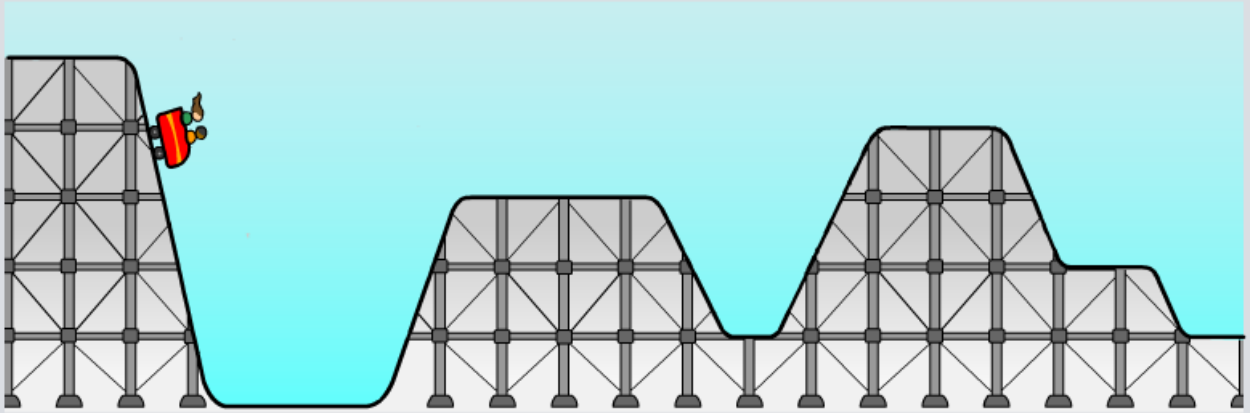
Conservation of Energy



What is conservation of energy?

There are many different forms of energy, such as kinetic, sound, thermal and light energy.

Each form of energy can be transferred or converted into another form. All energy transfers follow the **law of conservation of energy**:

Energy cannot be created or destroyed, just changed in form.

This means that energy never just ‘disappears’.
The total amount of energy always stays the same,
i.e. total input energy = total output energy.

In most energy transfers, the energy is transferred to several different forms, which may or may not be useful.

Gerald the Human Cannonball

Complete the story of Gerald the Human Cannonball

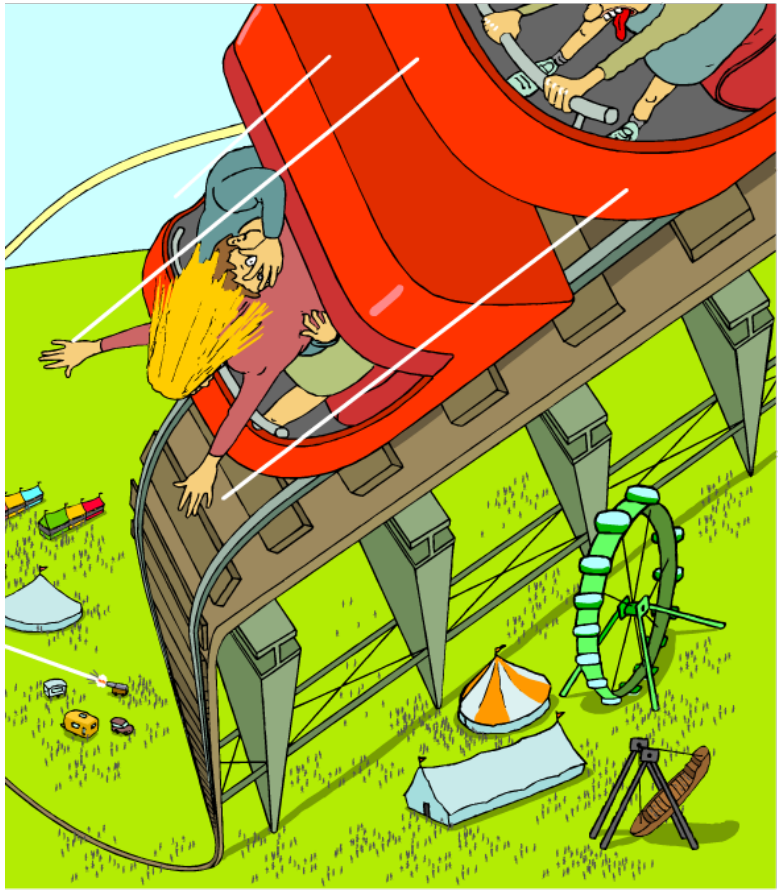
Gerald the Human Cannonball knows how to use energy in a spectacular way! Click "**start**" to begin.

start

The relationship between GPE and KE

The law of conservation of energy means that as an object falls, the GPE it loses must turn into a different form.

GPE lost = KE gained

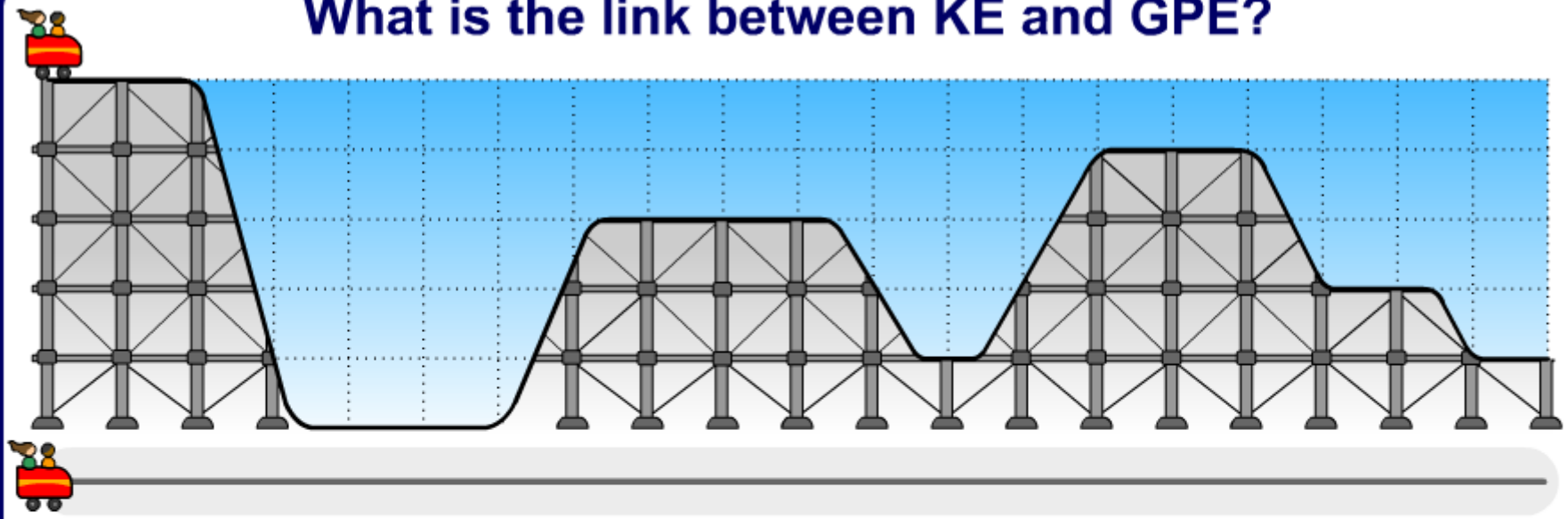


This is only true if air resistance and friction are ignored.

In reality, GPE would also be transferred into heat and sound energy, so the KE of a rollercoaster would be less than the GPE lost.

Energy transfer of rollercoasters

What is the link between KE and GPE?



mass (kg)	500		
height (m)	Text	GPE (J)	?
velocity (m/s)	Text	KE (J)	?