

Crane Design Challenge 1

Simple Machines

Simple machines help you to make work easier by using less force or by applying a push or pull in a different direction.

There are six kinds of simple machines:

- **Lever:** A stiff bar that pivots on a fulcrum, or pivot point. A lever lifts an item on one end when force is applied to the other end.
- **Wheel and Axle:** A wheel that turns around a rod in its center, called the axle, makes moving things easier.
- **Pulley:** A wheel on an axle that moves things by changing the direction of a push or a pull.
- **Inclined Plane:** An angled surface, or ramp, that helps you move things up and down a height.
- **Screw:** An inclined plane wrapped around a pole in a spiral shape. Screws convert a force that goes around to a force that goes up and down.
- **Wedge:** Two inclined planes positioned back to back. Wedges can be used to push two things apart by redirecting force from the flat end of the triangle to the two sides.

A compound machine is two or more simple machines working together.