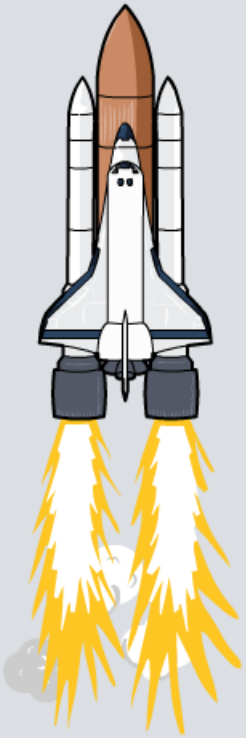
Work

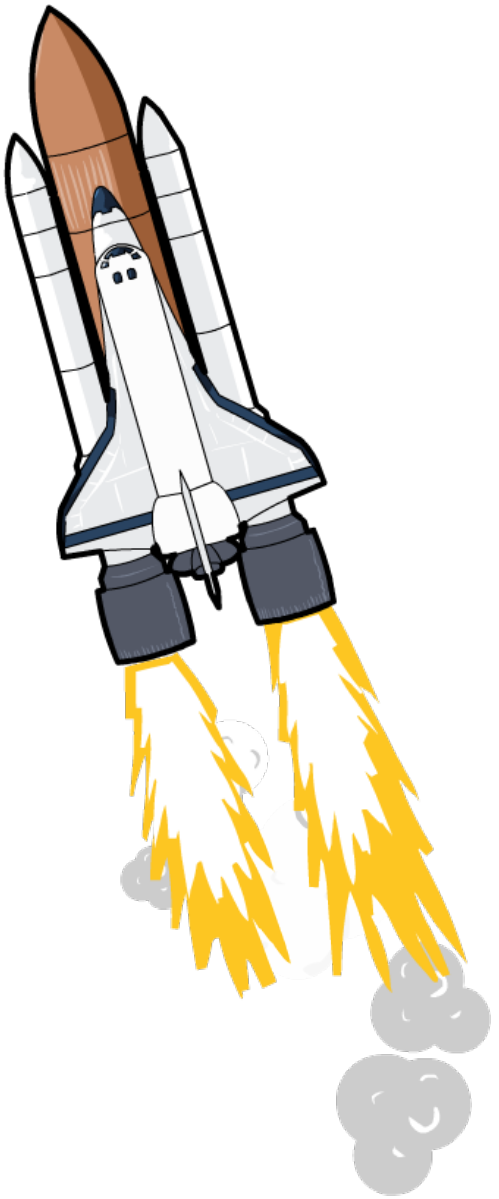


What is work?

What happens when a rocket is launched into space?

When the rocket's engines are fired, chemical energy in the fuel is **transferred** to kinetic energy in the rocket.

This transfer of energy is called **work**.



Work and energy

What is the link between work and energy?

work done = energy transferred

This means the units for work are the same as the units for energy – **joules**.

For example, if a person does 500 J of work, then 500 J of energy is transferred.

In the same way, if a person transfers 250 J of energy, then 250 J of work is done.

What factors affect the amount of work done?

Work is done when energy is transferred, but what factors affect the amount of work done?

Click "**start**" to find out.

start

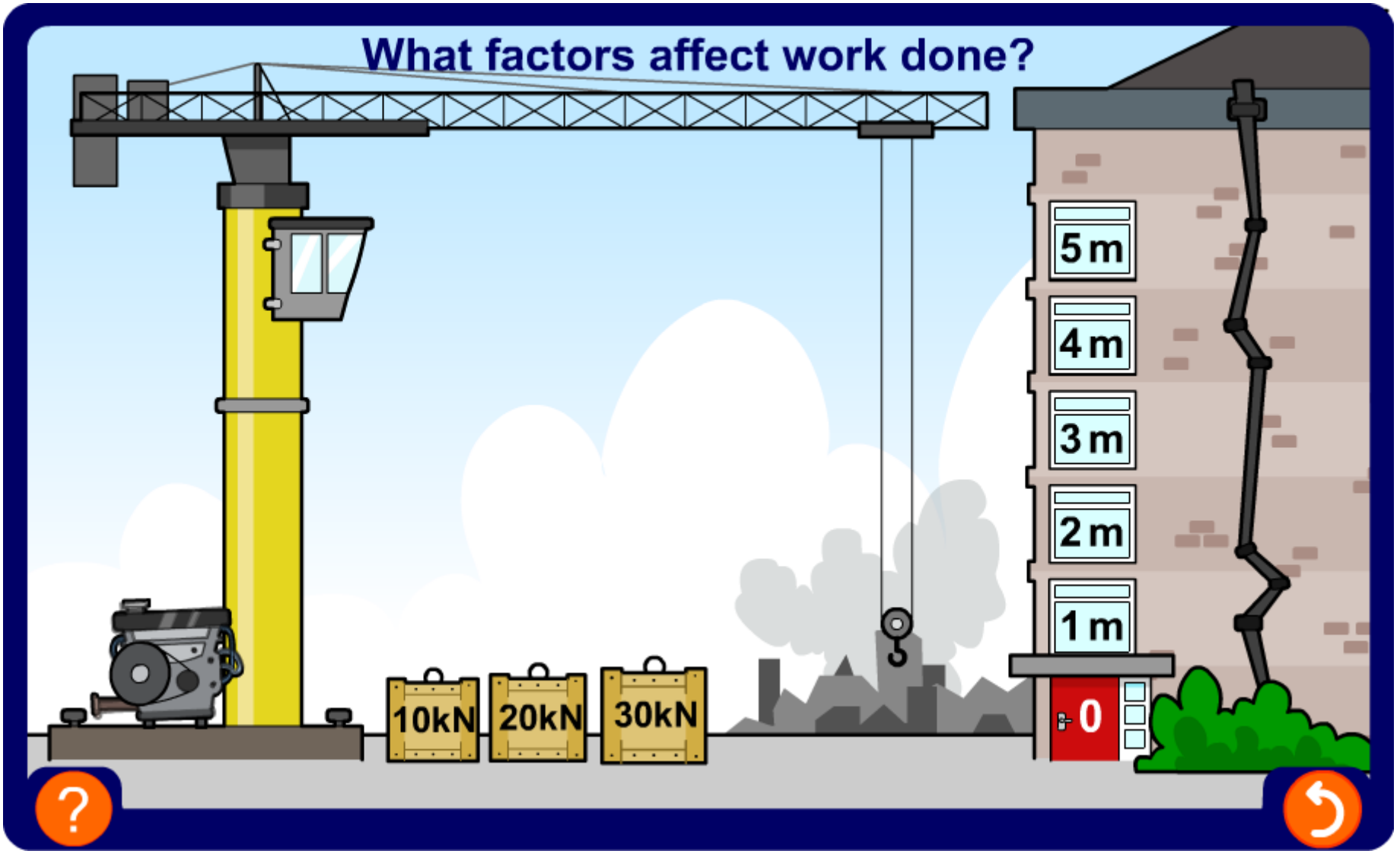
How is work calculated?

The work done on an object can be calculated using this equation:

work done = force × distance moved

- Force is measured in **newtons** (**N**).
- Distance moved is measured in **meters** (**m**).
- Work done is measured in **joules** (**J**).

Factors affecting work done



Calculating work done question 1

A cyclist peddles a bicycle with a force of 1,000 N moving it 250 m.

How much work has been done by the cyclist?

work done = force × distance

= 1,000 × 250

= **250,000 J = 250 kJ**

Calculating work done question 2

A truck engine moves a truck with a force of 10 kN and does 500 kJ of work. How far has the truck traveled?

$$\text{work done} = \text{force} \times \text{distance}$$

$$\text{distance} = \frac{\text{work done}}{\text{force}}$$

$$= 500{,}000 \ / \ 10{,}000$$

$$= \mathbf{50\ m}$$

Work, force and distance calculations

You will need this equation to answer the following questions about work, force and distance:

work done = force x distance

Click "**start**" to begin.

start