4 Musical springs

If you make a springy material go back and forth very fast, it will make a sound.

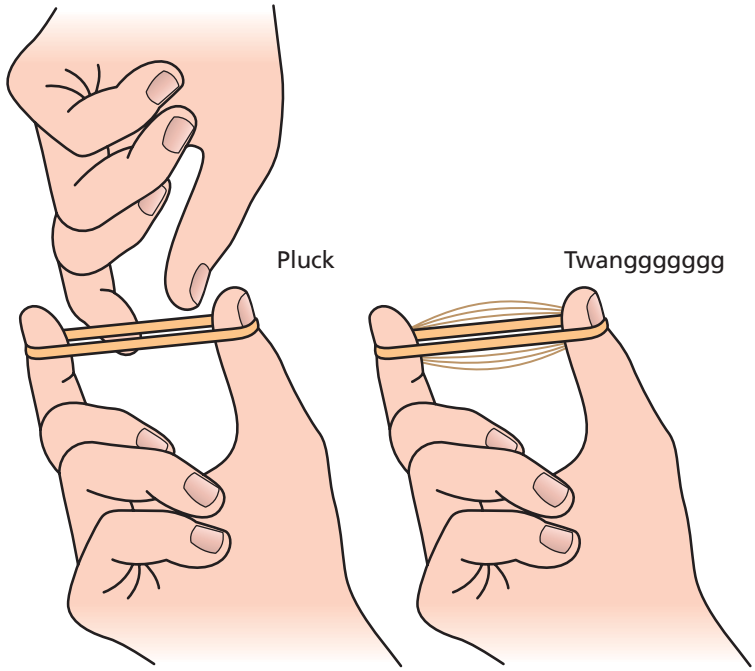
Have you ever plucked a guitar or tapped on a drum? If you have, you have used natural springiness to make music.

If a spring moves back and forth very quickly it gives out a sound. You may have heard this if you have twanged a ruler (see Picture 2, page 8).

Elastic guitar

You can make a very simple musical instrument just using your fingers and an elastic band (Picture 1). We might call this an elastic guitar!

Simply pull the band so that it is stretched between your thumb and finger, then pluck at the centre of one side of the band. This will make a twanging sound. Pull your thumb and finger apart slightly and twang again. The sound will have become higher. So, by using the springiness of an elastic band, you can make music. Perhaps you can find out what a whole class using elastic guitars sounds like.



▲ **(Picture 1) This is an elastic guitar, made by twanging an elastic band between your thumb and finger. It is a very simple musical instrument.**

Wire springs and sheets

Many musical instruments make use of the natural springiness of a material to make a musical sound (Picture 2). Springy wires are used to make the strings of violins, guitars, pianos and other musical instruments. Springy sheets are used to make drums.

Thumb harp

An African instrument called a thumb harp produces sounds by plucking metal leaf springs (Picture 3).

Summary

- **When a spring moves backwards and forwards very quickly it makes a sound.**
- **A tighter elastic band will give a higher sound.**

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▼▶ (Picture 2) String instruments give out a sound when you pull on the string and let go. Sometimes you use fingers to pluck the string, sometimes you use a hammer to hit the string (a piano) and sometimes you pull the string sideways using a bow (violin).

▶ (Picture 3) This is a thumb harp. It is made from thin pieces of steel attached to a case made from a gourd. The instrument is plucked to make the steel spring up and down quickly and make a sound.