

Using IT in... temperature and energy

Which fabric keeps you warmest?

You go inside after being out in the cold. Would you warm up quicker with your coat on or off?

Materials: which would be best to use as an oven glove?

Cups: which would keep your coffee warm?

Cups: which will help soup cool the fastest?

Teapots: which keeps the tea hot best?

Tea cosies: which keeps the tea hot?

Pizza boxes: which type should they use?

How long does a can of drink from the fridge take to get warm? How can we keep it cool?

How can you keep a bottle of milk cold without a fridge?

Is double glazing effective?

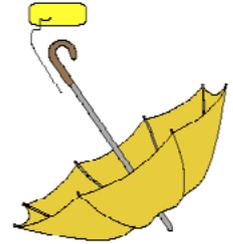
Some materials prevent heat transfer better than others. The choice of material is of great importance in keeping us, our houses, our cups of tea and our food at a good temperature. Strangely, heat insulators not only keep things warm, they also keep them cool. **Temperature sensors** connected to the computer are especially useful in this theme. The investigations above require many temperature readings, and sensors linked to the computer take these readings automatically. If nothing else, this allows children to focus on their work and better appreciate temperature changes.

The children need to think about ways to make these investigations fair. They need to take care if you are using hot water - and it would be better that children learn to use sensors in less hazardous activities.

IT: Measuring

How good a solar collector can you make?

You can make a solar collector lined with cooking foil. You use a **temperature sensor** the hot spot on the solar collector. You can point the umbrella towards the sun and move the sensor along the umbrella stem until you find the hottest spot. Does your solar collector work when the sun disappears? How long over an hour?

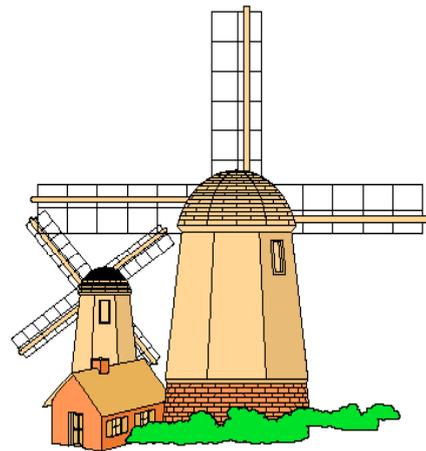


IT: Measuring

Who can make the fastest windmill?

The children can make windmills using different designs of vane. They can fix it to a **rotation sensor** to measure how fast they turn. Why do some windmills turn faster? The better the vanes, and the less friction in the design the more the wheels should turn.

IT: Measuring



Section

3