C:\Users\kaemigh\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\0LYL2ML0\MC900329190[1].wmfBones and Calcium Lab

**Background:**

Acetic acid in vinegar makes calcium water-soluble (meaning it is drawn out and dissolved in water).

(write and answer these questions in your notebook)

1. What are the two types of bone?
2. What is the major ingredient of bone?
3. What is the skeletal system comprised of? (4 things!)
4. What are the 5 main functions of the skeletal system?
5. Why is our skeletal system important?

**Problem:** What happens to a bone when it loses calcium?

**Prediction:** (read the procedure and then make a prediction as to what you think will happen to the bone at the end of the lab)

**Procedure:**

1. Put on gloves and goggles
2. Obtain a bin of supplies from Ms. Emigh
3. Observe the bone (look carefully at it, try bending or stretching it, measure it, etc). Record all observations in your data table
4. Draw a picture of the bone in your data table…label any important aspects of the bone you feel will help in its description
5. C:\Users\kaemigh\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\3A2H7X3C\MC900053352[1].wmfPlace the bone in your glass container
6. Pour enough vinegar in the container to completely cover the bone
7. Let the bone soak for one week
8. Check the bone at least 3 times during the week
   1. Put on gloves and goggles
   2. Take bone out of container
   3. Try bending and stretching the bone
   4. Notice which parts of the bone are most changed
   5. Record data in chart
   6. When you are done, put the bone back in the container. Add more vinegar if necessary to make sure your bone in completely covered with vinegar
9. When lab is complete, dispose of your bone and wash all lab equipment

**Data table:** (create this chart in your notebook – IT SHOULD TAKE UP THE WHOLE PAGE!)

|  |  |  |
| --- | --- | --- |
| **Day** | **Changes in the bone (observations)** | **Picture of the bone (w/labels if needed)** |
| **1** |  |  |
| **4** |  |  |
| **6** |  |  |
| **7** |  | **(show what happens when you try to bend the bone)** |

**Conclusion:**

**(Answer the questions in your notebook)**

1. When did you first see changes in the bone? Describe the types of changes you saw.
2. Which parts of the bones changed first?
3. Compare your results to your hypothesis. Explain whether your results support your hypothesis.
4. Recall what you learned about the difference between spongy and compact bones (refer to section 1.2 if necessary!) The ends of long bones are made of spongy bone. Do your findings match what you already learned about spongy bone? Explain your answer. Hint: Think about which parts of the bone changed first.
5. Do you think the bone would break more easily before or after it was soaked in vinegar? Explain your answer.
6. What role do you think calcium plays in the makeup of bones?
7. As adults get older, they may get a disease known as osteoporosis. People with osteoporosis have lost large amounts of calcium from their bones. What kinds of problems do you think people with osteoporosis might have? (think about what happened to the bone in this experiment)

\*\*Write an AHA Connection for this lab – be sure to discuss what you learned about bones and calcium!!

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