FORM A HYPOTHESIS

2. Sample hypothesis: I think the penny is made of copper because it is the same color as the copper sample. I think the nickel, dime, and quarter are mostly made of zinc because they are almost the same color as the zinc sample.

DRAW CONCLUSIONS

10. The penny is made mostly of zinc (unless the penny was made before 1982; then it is mostly copper). The nickel, dime, and quarter are made mostly of copper. The densities of the coins are very close to the densities of the pure metals that primarily compose the coins.

White Before Your Eyes

ANALYZE THE RESULTS

1. All four substances are white solids, and are granular or powdery.

DRAW CONCLUSIONS

3. reactive with water—baking powder; reactive with vinegar—baking powder, baking soda; reactive with iodine—cornstarch

Space Case

PROCEDURE

5. The water could not enter the cup because air occupied the space. Once the hole was punched, the water could force the air out of the cup and occupy the space in the cup.

Changing Change

PROCEDURE

5. The shiny copper surface became coated with a dull, green substance. The color change and change in the appearance of the coin indicated that a chemical change took place.

Physical or Chemical Change?

PROCEDURE

4. The burning wooden stick is undergoing a chemical change because the wood is being changed into a new substance with different properties. Separating the iron filings and the powdered sulfur is a physical change because the components of the mixture did not change into new substances. The effervescent tablet undergoes a chemical change when it is dropped in the water because it forms a new substance with different properties.

Volumania!

ANALYZE THE RESULTS

1. Sample answer: The units of milliliters should be changed to cubic centimeters because you are measuring the volume of a solid object.
2. Sample answer: The units of milliliters should be changed to cubic centimeters because you are measuring the volume of a solid object.

ANALYZE THE RESULTS

1. Answers may vary. Often, the preferred hand will be slightly larger due to greater muscle development.
2. Sample answer: It would not make a difference; A hand's volume remains the same regardless of its shape.
3. Answers may vary by class. Check for correct graphing technique and interpretation.

APPLYING YOUR DATA

Designs should center on finding the volume of the body through water displacement. The equipment designed should be large enough to perform the experiment and allow for overflow. Accept all reasonable answers and findings.

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