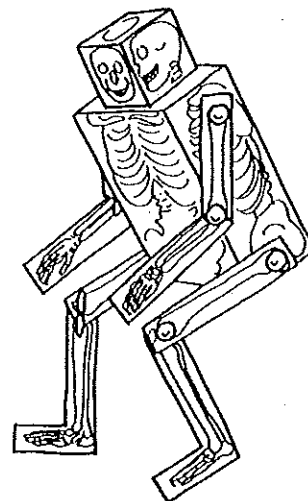


LETTER TO PARENTS

SCIENCE NEWS

Dear Parents,

Our class is beginning a new science unit using the FOSS Human Body Module. In this unit your child will investigate the basic structural systems of his or her body, which include the skeleton, joints, and muscles, and the ways these systems work together to provide movement and coordination. This is an exciting unit for students. Over the next 6-8 weeks they will engage in thoughtful investigations exploring bones, building skeletons, making models, and testing their responses to sensory stimuli.



Your child's interest in the structure of the human body can be increased by asking about the investigations at school and by providing additional experiences at home. Investigate a turkey or chicken bone, or dissect a chicken wing to expose the muscles, bones, tendons, and ligaments. Has a family member had an X ray taken recently? Ask for the X ray; your child will enjoy examining it and sharing it with the class. Physical activity is a great way to increase awareness of the human body. Encourage a game of Bone Tag or Twister. Last, but not least, visit the library to check out some great books.

Watch for the Home/School Connection sheets I will be sending home with your child from time to time. These suggest ways for the whole family to look more closely at the structure of the human body and its wonders.

We are looking forward to many weeks of exciting investigations of the human body. If you have any questions or comments, or have expertise you would like to share with the class, please drop me a note.

Comments: I have included a few activities you can do at home that are included on the 3rd grade webpage that you can download and print out.

Please help your child learn the bone names, they will be tested on these (you will be impressed!) Don't worry about spelling, the bone names will be listed for them, they just need to be able to recognize each name and put in on the proper line next to the bone for the test. Thank you for your help!

Mrs. Sooner

HOME/SCHOOL CONNECTION

INVESTIGATION 1: BONES (page 2)

Materials

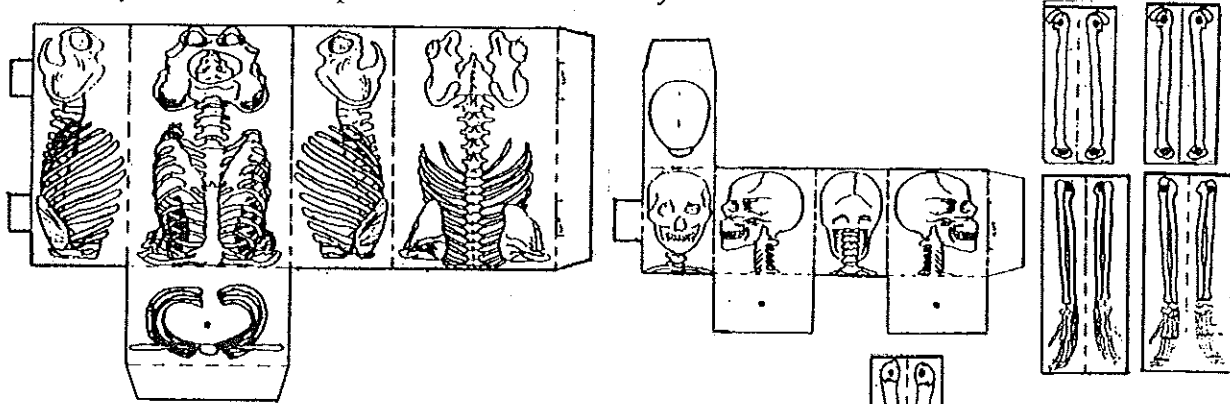
- 1 Bonita parts sheet on card stock
- 9 Paper fasteners, 1/2" long
- Transparent tape

Tools

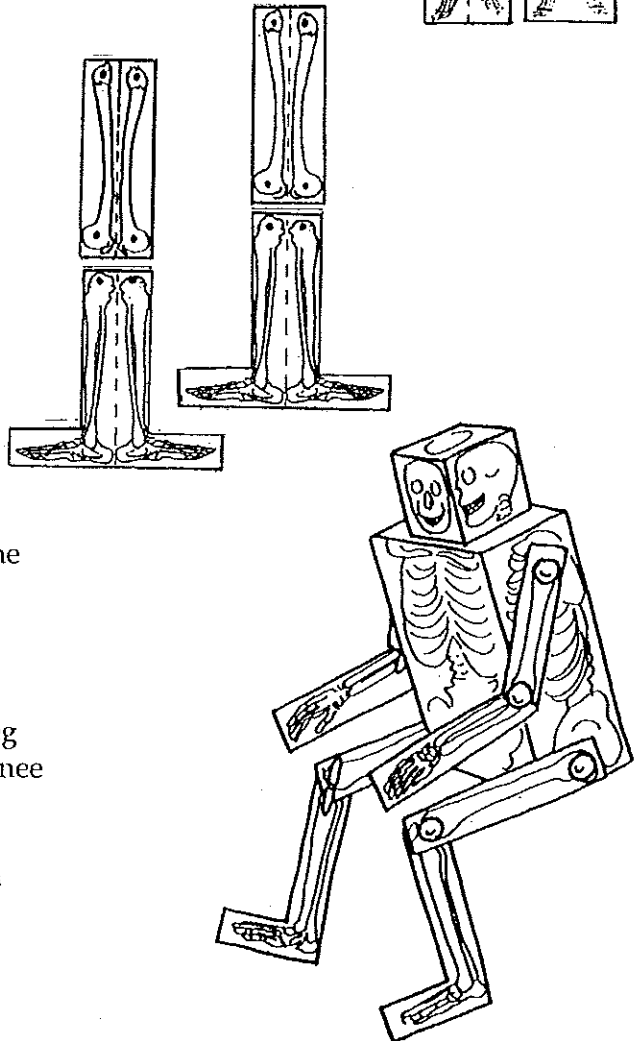
- 1 Scissors
- 1 Small nail to punch holes (4-penny)
- 1 Small piece of corrugated cardboard

NOTE: The slits for the three tabs must be cut with a mat knife before students start assembly.

1. Trace around each of the ten Bonita pieces with your finger. Carefully cut out the ten pieces on solid lines only.



2. Fold along all dotted lines. Put tabs into slits. Do not use any tape yet.
 - The torso folds into a box.
 - The head folds into a box.
 - The legs and arms fold in half.
3. Make holes for the paper fasteners. Place each Bonita piece on the cardboard and use a nail to poke a hole through the dark circles. The dark circles mark joints on all but the torso.
4. Attach the head to the torso. Put a fastener through the hole in one tab on the head, then the second tab, and finally the hole in the torso. Fold the head into a box.
5. Attach the legs to the torso. Make sure the kneecap is in the correct place. Put the lower leg inside the fold of the upper leg. This way the knee joint will move like a human knee joint.
6. Attach the arms to the torso. Put the lower arm inside the fold of the upper arm.
7. Use small pieces of transparent tape to secure Bonita's torso and head as little boxes.

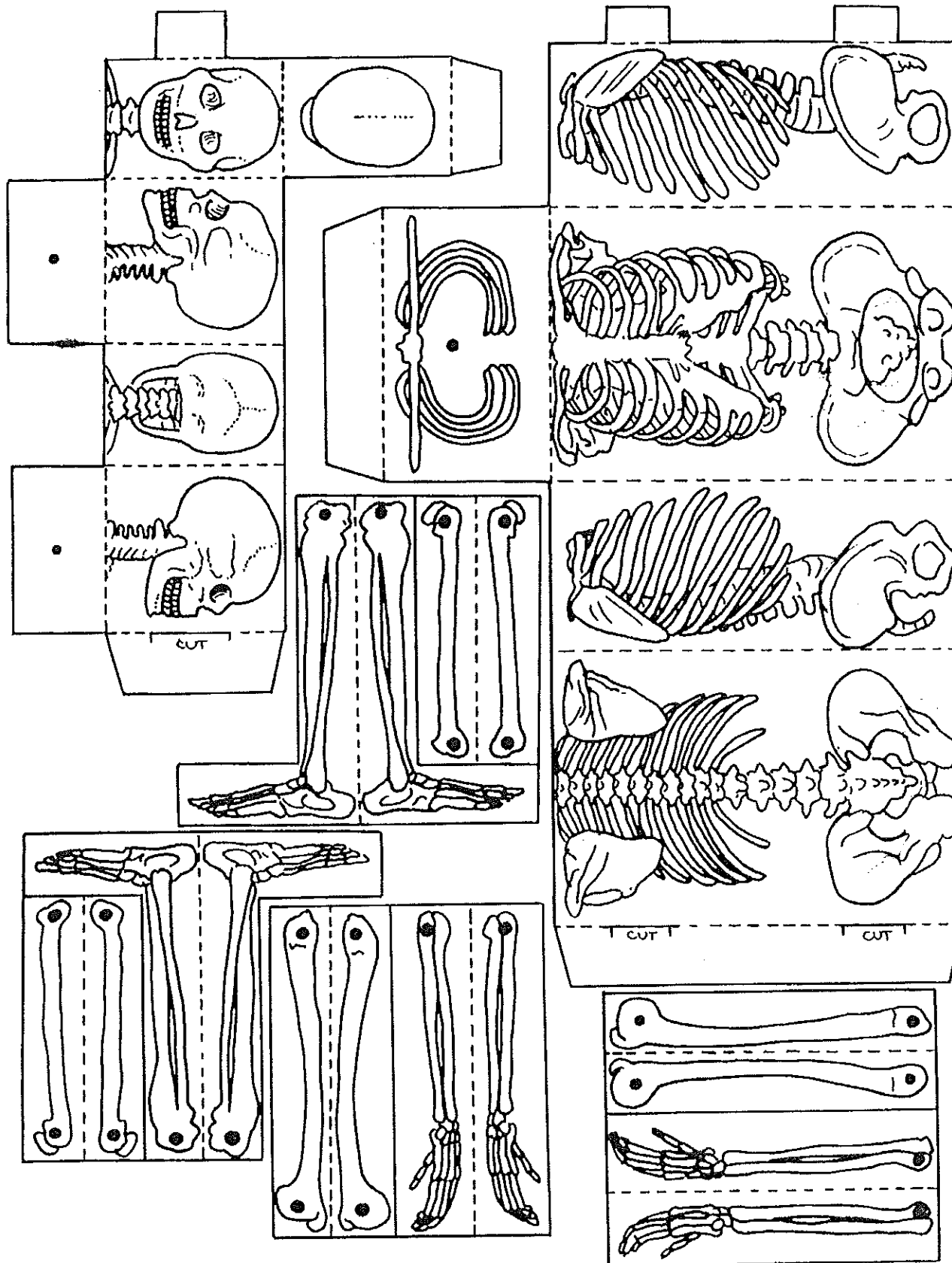


Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 1: BONES (page 1)



Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: MUSCLES

Try these investigations with family and friends.

A SHORTER ARM?

1. Stand next to a wall.
2. Stretch your arm straight out from the side of your body.
3. Adjust your position until the tip of your middle finger just touches the wall. Don't move.
4. Flex your arm rapidly 20 times—fist to chest, full extension, fist to chest, and so on.
5. Reach for the wall again without moving or leaning.

Were you able to touch the wall? _____

What muscles did you use in this exercise? _____

Bones and muscles information: Vigorously exercising your shoulder muscles tightens the muscles in your back. When this happens, the scapula (shoulder blade) is drawn more toward the center of your back. As a result your reach actually shrinks.

A STUCK FINGER?

1. Place your hand palm down on a table.
2. Tuck your middle finger under your palm.
3. Try to lift each finger one by one.

What happened? _____

Bones and muscles information: Long tendons extend from the muscles in your lower arm out along the top and bottom of each finger. The middle finger and ring finger tendons are connected on the back of the hand. The result is that the ring finger cannot extend effectively unless the middle finger does the same.

HOME/SCHOOL CONNECTION

INVESTIGATION 2: JOINTS

Living bone is composed of

- Bone cells and the blood vessels and nerves that maintain them.
- A dense matrix that fills the space between the cells.

It is the dense matrix that we associate with bone. The matrix is hard, strong, and resilient, making bone an ideal material for providing structure and protection.

The matrix is composed of two main materials:

- Mineral salts, mostly calcium phosphate, 65%.
- Long fibers of collagen, a flexible protein, 35%.

To find out more about bones, try this investigation at home.

- Remove all the meat from a cooked chicken wing or drumstick. Wash the bone well, perhaps using a metal scrub pad.
- Let the bone dry overnight.
- Place the bone in a jar. Cover the bone with regular household vinegar.
- In a day or two pour off the old vinegar and replace it with new vinegar.
- Repeat this process of refreshing the vinegar for a week or 10 days.
- Rinse the bone thoroughly with water and check it for rigidity.

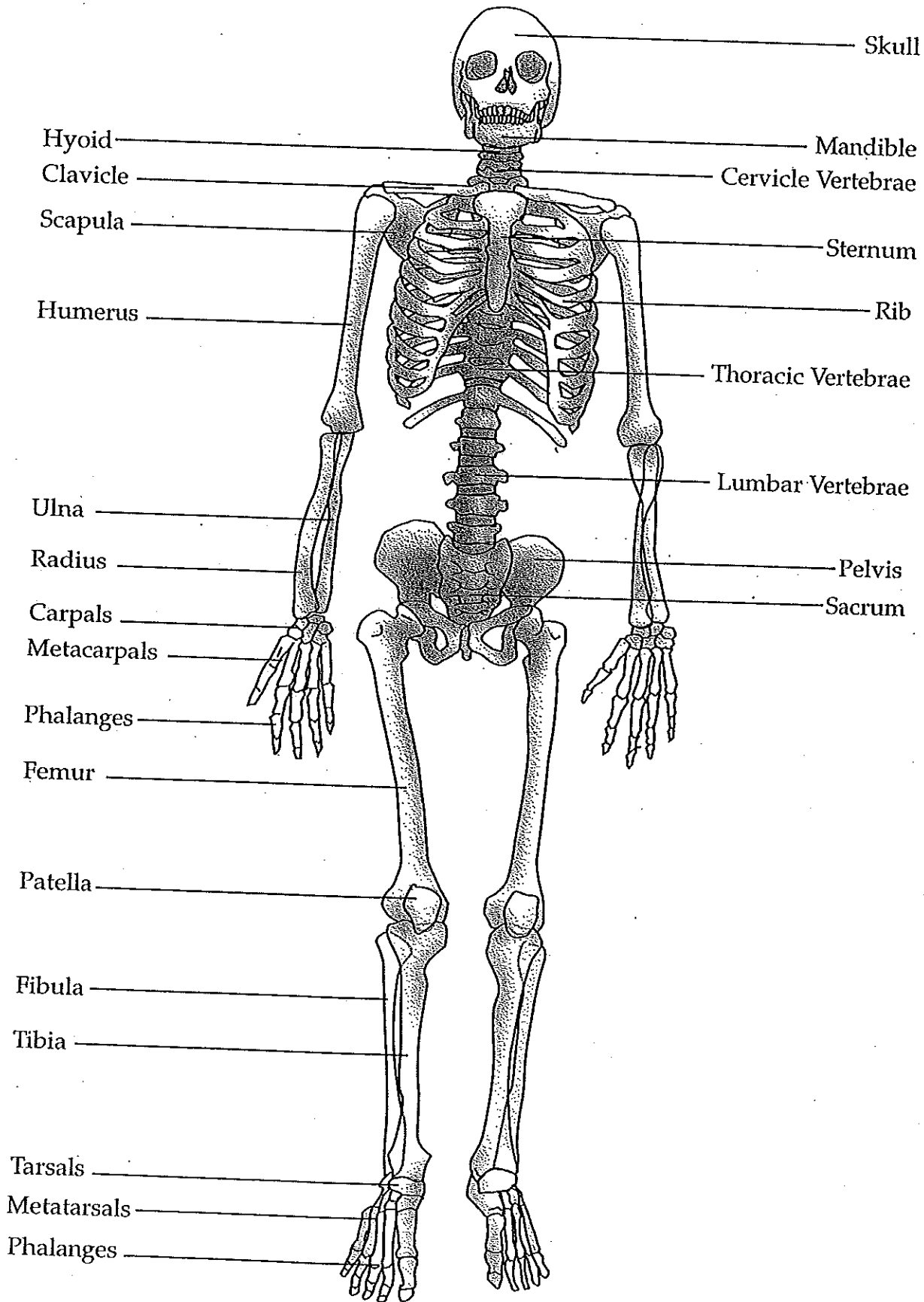
What were your results? Describe the bone and what it can do.

Vinegar is a mild acid. What do you think happened when the bone was put into acid?

Name _____

Date _____

BONE NAMES



Practice