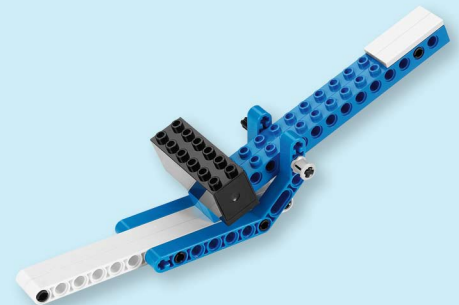
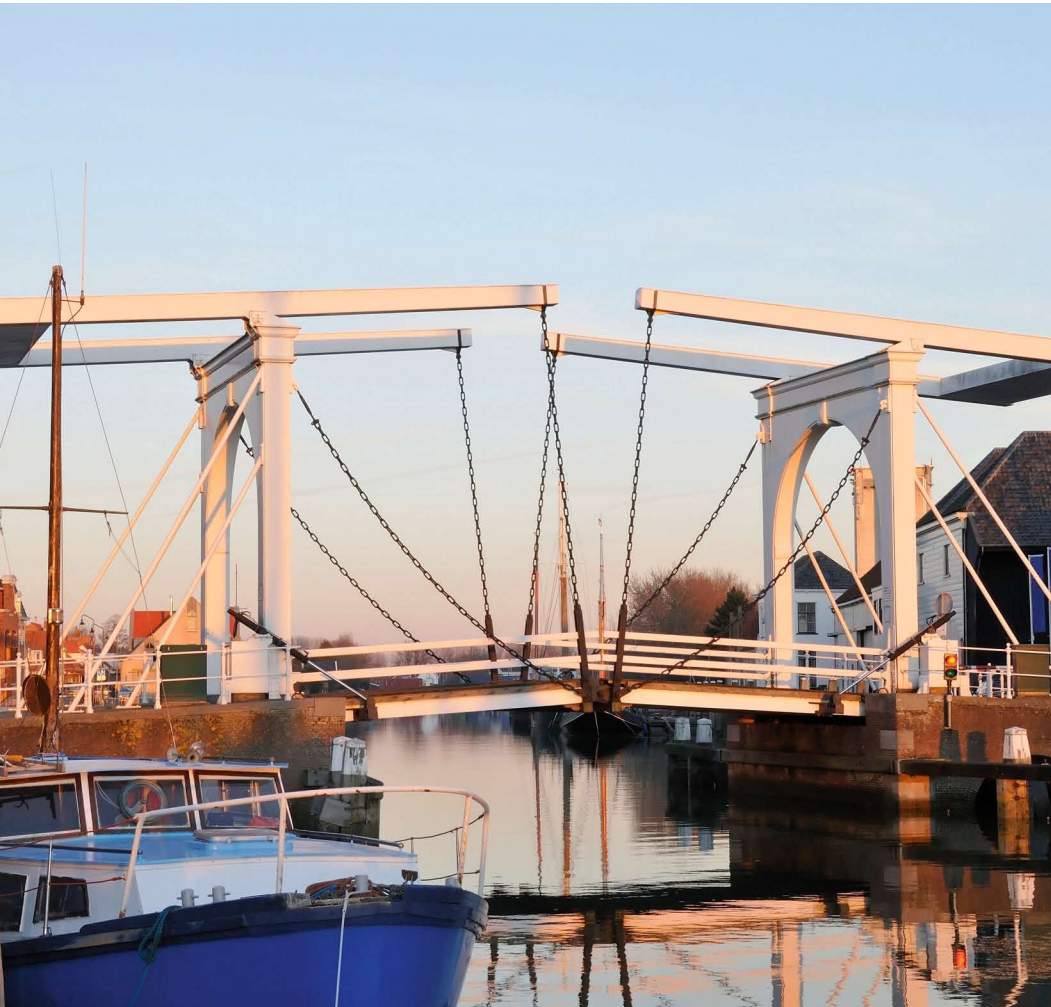




education



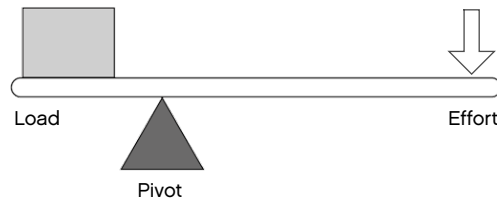
Lever

Simple Machines: Lever

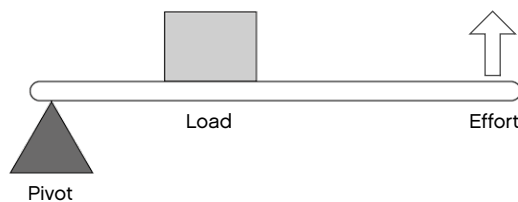
The lever is probably the most commonly used simple machine. A lever is a rigid bar or solid object that is used to transfer force.

With a pivot, the lever can be used to change the force that is applied (effort), alter the direction, and change the distance of movement. Effort, a pivot and a load are three features that are common in every lever.

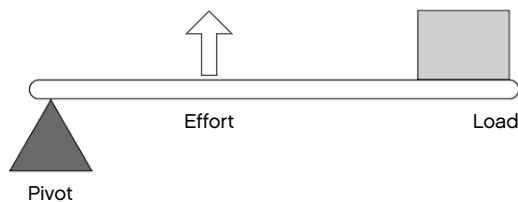
Depending on the positions of these shared features, you can distinguish between first, second or third class levers.



First class levers have the pivot positioned between the effort and the load. Common examples of first class levers include a seesaw, a crowbar, pliers, and scissors.



Second class levers have the pivot and the effort at opposite ends and the load positioned between the two. Common examples of second class levers include nut crackers, wheel barrows, and bottle openers.



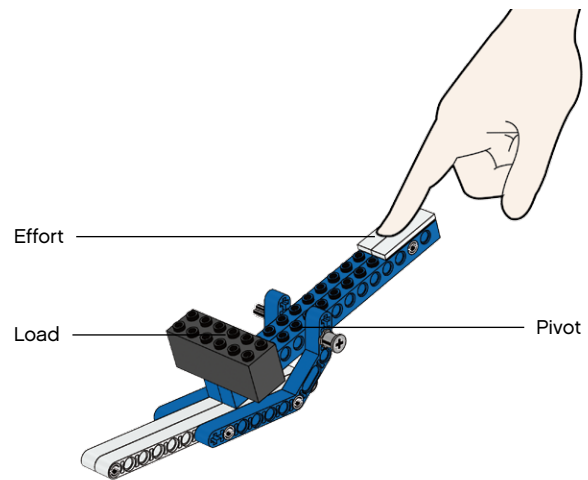
Third class levers have the pivot and the load at opposite ends and the effort positioned between the two. Common examples of third class levers include tweezers and ice tongs.

Did you know?

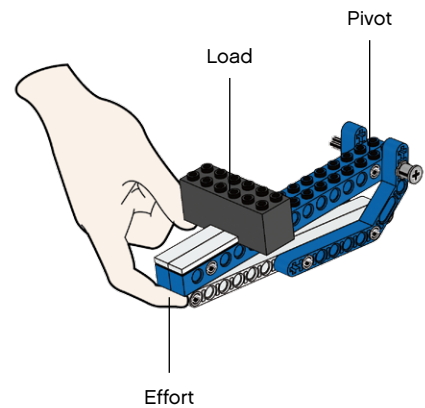
The term lever derives from the French word *levier* which means 'to raise'.

A1

This model shows a first class lever. It has the effort and load at opposite ends with the pivot in between. This model uses the least effort to move the load.

**A2**

This model shows a second class lever. It has the effort and pivot at opposite ends and the load in between. The effort needed to move the load is about half the load force.

**A3**

This model shows a third class lever. It has the pivot and load at opposite ends and the effort in between. Even though the effort required is greater than lifting the load directly, the advantage of using a third class lever is that the load is moved a further distance than the effort lifts.

