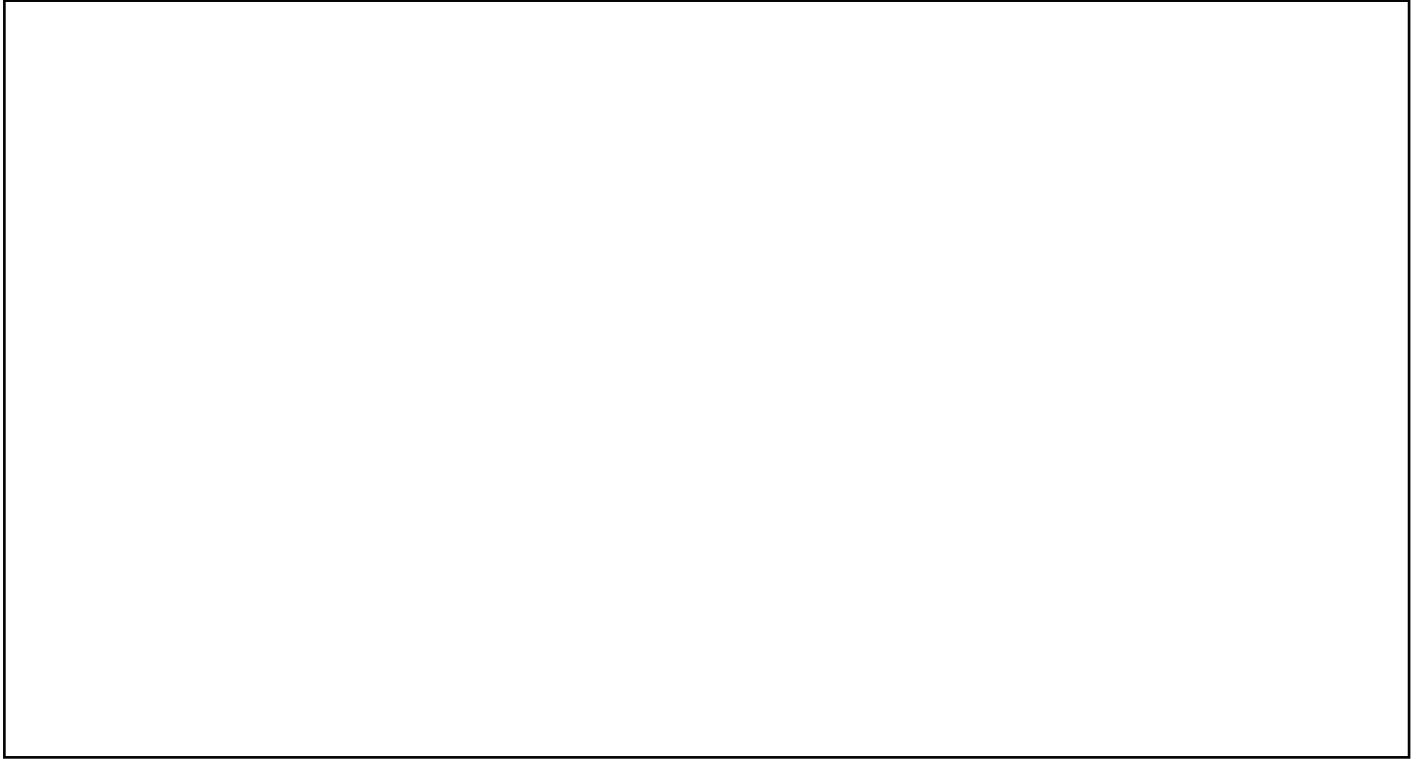
$$F_{AB} = -F_{BA}$$

It is important to note that we need to have the assistance of outside forces to make this possible. Recall that energy cannot be created, thus you cannot, for example, push your hands downward quickly and expect to float upward. In order to create a change in motion there will need to be a force other than yourself acting upon you.

1. Describe an example in your own life when you have seen Newton's Third Law of Motion.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

2. Use Newton's Third Law of Motion and information from the text to draw a picture that explains why airplanes do not fall out of the sky.



3. If two students are running down the hall toward each other, trying to get to class, and they have the same mass and acceleration, what will happen when they collide? Will their forces cancel out or will each one experience a reaction? Use words and a diagram or picture to explain your reasoning.

