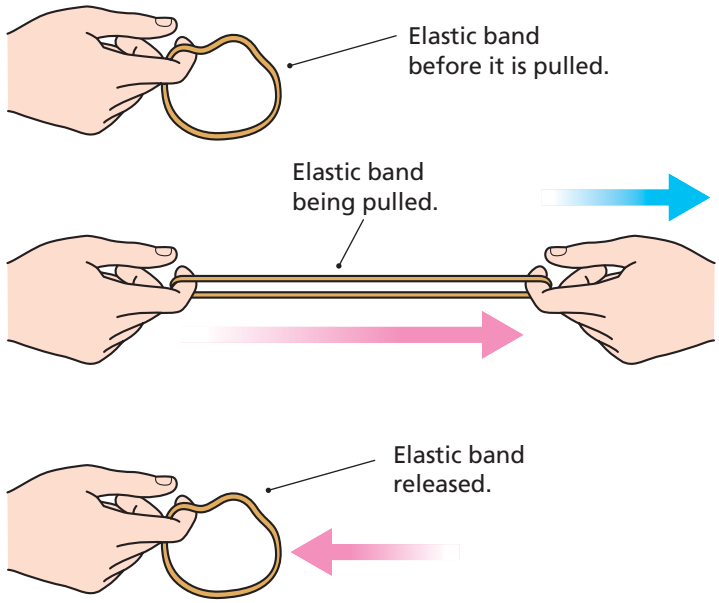
Springy materials

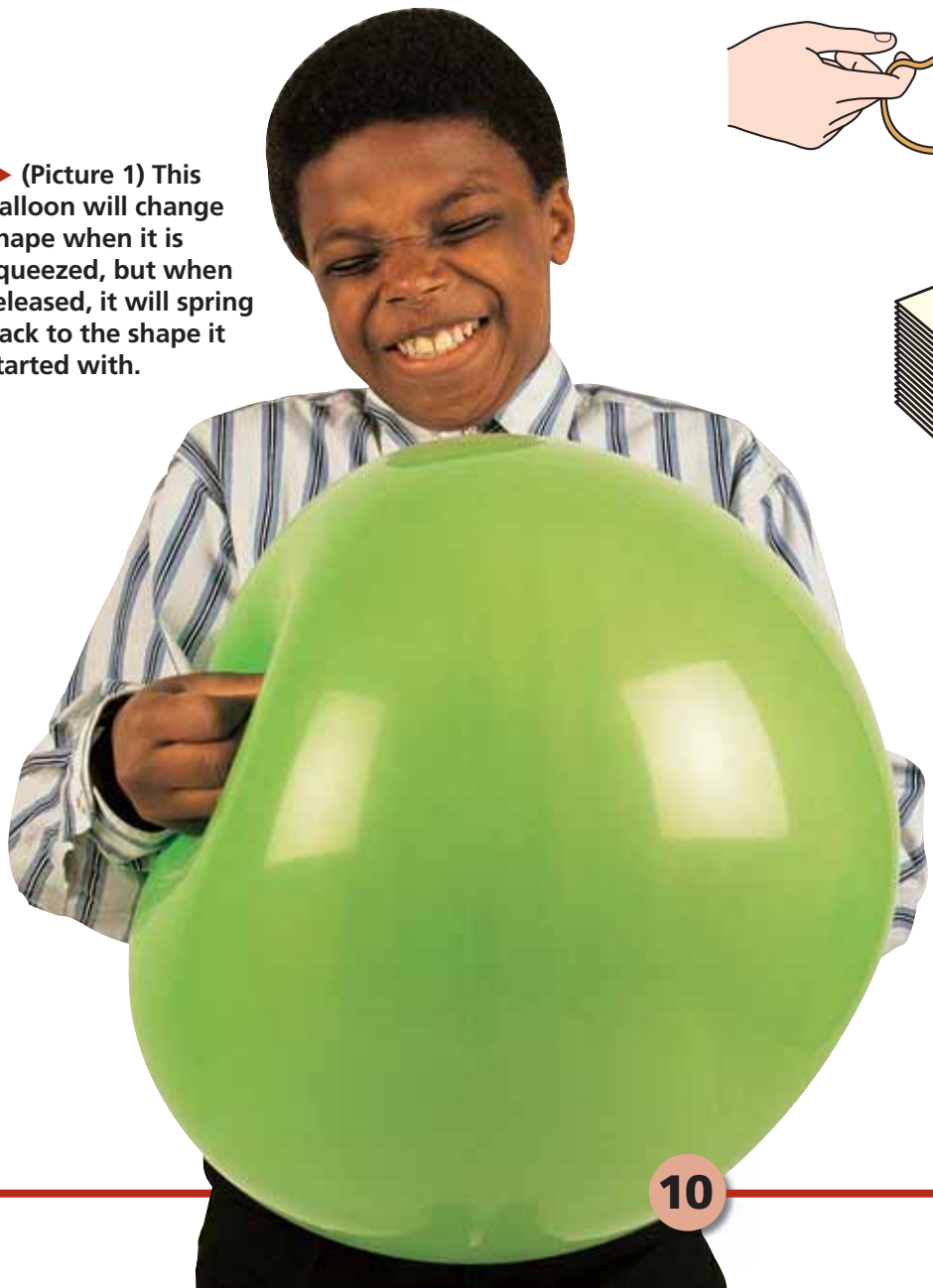
Springy materials will change shape when you pull them or push them, but return to their original shape when you let them go.

Anything that will change shape without breaking is called a **FLEXIBLE** material. Springy materials are one kind of flexible material. This is how they work.

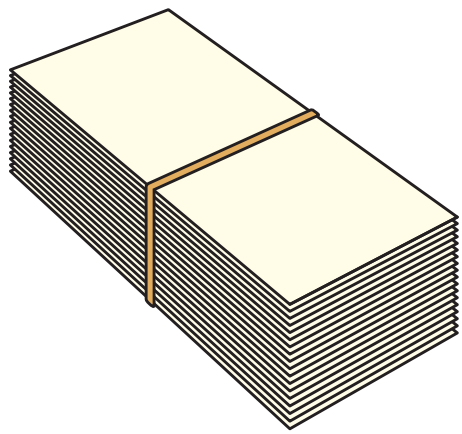
Materials with a memory

Springy materials all have a sort of 'memory'. They 'know' what shape they





▶ **(Picture 1) This balloon will change shape when it is squeezed, but when released, it will spring back to the shape it started with.**



▲ **(Picture 2) If you stretch an elastic band, it pulls against you, trying to get back to its original shape.**

People can make use of the springy property of elastic bands to hold a bundle of envelopes together. There are many other everyday ways to use springy materials, such as holding paper with a paperclip or cloth with a safety pin.

are and they don't like changing to a new shape. So when you change their shape by pulling on them, then let go, they tend to spring back into the shape they started with. We use the words springy, or **ELASTIC**, to describe this property (Picture 1).

Whatever you do, you cannot get elastic materials to take on a new shape (Picture 2).

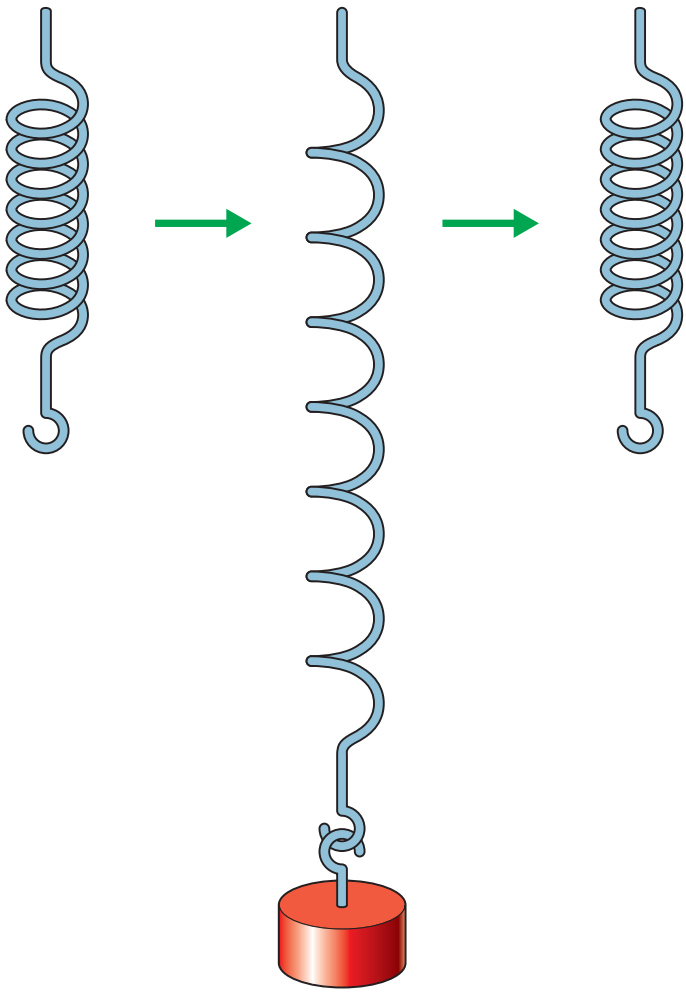
You may be wearing elastic materials such as stretch tights and stretch socks right now. You can also find elastic materials in the rubber seals around the fridge, the cooker and the doors of cars.

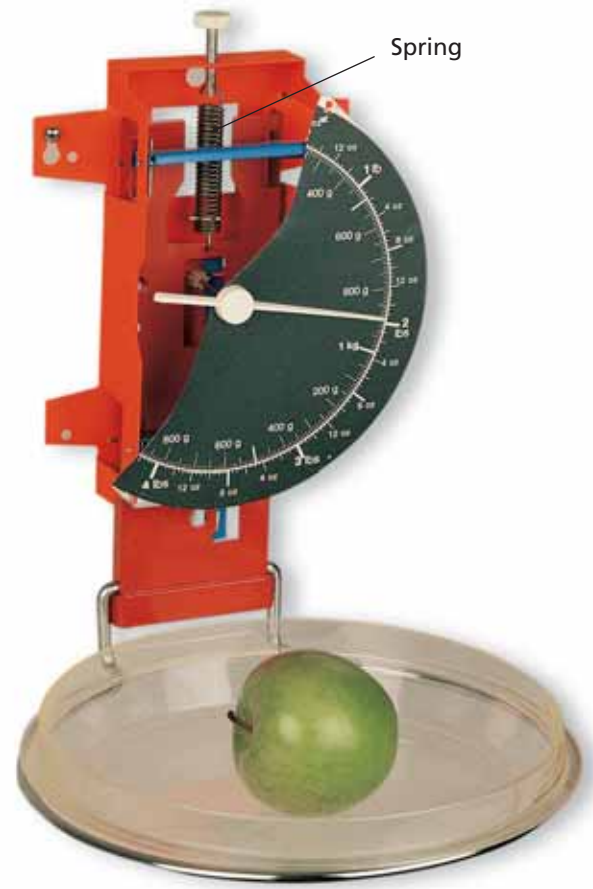
Metal springs

You may not think of metal as a springy material, but when it is coiled up it can make a powerful spring (Picture 3).

Steel springs stretch less easily than rubber or plastic, so steel springs are used with heavy weights (Picture 4).

▼ **(Picture 3) A coiled metal spring will stretch when a weight is hung from it. When the weight is taken away the spring goes back to its original size.**





▲ **(Picture 4) A scale for weighing food uses a spring. In this example, the scale has been partly cut away so that you can see the spring inside the case.**

Summary

- **Elastic materials can be stretched, but they always go back to the shape they started with (unless you stretch them too far).**