



## Curiosity Guide #306

### Skeletal System

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

#### Calcium-Rich Bones

Investigation #6

#### Description

Explore the role of calcium in making strong bones.

#### Materials

- 6 chicken bones
- 6 containers
- Calcium tablets
- Vinegar

#### 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: Investigate

- 1) Place one chicken bone in each of the 6 glasses.
- 2) Pour vinegar over each bone.
- 3) Do not add any calcium to the first container.
- 4) In the second container, add 300 milligrams of calcium.
- 5) In the third container, add 600 mg calcium, 1,200 mg in the fourth, 1,800 mg in the fifth, and 2,400 mg in the sixth.
- 6) Leave the bones for 5 days.
- 7) Compare the results.
- 8) Drop a calcium tablet into a cup of vinegar. How does it react?

## My Results

### Explanation

In addition to calcium, bones also contain phosphorous. However, it is the calcium salts that make bones rigid. Acids such as vinegar can dissolve those calcium salts and leave the bone soft and rubbery. In this experiment, the more calcium that was in the container, the stronger the bones remained.

Because the mineral calcium provides rigidity to the bones, it is important to eat calcium rich foods 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. The elderly must be very cognizant of this as well to avoid osteoporosis.

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