5 Materials that bend and stretch

Many materials can easily be pulled or bent into new shapes. They are another kind of flexible material.

Some materials can easily be made into new shapes. For example, you can bend a piece of wire into a new shape (Picture 1), or you can pull a toffee into a new shape (Picture 2). The clothes you are wearing keep changing shape as you move.

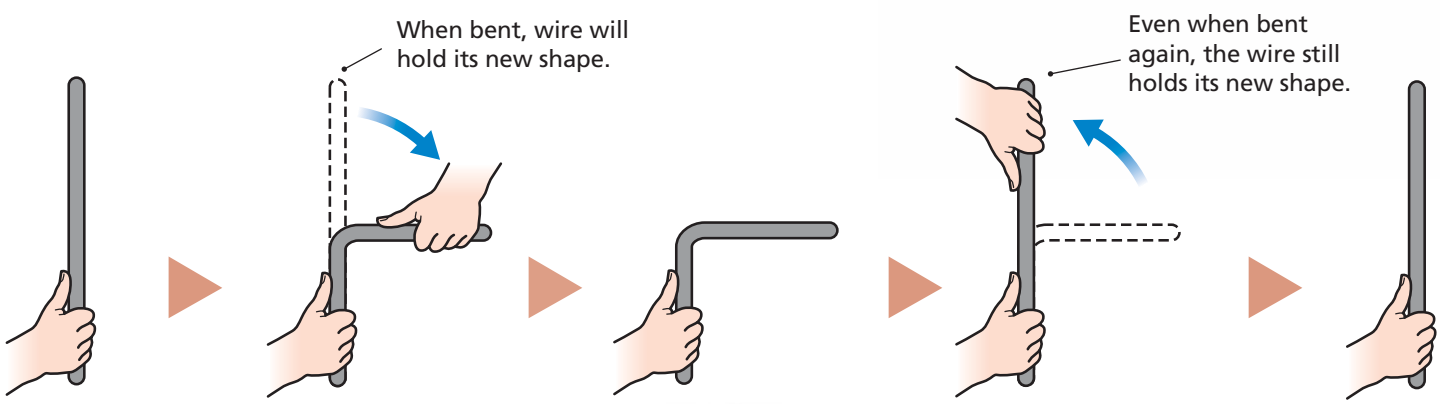
There are many flexible materials of this kind in the world. They are not springy, and they do not break easily, they simply change from one shape into another. Plasticine is another good example of a material that will bend and stretch and yet hold new shapes (Picture 3).

Thin means flexible

Thin things can be put into new shapes more easily than thick ones because there is less material to move. This is why a thin sheet of aluminium or plastic can be bent easily (Picture 4), but a thick block of aluminium or plastic is far less flexible.

▲ **(Picture 2) The toffee in this bar of chocolate holds a new shape when it is stretched or bent.**

▼ **(Picture 1) Wire can easily be bent into a new shape, which it will hold. It can even be bent back to its original shape. Wire is flexible, so it can do all this without breaking.**



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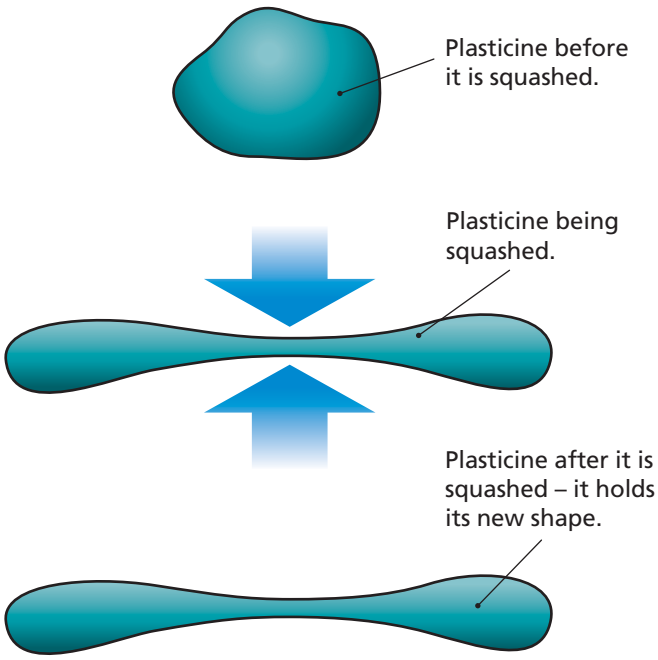

▲ **(Picture 3) When Plasticine is pinched, rolled or pulled it makes a new shape. It is flexible and will bend and stretch, but it is not springy (elastic).**

Flexible fibres

One of the most easily bent shapes is a long thin rod. We call a very small rod, a fibre. Cloth is flexible because it is made from long, thin fibres (Picture 5).

Even glass can be flexible when it is made into a fibre. The cables used to carry telephone messages under our streets are made of thin, flexible glass fibres.

Many common fibres are metals. For example, the wires in an electricity cable are made of long threads of copper. This is why you can move the cable around easily.

◀ **Picture 4) This hot food container is sealed by pushing up the edge of the flexible aluminium base over the cardboard top.**

▲ **(Picture 5) Cloth and rope are flexible because they are made from long, thin fibres.**

Summary

- **Some materials can be reshaped time after time.**
- **Materials that are bendable are mainly shaped into rods (such as fibres) and thin sheets.**
- **Almost any material can be made flexible when it is a fibre – even glass.**

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