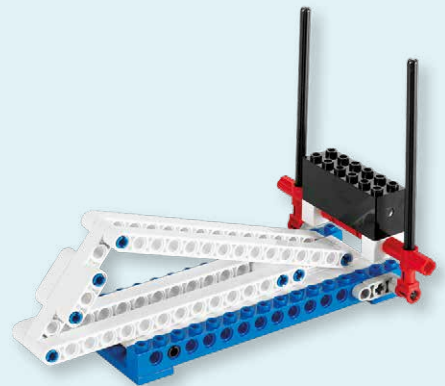


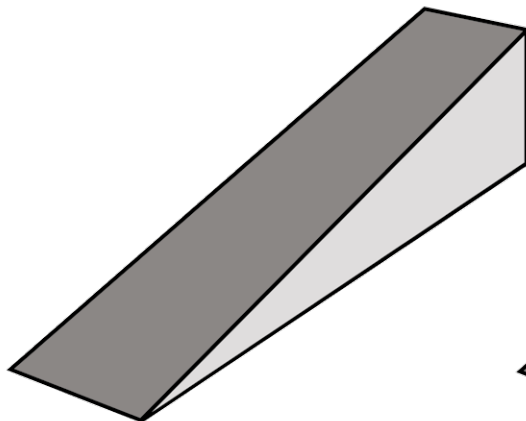
Wedge

Student Worksheet

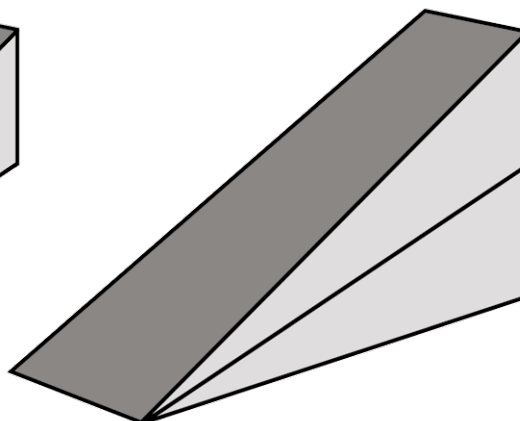


Simple Machines: Wedge

A wedge is a modification of the inclined plane. Unlike an inclined plane a wedge can move.



Single wedge



Double wedge

A wedge can have a single or two sloping surfaces. The effort you need depends on the relationship between the length and width of the wedge and consequently the sloping surface.

Common examples of wedges include axes, knives and doorstops.

Did you know?

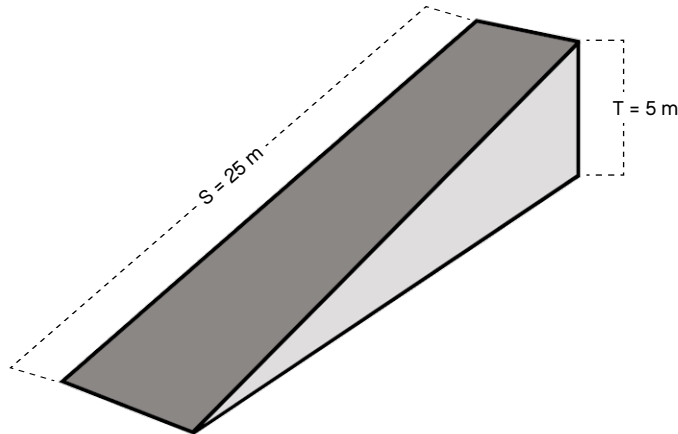
Wedges are used to split granite!

A simple device called a wedge and feather can split huge granite blocks.

The Mechanical Advantage of a Wedge

The ideal mechanical advantage of a wedge describes the relationship between the length of the sloping side of the wedge and the height at the thickest end of the wedge. The mechanical advantage can be calculated using the following formula:

$$\text{Mechanical advantage} = \frac{\text{Slope}}{\text{Thickness}}$$



$$\text{Mechanical advantage} = \frac{25 \text{ m}}{5 \text{ m}}$$

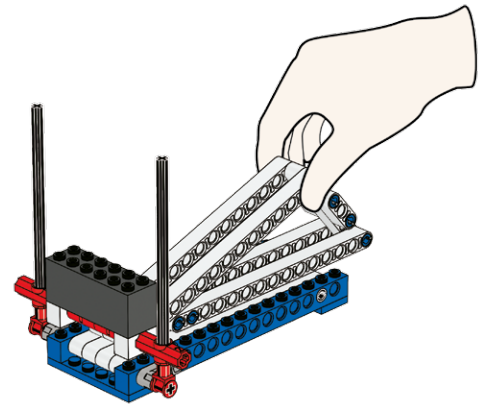
$$\text{Mechanical advantage} = 5$$

Hint:
The sharper the angle of the wedge, the more mechanical advantage it will have.

E1

Build E1 book II, pages 16 to 25

Calculate the mechanical advantage. Then push the wedge under the load. Explain what happens and why.



E2

Turn the wedge around and calculate the mechanical advantage. Then push the wedge under the load again. Explain what happens and why. Compare with the model above.

