

Submitted by: GENERATION CURES

**TITLE:** NEWTON'S THIRD LAW

**SUBJECT:** Science

**GRADE:** 6th

**RECOMMENDED TIME:** 25-30 minutes

**GENERATION CURES CONTENT:** Zebrafish Webisode 7-Revelations

**LEARNING GOALS:**

Students will be introduced to the basics of physics through dodge ball and the completion of Newton's three laws of motion. They should develop an understanding of Newton's third law and the accompanying vocabulary- action, reaction, and momentum. The aim here is to help students understand and define the actions they observe.

**RESOURCES/MATERIALS NEEDED:**

- Computer / Internet / Projector
- Pen / Pencil / Paper
- Zebrafish Webisode 7-Revelations ([www.kids.generationcures.org](http://www.kids.generationcures.org))
- Dodge ball or another soft ball
- Wall- preferably exterior
- Dictionary: define terms
  - Action- in the context of Newton's third law, action refers to force applied to an object. If Object A connects with and impacts Object B, then the force exerted by Object A upon Object B would be called the *action*.
  - Reaction- the equal and opposite force of an object in response to an *action* from another object. In the above example, if Object A exerted an *action* upon Object B, then the *reaction* would refer to the force Object B exerts back on Object A.

**BACKGROUND:**

Jay skips his medicine. No big deal. Until he learns that playing dodge ball in gym is easier than dodging his disease. It takes his breath away... and that's no game. In this webisode, not only is Jay dodging things, but Plinko gets in on the game.

**LESSON STEPS:**

- After students review Webisode #7 "Revelations" in conversation with the entire class, ask them to pull out their previous drawing of the first two laws of motion. Review in a classroom

discussion the first two laws of motion- acceleration and inertia. If students have trouble remembering them, review the dodge ball activity.

- Write on the board Newton’s most famous and final law of motion:

Example:

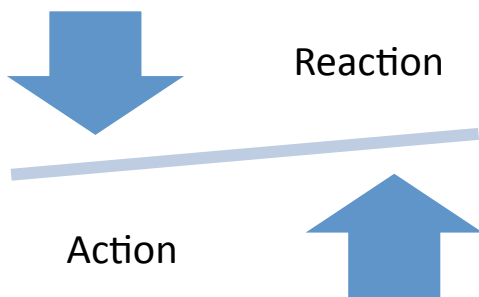
“For every action there is an equal and opposite reaction.”

Or a different way:

“When force is applied to an object, the object exerts an equal force in the opposite direction.”

- Return to the dodge ball experiment. This time bouncing the ball on the ground, explain that the force exerted upon the object in motion (the ball) comes from an immovable object (the ground). The force exerted by the ball upon the ground (the action) is matched by the ground applying force upon the ball (the reaction).
- Explain that the laws of motion describe a number of actions— hitting a baseball, walking, or kicking a soccer ball.
- Instruct students to return to their charts for the laws of motion and to draw the third law:

Example:



**EXTENSIONS:**

- Ask students to write out or draw Newton’s complete laws of motion that have been covered in previous lesson plans.