

# Mr. Bottle Bones

**Target Audience:** *Upper Elementary School to Middle School*

**Education Setting:** *Classroom Activity or Interactive Display*

## Objectives:

- Teach students about their bones and the nutrients needed for healthy bones.

## Preparation

For helpful visuals, visit: <http://familyfun.go.com/how-to-videos/familyfun-mr-bottle-bones-762359-v/>

## Materials Needed:

- 8-9 clean, plastic gallon jugs
- String
- Scissors
- Craft knife
- Low temperature glue gun
- One-hole punch

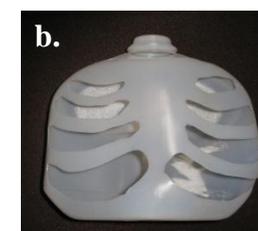
## Prepare:

- Head-** Choose a jug with a pair of circular indentations opposite the handle and turn it upside down. In the corner, opposite the handle, cut out a large smiling mouth, eyes and nose. Make two small slits in the top of the head and tie a loop of string through them to hang the finished skeleton.
- Chest-** Cut and trim away plastic to make a rib cage down the center of a right-side-up jug, directly opposite the handle.

*Assembly Instructions: Glue the head and chest together at the neck by connecting the spouts of the two jugs with a thick band of hot glue. Hold the jugs together for a few minutes until the glue cools.*

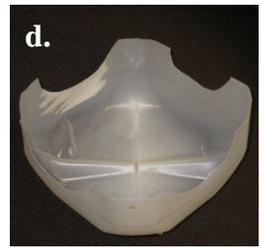
- Shoulders-** Cut off two jug handles (leaving a small collar on the ends) and punch a hole at one end of each shoulder.

*Assembly Instructions: Attach the shoulders to the chest section with hot glue (attach the side that does not have a hole punch).*



# Mr. Bottle Bones

- d. **Hips**- Cut all the way around a jug, about 4-1/2 inches up from the bottom. Take the bottom piece and trim away a small smile shape from each side to make a four-cornered shape. Punch holes in two opposite corners.



- e. **Waist**- Cut out two spouts, leaving a 1/2 inch collar on each. Glue the spouts together.



***Assembly Instructions:** Hot glue the waist to the bottom of the chest and the top of the hip section. (For added security, you may wish to cut a circular hole in the "hips" and insert one end of the waist securely, then hot glue the waist to the hip section.)*

- f. **Arms and legs**- Cut eight long bone shapes from the corner sections of three jugs (cut into the curved shape of the jug to make the bones even more realistic. From two of these bones, cut out the center to make limbs (forearms). Punch a hole through the ends of all eight bones.



- g. **Hands and feet**- trace hands and feet onto the side of a jug, then cut out the shapes. Punch a hole in each shape.



***Assembly Instructions:** With string, tie feet to the leg bones, and hands to the arm bones. Tie the leg sections to the hips and the arm sections to the shoulders.*



## Ideas for Using "Mr. Bottle Bones:"

1. Use as a decorative, fun display at a booth
2. Assemble Mr. Bottle Bones as an activity
3. Attach facts about calcium, vitamin D and bone health to each part of the skeleton
4. Play a bone health trivia game and award Mr. Bottle Bones to the person who correctly answers the most questions
5. Conduct a taste test of calcium-rich foods and add a segment to the skeleton for every food sampled
6. Label the major bones on Mr. Bottle Bones and use as a springboard for discussing bone health

# Mr. Bottle Bones

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## Group Activity

Engage students in the creation of “Mr. Bottle Bones” as a supplemental activity for a health lesson.

1. Ahead of time:
  - Prepare Mr. Bottle Bones pieces as directed (pages 1-2), but skip assembly instructions.
  - Cut apart instruction sheets (page 4).
  - Read through true/false questions (page 5).
  - Plug in hot glue gun and set out scissors and string.
  
2. Explain the rules of the game to the class:
  - **They will have ten minutes to assemble “Mr. Bottle Bones.”**
    - If they complete assembly in ten minutes or less, they will be awarded 5 points.
    - If they do not complete assembly in ten minutes, they will lose 1 point for each minute beyond ten minutes.
  - **They will start out with ten points.**
  - **For every true/false question answered correctly:**
    - Win one piece of the “skeleton” to attach
    - Win one point
    - If they correctly answer a “BONUS point” question, win one extra point.
  - **For every true/false question answered incorrectly:**
    - Lose five points.
  - **In order to win, there must be ten points or more remaining at the end.**
  
3. Begin the game, record start time. For every question answered correctly, give one instruction sheet (in order, A. through E.) to students, who must follow the instructions to add one part of the “skeleton.” If the question is answered incorrectly, deduct five points and skip the question. Explain the answer to students.
  
4. Continue play until all questions are asked and the skeleton is assembled.
  
5. Tally points.

*Note: This can also be played as a competition between two teams, with two separate skeletons.*

# Mr. Bottle Bones

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## Instruction Sheets (cut out and give one per question answered correctly, A- F)

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- A. Glue the head and chest together at the neck by connecting the spouts of the two jugs with a thick band of hot glue. Hold the jugs together for a few minutes until the glue cools.



- B. Attach the shoulders to the chest section with hot glue (attach the side that does not have a hole punch).



- C. Hot glue the waist to the bottom of the chest and the top of the hip section. (For added security, you may wish to cut a circular hole in the “hips” and insert one end of the waist securely, then hot glue the waist to the hip section.)



- D. Tie two arm sections to each shoulder with string.



- E. Tie two leg sections to each hip with string.



- F. With string, tie feet to the legs, and hands to the arms.



# Mr. Bottle Bones

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## True or False Questions:

1. Bones are not alive (BONUS point).
2. Your bones need calcium to grow strong and healthy.
3. Bones give your body shape, support, and protection.
4. Milk has other vitamins and minerals besides calcium that are good for you.
5. Milk contains calcium, but yogurt does not.
6. Vitamin D helps your body absorb calcium.
7. The pinkie finger is the smallest bone (BONUS point).
8. Calcium makes up 99% of your bones (BONUS point).
9. Cheese does not contain calcium.

## Answers:

1. **False-** Bones are alive. They start to grow even before you are born. As you grow, your bones grow. Foods such as milk and yogurt have calcium. Calcium helps bones to grow strong and healthy.
2. **True-** Without calcium, bones become weak, and can form incorrectly as they develop. This condition is known as “rickets.” Even after your bones are done growing, they still need calcium.
3. **True-** Without bones you would flop around like a wet noodle. Bones hold your body up and protect internal organs such as your heart.
4. **True-** Milk contains NINE essential nutrients: calcium, potassium, phosphorus, protein, vitamins A, D and B12, riboflavin and niacin.
5. **False-** Milk, yogurt and cheese are all rich in calcium. Make sure you get the recommended three servings every day.
6. **True-** Vitamin D is calcium’s bone building partner. If you don’t get enough vitamin D, your bones can become weak and brittle. Some of the food sources of vitamin D include fortified milk and yogurt products, and fish such as salmon and sardines. People who get adequate exposure to sunlight can make vitamin D inside their bodies, but many people do not have enough exposure to the sun and need to get vitamin D from food.
7. **False-** The smallest bone is found inside the ear. This ear bone is so small (3 mm) that it can fit on the fingernail of your pinkie.
8. **True-** Bones are mainly composed of calcium.
9. **False-** Milk, yogurt and cheese are all rich in calcium. Make sure you get the recommended three servings every day.



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303.451.7711 • 800.274.6544