

Name: _____

Virtual Density Laboratory Gizmo

Click "Launch Gizmo" under "Density Laboratory" and complete the following activity.

Learning Target: Apply the principle of densities to floating and sinking objects.

1. What is the mass of object #11? How did you determine the mass?
2. What is the volume of object #11? How did you determine the volume?
3. How many grams are in 1 mL of object #11?
4. What is the density of object #11?
5. Place object #11 in the beaker of liquid and change the liquid density until it neither sinks nor floats (is neutral). At what liquid density does the object neither sink nor float?
6. How do your answers for questions 4 and 5 compare to each other?

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7. What can you say about the densities of liquids and neutral objects?

8. Without measuring the mass or volume of any objects, which objects are more dense than object #11? Which are less dense than object #11? Put the object #'s in the chart below:

More Dense than Object #11	Less Dense than Object #11

9. Explain how you knew which objects were denser than object #11.

10. Which object is the most dense of all? Explain how you knew.

11. Which object is the least dense of all? Explain how you knew.

12. Use any method you want to find out the density of object #9. Explain how you did this.

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13. Remove all of the objects from the beaker. Place object #10 in the water. Change the liquid density to 0.9 g/mL. Slowly increase the density of the liquid. What happens to the block? Why?

14. A famous king of Syracuse asked Archimedes to find out if his crown was made of pure gold, or if he had been duped by the goldsmith. Which of the three crowns is real? The density of gold is 19.33 g/mL. Explain how you got your answer.