Curiosity Guide #306
Skeletal System

Accompanies Curious Crew, Season 3, Episode 6 (#306)

Bendy Bones

Investigation #1

Description

To bend or not to bend? That is the question!

Materials

- 2 chicken-leg bones
- Glass container with lid
- Vinegar
- Paper towel
- Latex gloves

Procedure 1: Prepare the bones

1) Boil the bones to remove any meat.
2) Soak the bones in 1 part bleach to ten parts water for five minutes.
3) Let the bones dry.

Procedure 2: Experiment with the bones

1) Put on latex gloves.
2) Gently try to bend one of the chicken legs. Be careful not to break the bone.
3) What do you notice?
4) Place the bone in the glass container.
5) Pour enough vinegar over the bone so the bone is completely submerged.
6) Cover the container with the lid. Set the container aside.

7) After 2 or 3 days, pour out the vinegar. Fill the container up a second time.
8) After 2 more days, pour out the vinegar again. Dry off the bone with a paper towel.
9) Again, try to gently bend the bone. What do you notice?

My Results

Explanation
Bones have a material called calcium that hardens the soft collagen material in the bones. When a bone is placed in vinegar, the acid in the vinegar begins to dissolve the calcium, leaving just the collagen. By itself, the collagen is flexible, so the bone can now bend.

Softer bones are also more likely to break, so it is important to eat plenty of foods rich in calcium, like low fat dairy; green, leafy vegetables like collard greens; beans, and nuts. A person between the ages of 11 and 24 should consume 1,200 milligrams of calcium every day.

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