



Lesson 3: Water Density

Water density is calculated by dividing its volume (the amount of space it takes up) from its mass (the amount of matter it has). Some describe density as the compactness of a material. No matter which definition you prefer, the density of water is an interesting topic to study. Get ready to wade into this investigation of the density of ocean water.

Doing the Science

1. Start the Trench Dive Simulation by clicking on the “Sim” tab.
2. Click on the “Water Density” button to sample the density of the water at the surface. Record the water density in Table 1.
3. Next, click the green down arrow on the left side of the screen until the depth measurement reaches 200 m.
4. Click on the “Water Density” button to take another sample of the water density at 200 m. Make sure to record your data in Table 1.
5. Repeat steps 3 and 4 in increments of 200 m until you complete Table 1.

Table 1.

Depth (m)	0	200	400	600	800	1,000	1,200
Water Density (g/cm ³)							

Do You Understand?

1. In the simulation, click on the blue “Graph” button. Next, click the “Water Density” button. Review the graph and then describe the shape of the density graph.

2. Using scientific reasoning and your data, explain why you think the water density does or does not change with increasing ocean depth.

3. Using the background information and your own data, predict the water density at 1,400 meters, and then take a sample. Were you correct? Please explain your response.