



Trench Dive

STEM Sims

Lesson 1: Salinity

Salinity is a scientific term that refers to how much salt is dissolved in water. In this context, salt is not only your average table salt (sodium chloride, written scientifically as NaCl), but also includes magnesium sulfates (MgSO₄), sodium bicarbonates (NaHCO₃), and many more. How do you think the salt concentration of ocean water changes as you move deeper into the water?

Doing the Science

1. Start the Trench Dive Simulation by clicking on the “Sim” tab.
2. Click on the “Salinity” button to sample the salinity at the surface. Salinity is measured in units called *practical salinity units* abbreviated “*psu*.” Record the salinity in Table 1.
3. Next, click the green down arrow on the left side of the screen until the depth measurement reaches 300 m.
4. Click on the “Salinity” button to take another sample of the salinity at 300 m. Make sure to record the salinity in Table 1.
5. Repeat steps 3 and 4 in increments of 300 m until you complete Table 1.

Table 1.

Depth (m)	0	300	600	900	1,200	1,500
Salinity (psu)						

Do You Understand?

1. Did the salinity of the ocean water change with the depth? If so how?

2. In the simulation, click on the blue “Graph” button. Next, click the “Salinity” button at the bottom of the screen. Review the graph and then describe the shape of the salinity graph.

3. Return to the simulation screen by clicking the yellow “Data” button. Continue taking salinity samples until you find the lowest salinity value. Record the depth and lowest salinity in Table 2 below.

Table 2.

Depth (m)	
Salinity (psu)	