

Activity: Simple Machines

On SCOPE's Factory Science episode, you saw Julia find lots of simple machines!



What to do:

A simple machine has few or no moving parts and helps make work easier, and you can find them everywhere! There are six different simple machines – see if you can find one of each!

1. Inclined Plane

Inclined planes are simply a slanted surface. They reduce the effort needed to lift something by increasing the distance between two levels.

Where can you find them? There are ramps at the entrance of many shops and buildings. Inclined planes can also be found at the park; a slide is an inclined plane. A roller coaster and a dump truck are also examples of this simple machine.

Where else can you find an inclined plane?

2. Wedge

A wedge is an inclined plane that moves. Most wedges are a combination of two inclined planes in a 'V' shape. They are used to split, cut or divide another object.

Where can you find them? When you next eat a meal look out for some wedges (well, other than the ones that you might be eating!). Knives, forks and even your teeth are examples of wedges. The hull of a ship is also a wedge, as it cuts through the water. Other wedges include axes and nails.

Where else can you find a wedge?

3. Screw

These simple machines are another form of inclined plane, but this time it is wrapped around a cylinder to form a spiral. Screws change a circular or rotating force into a straight or linear motion, and vice versa.

Where can you find them? Funnily enough, an example of a screw is a screw! But you can also find them on top of a bottle, as well as at the park – a spiral slide is a screw.

Where else can you find a screw?

4. Lever

These machines are a straight bar that moves on a fixed point called a fulcrum. For every lever there is a load, a fulcrum and the effort. But there are different types of levers depending on where the load, fulcrum and effort are in relation to each other. A first-class lever has the fulcrum in the middle, a second-class lever has the load in the middle and a third-class lever has the effort in the middle.

Where can you find them? You can find a lever at the park; a see-saw is an example of a first class lever. Another first-class lever is the ring pull on top of a soft drink can. Check out the shed in your backyard and you might find another lever – a wheelbarrow is an example of a second-class lever because the load is in the middle. Brooms, hockey sticks and boat paddles are all third-class levers.

Where else can you find a lever?

5. Wheel and Axle

A wheel and axle is a lever that rotates in a circle around a centre point, or fulcrum.

Where can you find them? Bicycle wheels and gears are both examples of a wheel and axle that can be found on your bike. A Ferris wheel is also an example of a wheel and axle.

Where else can you find a wheel and axle?

6. Pulley

A pulley is a wheel with a groove along its edge. This groove is for a rope or belt to move around the pulley. Pulleys are usually used in sets to reduce the amount of force needed to lift a load.

Where can you find them? You might have to venture out a bit further to find these ones. They are commonly used on cranes and elevators, and even by rock climbers.

Where else can you find a pulley?