What do I need?

- tin cans (you'll need at least 3 cans of the same size)
- can opener
- sturdy tape (masking tape is okay, but plastic packing tape or duct tape works best)
- towel
- wooden spoon
- pencil
Tips on Cans:

- Bonkos made from cans of different sizes will all sound different. Try making Bonkos from little cans (like soup), bigger cans (like dog food), or really big cans (like tomato juice or Hawaiian Punch). With a set of Bonkos, your whole family can make some interesting music together.
- You can plan ahead and save your cans as you use them. Or you can do what the Fowler family did--plan a special dinner of canned foods and create your Bonkos after you eat.
- Make sure that your cans have flat bottoms that you can cut off with a can opener. Cans with rounded bottoms won’t work.
What do I do?

1. Ask a grown-up to use the can opener to cut off the bottoms of all of the cans—except one. Leave the bottom on that one. (If you're using different sizes of cans, make sure one can of each size has a bottom.)

2. Wash the insides of the cans and let them dry. (Be careful of the cut edges: They might be sharp.)

3. Take a can that still has a bottom and put it on the counter, open end up. Put another can of the same size on top of it. Tape them together.

4. Put the next can on top of the other two, and tape it to them. Now you have a Bonko that's three cans long, with one closed end and one open end. (You can also make a four- or five-can Bonko if you have enough cans.)

5. Put a towel down on your kitchen floor. Hold your Bonko open end up, and bonk it up and down on the towel. Try making different sounds. You can make your own rhythms by bonking faster or slower, softer or harder. If you hold your hand over the opening as you bonk, does that change the sound?
Why does a long Bonko make a deeper sound than a short Bonko?

Compare two Bonkos that are made of cans of the same size. You'll find that the longer Bonko makes a lower-pitched sound than the shorter Bonko.

Rather than talking about pitch, scientists sometimes talk about a sound's frequency. Every sound begins with a vibration, and a sound's frequency is the rate of vibration—the number of times something vibrates in a unit of time. Something that's vibrating very fast—like the steam rushing out of a whistling teakettle or the metal of a tiny bell—makes a high-pitched, high-frequency sound. Something that's vibrating more slowly—like the drumhead of a bass drum or the metal of a big bell—makes a low-pitched, low-frequency sound.

When air inside a Bonko vibrates, it makes a sound that contains many different frequencies. This complex sound bounces around inside the metal tube. Sometimes vibrations of the same frequency overlap and add together. When that happens, sounds with that frequency get louder. The length of the Bonko helps determine which sounds get louder. Long Bonkos amplify low-frequency (low-pitched) sounds; short Bonkos amplify high-frequency (high-pitched) sounds.
Astounding Sounds from All Around

Have you ever seen an instrument like the Bonko? Maybe not in America. But all over the world-- from Africa to South America-- people use objects just like your Bonko for dances and special ceremonies. Some of these tubes are only about a foot long, but others are as tall as a grown-up man. People who study music call them all *stamping tubes*. Each culture has its own name for this instrument.

In **Venezuela**, they are called *quitiplas* and are made out of cane or hollow wood.

In **Kenya** and **Tanzania**, they are called *bazaras*. They are made out of bamboo, sometimes with slits cut in the sides. People pound them on the ground, but they also hit them with sticks to make a different sound.

In the islands of **West Java**, they are called *kendang awi*. These are made of bamboo, and two of them-- one large, one small-- are played together.

In **Borneo**, pieces of dried fruit are put into tubes of bamboo so that the tubes will also rattle when they hit the ground.