

## Lever

**Lifting a Book** - Place the ruler on a table with 8 inches over the edge of the table. Put a book on top of the ruler and try to lift the book by pressing down on the ruler. Then move the ruler to only hang over the edge 4 inches. Have the child compare which way takes more force to lift the book.

**Seesaw Balance** - Place the wooden plank (or ruler) on top of the large dowel. Make sure the dowel is centered. Place two objects on opposite sides of the plank. If they are different weights one side will go up and the other will go down. The child can try different objects, first guessing which one will be heavier or lighter.

**Catapult** - Place the ruler (or wooden plank) on top of the large dowel with most of one side hanging off. Add a light object on top of the longer side. Apply a sharp force to the short side to launch the object into the air!

## Inclined Plane

**Fast Car** - Hold the wood plank at an angle, with one end on the floor. Place the car on top and let it roll down. What happens to the speed of the car when the plank is at a steeper angle? Does it go faster or slower?

**Pushing Uphill** - Instead of a car going down the inclined plane, try pushing a heavy book up. Is it harder or easier with the inclined plane at a steeper angle?

## Pulley

**How They Work** - It can be hard to lift something high. A pulley is used to change the direction of force. Instead of pulling something up, you can pull it down.

**Using a Pulley** - Attach the pulley to something tall. Then thread the string through. Tie one end to an object and pull down on the other end to lift it up.