

# Achy Breaky Bones



## Collect

- Large jar with a lid
- Vinegar
- Leftover bone (chicken bones work well)

## Prep the bone

1. Save a bone from dinner. Cut any extra meat off of the bone and clean the bone thoroughly with soap and water.
2. Let your child explore the bone. What does it feel like? Can the bone bend or twist?
3. Don't forget to wash hands after making observations!

## Let it sit

4. Place the bone in a large jar.
5. Fill the jar with enough vinegar to cover the bone. Put the lid on and let it sit overnight.

## Bend it!

6. After soaking for one night, open the jar and take the bone out. Rinse it off with water.
7. Let your child explore it again. Has the bone changed at all? Does it feel any different?
8. Place the bone back in the vinegar and let it sit for four more days.
9. Take the bone out of the jar, rinse it clean and try to bend or twist it again.

## What's happening?

Your skeleton needs to be strong but flexible so it can hold you up and keep you moving. The bones that make up your skeleton contain both collagen and calcium. Collagen is a protein that builds the framework, and calcium is a mineral that keeps them strong and sturdy. Vinegar dissolves the calcium from the bone, leaving it super bendy.

## Take it further!

- What do you think would happen if you soaked a bone in another common acid such as orange juice or soda? Would it take longer for the calcium to dissolve?
- Try removing the collagen from a bone. Take the bone from the vinegar experiment and place it in a 250 degree oven for about 3 hours. Allow the bone to cool and then try to bend it. What happens?

