

Prosthetic Leg

Name: \_\_\_\_\_

Grade 5 – Design Task Assessment

Date: \_\_\_\_\_

Directions: For each of the questions below, choose the BEST answer.

1. Mass is the \_\_\_\_\_.
  - A. amount of matter in an object
  - B. amount of space something takes up
  - C. measure of how heavy an object is
  - D. amount of matter per a unit of volume
  
2. Select the best instrument to measure the mass of a rubber ball.
  - A. Ruler
  - B. Graduated cylinder
  - C. Measuring cup
  - D. Triple beam balance
  
3. If Juan wanted to know the volume of his favorite rock, which instrument would he use to measure the volume?
  - A. Ruler
  - B. Graduated cylinder
  - C. Triple beam balance
  - D. Thermometer

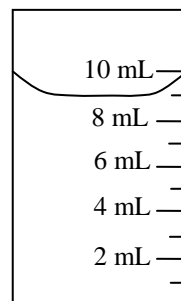
4. A device that acts like a human body part is called a \_\_\_\_\_.
- A. model
  - B. design
  - C. prosthetic
  - D. skeleton
5. Lisa is building a model race car. She would like to test how well her race car performs compared to her friend's race car. What is most important for Lisa and her friend to communicate to each other so they can compare test results?
- A. How much their cars cost.
  - B. The procedures they will use to test their cars' performance.
  - C. Their predictions of how well their cars will perform.
  - D. The possible ways they will redesign their cars in the future.
6. Carl puts a brick into a bucket of water. He notices that the water level in the bucket goes up when the brick is in the water. The best explanation for this is \_\_\_\_\_.
- A. the brick adds more water to the bucket
  - B. the brick splashes water out of the bucket
  - C. the brick does not affect the water in any way
  - D. the brick pushes water out of the way when it is submerged

7. Sara put a ball into a graduated cylinder filled with water. The water level before she added the ball was 100 mL. After she put the ball in the water and it was completely submerged, the water level was 120 mL. What information can she determine about the ball?

- A. Its volume is 20 mL.
- B. Its volume is 120 mL.
- C. Its mass is 20 g.
- D. Its mass is 120 g.

8. What is the volume of liquid in the graduated cylinder?

- A. 10 mL
- B. 9 mL
- C. 8 mL
- D. 7 mL

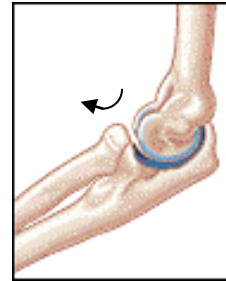


9. Sally is designing a prosthetic arm for a person who will use it while swimming. Before building a prototype of a prosthetic arm, Sally checked with different companies to find out which waterproof materials were available. She also investigated how swimmers use their arms while swimming, and different ways she could build the arm. Which stage of the design process is this?

- A. Create a prototype to try to solve the problem.
- B. Redesign to improve the solution.
- C. Test the prototype and see how well it solves the problem.
- D. Research and brainstorm potential solutions.

10. What type of joint is shown in this picture of a human elbow?

- A. Ball and socket
- B. Projecting
- C. Gliding
- D. Hinge



11. Terry is designing and building a prototype for a prosthetic hand. She is getting ready to choose the materials to use in her prototype. Which material would be best to use to model the muscles in her prototype?

- A. Pipe cleaners
- B. Springs
- C. String
- D. Popsicle sticks

12. Jonathan is working on his science homework; his teacher provided the class a handout about a design challenge to create a new toy for the local Toys for Tots program. What is the first thing Jonathan should do to start working on this design project?

- A. Do research and brainstorm.
- B. Develop possible solutions and select a solution.
- C. Identify the design problem from the handout.
- D. Evaluate and redesign.