

# Scrap yard scraps

## The story

It's a cold winter's day. Cosmic and Gem are at the car scrap yard with their Aunt Stella. She is looking for a new motor to make her wiper blades work. There are parts of cars piled everywhere around the yard.

"I wonder how I will find anything in all this mess?" asks Aunt Stella.

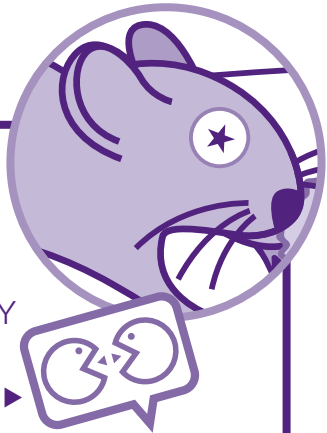
But Gem couldn't wait to find out. In amongst all the wrecks, she spots a tiny, weenie mouse carrying a big piece of sponge from an old car seat.

"Where could it be going with that?" she wonders. "Come and look Cosmic," she whispers as she peers down the hole where the mouse has gone.

There they can see a big pile of scrap yard scraps that the mouse has collected – fabric, sponge, strips of bubble wrap, parts of old carrier bags, fluffy scraps of wool, pieces of foil and old newspaper.

"Do you think all those things will keep it warm?" asks Gem. "I don't know," replies Cosmic. "Let's find out," says Gem.

## What do I do?

1. Follow the instructions on the ACTIVITY CARD. Make sure you give children time to talk when you see this symbol. 
2. Read the story. Get the children to talk to a buddy about the ideas in the questions and the Concept Cartoon.
3. The children will need a selection of different pieces of fabric and other materials to test – see Resources list overleaf.
4. Talk through how they might find out how well the materials keep things warm. Encourage them to think of their own ideas.
5. Encourage them to think about fair testing e.g. use the same amount of material.
6. There are follow up activities for children who have finished or want to do more investigating at home and earn a bonus sticker.



## ★ Handy hints

### Things to look out for

- ★ Children may need help with measuring the temperature. Thermometers can be stuck in holes in the potatoes or can be attached by elastic bands before the potatoes are wrapped.
- ★ You could let them make judgements about change in temperature by feeling the bottle or potatoes, rather than using a thermometer.
- ★ The children might want to consider other relevant properties of materials. For example, should it be soft or waterproof?

### Background information

- ★ Materials that trap air are good at keeping things warm. When things go colder, it is because heat (thermal energy) has escaped. To keep things warm you need to reduce how quickly this happens. Heat cannot travel easily through air. So the trapped air inside bubble wrap, wool, sponge or layers of material, should help to keep the mouse warm.
- ★ Single pieces of paper or plastic are not usually as good since one layer does not trap very much air. Foil is not going to be very good for keeping the mouse warm. Metal is a good thermal conductor. If you touch bubble wrap and foil wrapped round identical hot potatoes, the foil will feel warmer first.

### Resources

- ★ Warm potatoes or small plastic screw-top drinks bottles filled with warm water – to make the ‘mice’
- ★ Selection of materials such as fabric, sponge, bubble wrap, wool, foil, plastic and old newspaper – large enough to wrap round the ‘mice’
- ★ Additional materials e.g. cotton wool, leather, carpet (optional)
- ★ Thermometers – ‘alcohol’ filled, digital or other safety thermometers
- ★ Poster-making materials (optional)

### How can children share their ideas?

- ★ The children can draw a picture of the mouse in its nest – the material could be stuck onto the picture.

### Safety

- ★ The potatoes or water should be at a temperature which is safe to handle.
- ★ Do not use thermometers filled with mercury (mercury is toxic).
- ★ Take care with broken glass thermometers.
- ★ Mop up water spills to avoid slippery floors.

