

Activities Days 6 – 13	
Activity #4	Salinity Lab and Water Pressure
Time	Two 45 min sessions
Materials	<ul style="list-style-type: none"> • salt, water, 2 containers per group, thermometers, 2 plastics eggs per group, playdough, permanent marker Note: You will need to create the salt water solution ahead of time. (35 g of salt to 1000g of water works best) • balances-1 per group, gram weights, empty soup cans-1 per group, water, 2 styrofoam cups, objects to fill one cup, water bottles with top, rubberbands, multicolored paper clips, straws
Guiding Questions	
<ol style="list-style-type: none"> 1. Why is the ocean salty? 2. How does the ocean move? 3. What changes as the ocean gets deeper? 	
Plan	
<p>Plans for part 1 of activity: Salinity lab- Before giving the students the plastic eggs mark several cm increments above and below the middle of the egg with a permanent marker. Each group has one container of fresh water and one container of salt water. Place the eggs into the containers and record observations. Discuss the variables of the types of containers being the same, the amount of the liquid being the same, the eggs, and the placement of the egg into the water being either pointy end in first or the rounded end first. Both float. Now add playdough to the first cm mark of both eggs and replace into the water. Discuss observations. Add play dough to the next mark and repeat. Why does the egg in the salt water mix not sink as far as the egg in the fresh water? Read why the ocean is salty in textbook or at: http://chemistry.about.com/od/waterchemistry/f/why-is-the-ocean-salty.htm</p> <ol style="list-style-type: none"> 1. Guiding Questions to ask during this part of the activity: what are your observations and inferences about why one egg sinks more than the other? <p>Plans for part 2 of activity: Have students use balance to find the mass of a can filled halfway with water then find the mass with the can filled almost to the top with water. Discuss how it would feel to be under that can or under a lot of water. The weight increases as does the pressure . Model for group; have two styrofoam cups with lids if possible, one empty and one full of pennies, poker chips, or cm cubes. Crush the empty one with a book. Then try to crush the other using the same force. It cracks but doesn't crush due to its density. Make cartesian divers with small water bottle instead of 2L.: http://www.sciencetoymaker.org/diver/assembl.html</p> <ol style="list-style-type: none"> 2. Guiding Questions to ask during this part of the activity: what will have to be done to the mechanisms we are putting in the water to extract the energy to account for water pressure? 	
Differentiation	<ul style="list-style-type: none"> • Provide a checklist for the lab
ELL Modification	<ul style="list-style-type: none"> • Have salt for the student to touch
Check for Understanding	<p>Quiz on how ocean water moves and the term salinity</p> <p>Read reflections</p>