

Chicken Bone Strength Experiment-

TEACHERS GUIDE

Names: _____

Supplies Needed:

A chicken bone- a leg or drumstick bone works best

A large enough jar to fit the bone in

Vinegar

Lab Directions:

1. Rinse the chicken bone off, and remove all meat from the bone.
2. Notice how hard the bone is- gently try to bend it.
 - a. How does the chicken bone compare the our bones? ____If you notice how hard the bone is you will understand the strength of Calcium in our bones. Chicken bones also have a mineral in their bones called Calcium which makes the bones harder like ours.____
3. Put the bone into the jar and cover the bone with vinegar. Place the lid on the jar and let sit for 3 days(hint: good day to start this activity is Friday)
4. After 3 days remove the bone. It should feel different. Now rinse it off and try bending it gently again. Does it feel rubbery? ____a little bit____ What is happening? Vinegar is considered a mild acid, but it is strong enough to dissolve away the calcium on a bone. Once the calcium is dissolved, there is nothing to keep the bone hard- all that is left is the soft bone tissue. Now you know why your mom is always trying to get you to drink milk- the calcium in milk goes to our bones to make our bones stronger. With some effort closer to the end of the experiment you can really get the bones to bend._
5. Check the bone each day until day 7 or 8 of the lab. Record all your observations in the table below behind the appropriate day and then answer the questions at the end of the lab.

Day 3	
Day 4	
Day 5	
Day 6	

Day 7	
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How Does this Work?

- 1. So what happened? What is so special about vinegar that it makes a bone squishy?

Refer to the previous answer to help students understand what is happening with the bone and why calcium helps keep the bones hard.

- 2. How does the chicken bone compare to a persons bones that may have osteoporosis at the end of the experiment?

The chicken bone was slowing getting weaker through the experiment which is what happens to a person with osteoporosis. As they lose Calcium in their bone, they become weaker and slowing become more brittle.

- 3. What is happening to the Calcium in the bones of a person that has osteoporosis?

The calcium is slowing leaving the bones making them weaker.

Students learn that vinegar removed the calcium from the bone. It was deposited on the insides of the glass jar. If they do not consume enough calcium from food, the calcium will be taken from their bones to support the heart to beat, the muscles to flex and the nerves to send messages to the brain. That will leave the bones brittle and making it more likely to have broken bones.

- 4. Why is it important for you to get your 3 dairy products a day?

So we stay healthy and don't get osteoporosis.

To keep our bones strong and healthy.