

# Heat changes everything

## Rail line student activity

This activity will help you to understand the effects of heat on rail lines. It will also show the importance of rail sleepers and how they prevent the tracks from moving as they expand and contract.

### Materials

You will need:

- a length of elastic or a rubber band that's been cut to approximately 25 cm long – this will act as the rail lines
- an A3 or A4 piece of card
- some sticky tape to act as the rail sleepers.

### Instructions

In pairs, draw a short, slightly curved line on the piece of card.

1. Lie your elastic on the line. What happens if you pull on each end? Is this modelling heating or cooling?
2. Now lay your elastic on the line again and push each end inwards gently. What happens?
3. Now lightly tape your elastic to the line by laying three or four small pieces of tape over it at right angles (similar to rail sleepers holding down a rail line)
  - Pull gently on your elastic. What happens? The elastic should stay roughly in place.
  - What happens if you pull more firmly – such as when the temperature has risen to a point that is causing the rail lines to move and buckle?
  - What happens if your tape is laid down more securely?

