

**Physical and Chemical Sciences**  
**The Nature of Matter**

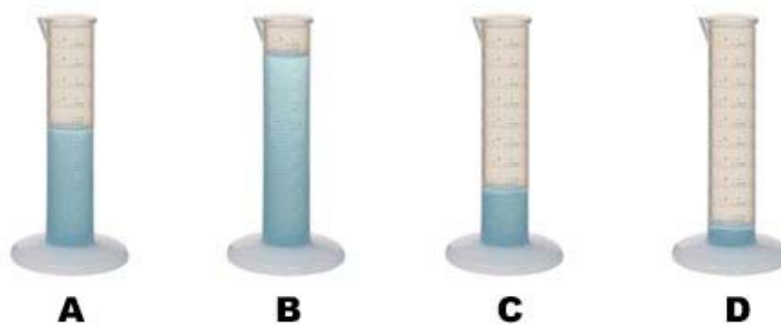
Additional FCAT Practice Questions

Directions: Select the best answer for each of the following questions

---

**Measuring Properties of Materials**

1. Taylor measures water into four identical graduated cylinders.



Which graduated cylinder is holding the greatest volume of water?

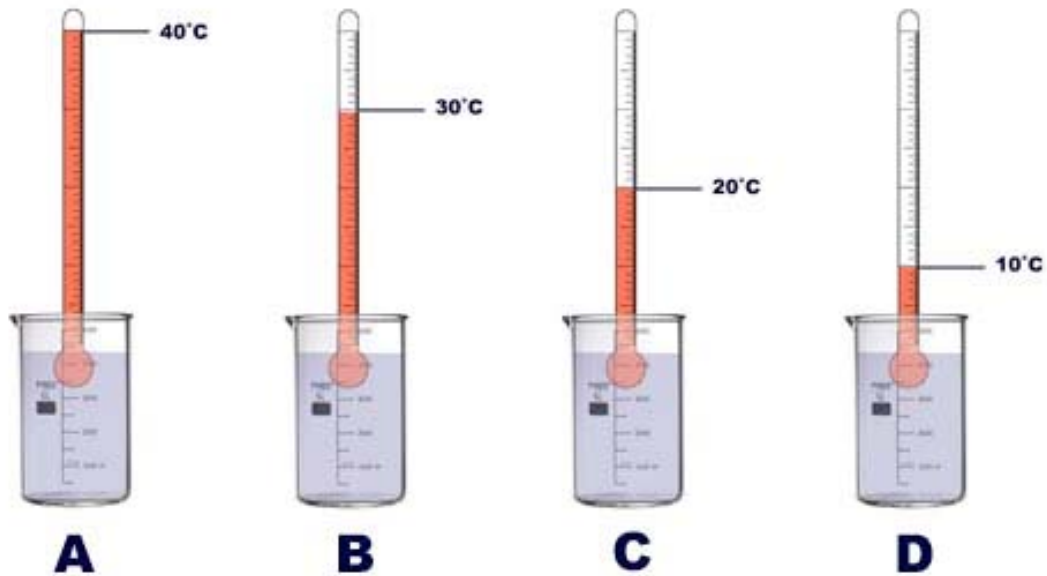
- A. Cylinder A
- B. Cylinder B
- C. Cylinder C
- D. Cylinder D

2. What does the ruler measure about the water in the pot?



- A. density
- B. volume
- C. depth
- D. temperature

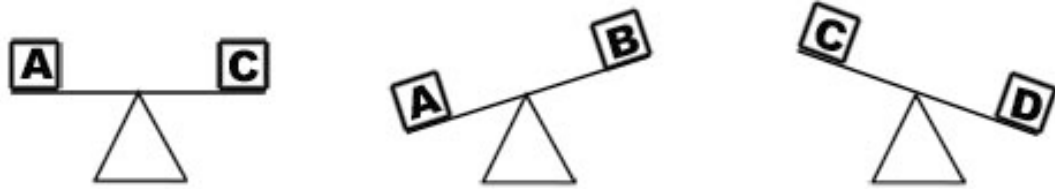
3. Sandi measures the same amount of water into four containers and places a thermometer into each. Each sample of water is at a different temperature.



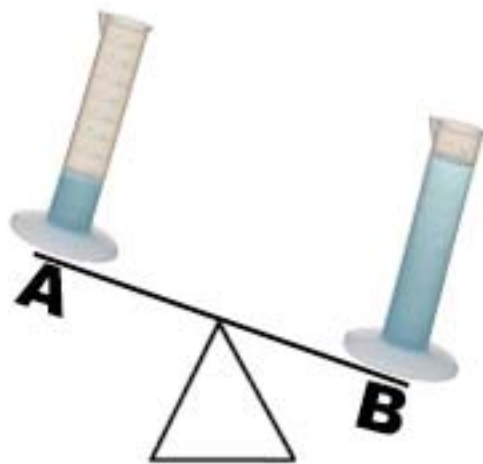
Which needs the greatest amount of heat to be added in order to cause the water to boil?

- A. Beaker D
- B. Beaker A
- C. Beaker B
- D. Beaker C

4. Joe finds the masses of four blocks that are all the same volume. Which block has the **greatest** density?



- A. Block D  
B. Block A  
C. Block B  
D. Block C
5. Ali places two different liquids into identical graduated cylinders. She then places both cylinders onto a balance. Look at the picture.



What can Ali conclude?

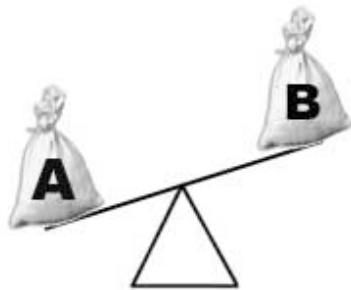
- A. B is more dense than A  
B. A is more dense than B  
C. A is heavier than B  
D. B is heavier than A

6. Caliegh breathes onto her bathroom mirror. Her breath causes the mirror to fog up. What is happening to the water in her breath?
- A. It is condensing as it turns from a liquid to a gas.
  - B. It is evaporating as it turns from a gas to a liquid.
  - C. It is condensing as it turns from a gas to a liquid.
  - D. It is evaporating as it turns from a liquid to a gas.
7. Evan notices that a bowl of water slowly becomes empty when left undisturbed on the kitchen counter for a few days. What could be happening to the water?
- A. It is boiling.
  - B. It is evaporating.
  - C. It is freezing.
  - D. It is melting.
8. Ian's cousin, who lives in Wyoming, floods his back yard with water in the winter to make a small skating rink. What happens to the water during this process?
- A. It cools and melts.
  - B. It cools and freezes.
  - C. It warms up and freezes.
  - D. It warms up and melts.
9. A sample of liquid water has a volume of 10 mL. After cooling the water until it freezes into ice, the volume increases to 11 mL. What has happened to the mass of the water?
- A. There is no change in the mass.
  - B. The mass has increased slightly.
  - C. The mass has decreases slightly.
  - D. The mass has decreases to zero.

10. Jason floats a piece of ice in a glass of water, and then puts the glass with the water and ice onto a scale to monitor its mass. What happens the total mass as the ice melts?
- A. The mass increases.
  - B. The mass decreases.
  - C. The mass stays the same.
  - D. The mass decreases, and then increases again.

**Total Weight Equals the Parts**

11. Sue is building a jigsaw puzzle. The puzzle is made of 500 pieces, each with a mass of 2 grams. What is the total mass of the puzzle?
- A. 250 grams
  - B. 500 grams
  - C. 2 grams
  - D. 1000 grams
12. Brin is making two bags with equal numbers of identical marbles. He puts a handful of marbles into one bag and places it onto a scale.



- What should Brin do to make sure the second bag has the same number of marbles as the first bag?
- A. Add marbles to bag B until the balance tilts up.
  - B. Remove marbles from bag B until the balance is level.
  - C. Add marbles to bag B until the balance is level.
  - D. Remove marbles from bag B until the balance tilts up.

13. Theresa wants to find the mass of her dog, but her dog won't stand quietly on a scale long enough for her to get a reading. She stands on a bathroom scale that has readout in kilograms to find her own weight. What could she do to find the mass of her dog?
- A. Pick up her dog and stand on the scale. The readout is the mass of the dog.
  - B. Put her dog back on the scale and read it even though the dog will not keep still.
  - C. Pick up her dog, stand on the scale and add her mass to the total.
  - D. Pick up her dog, stand on the scale and subtract her mass from the total.
14. A lunch box with a mass of 600 grams is used to hold a 200 gram apple, a 150 gram sandwich, a 100 gram cookie and a 125 gram Florida orange. What is the total mass of the lunch box and contents?
- A. 1 175 grams
  - B. 600 grams
  - C. 575 grams
  - D. 1050 grams
15. A certain empty bag has a mass of 50 grams. When filled with apples the mass of the bag and contents is 1300 grams. If each apple has a mass of 250 grams, how many apples are in the bag?
- A. 4
  - B. 6
  - C. 5
  - D. 7

## Changes in Properties

16. Holata decides to do an experiment with soda pop by pouring some of the liquid in a bowl and allowing it to evaporate in the sun. After a few days, the soda has been reduced to a thick syrup. After a few more days, tiny crystals appear in the syrup. What can Holata conclude from this experiment?
- A. Soda pop is not a liquid.
  - B. Soda pop is not a mixture.
  - C. Soda pop is not a solution.
  - D. Soda pop is not a pure substance.
17. Which term best describes an oatmeal chocolate chip cookie?
- A. The cookie is an element.
  - B. The cookie is a mixture.
  - C. The cookie is a compound.
  - D. The cookie is a solution.
18. Suppose some sawdust is mixed with some white sand. In order to separate them again, the mixture is placed in a washtub and water is added. The mixture is stirred and then allowed to sit for a while.
- A. mixture and solution
  - B. mixture and suspension
  - C. liquid and solution
  - D. solid and suspension
19. A granola bar is made of many different ingredients. The ingredients list shows rolled oats, rolled whole wheat, brown sugar, coconut oil, yogurt coating. Which term describes the cereal?
- A. mixture
  - B. compound
  - C. element
  - D. solution

20. Pria has been given a pure gold necklace as a keepsake from her grandmother. What kind of a substance is gold?
- A. a compound
  - B. a mixture
  - C. an element
  - D. suspension

#### Answers

- 1. B
- 2. C
- 3. A
- 4. A
- 5. D
- 6. C
- 7. B
- 8. B
- 9. A
- 10. C
- 11. D
- 12. C
- 13. D
- 14. A
- 15. C
- 16. D
- 17. B
- 18. B
- 19. A
- 20. C