Thermohaline Circulation Introduction

- 1. If you were to travel in a submersible, how would the ocean change as you went deeper?
- 2. Looking at the pictures, what are some of the features you observe with respect to the construction of the submersibles?
- 3. What do you think are the purposes of each the above features you observe?



Thermohaline Circulation GP: Variations in the Ocean

Using the information provided on page 231 in the Marine Science: The Dynamic Ocean textbook, complete questions 3 – 10 on page 232.

	Surface Zone	Surface	35.5 PSU	1.025 g/cm ³	22 °C	1 atm
	Transition Zone	250 m	35.0 PSU	1.026 g/cm ³	22 °C	25 atm
		500 m	34.4 PSU	1.027 g/cm ³	15 °C	50 atm
		750 m	34.4 PSU	1.027 g/cm ³	9 °C	75 atm
	Deep Zone	– 1000 m	34.6 PSU	1.028 g/cm ³	6 °C	100 atm
		1500 m	34.7 PSU	1.028 g/cm ³	5 °C	150 atm
		2000 m	34.8 PSU	1.028 g/cm ³	4 °C	200 atm
		2500 m	34.9 PSU	1.028 g/cm ³	4 °C	250 atm
		3000 m	34.9 PSU	1.028 g/cm ³	4 °C	300 atm
Note: Average ocean depth is ~3800 m.		5000+ m		©	U.S. Sate	llite Laboratory



Thermohaline Circulation GP: Deep Ocean Circulation

Read pages 233 through 237 in the Marine Science: The Dynamic Ocean textbook and complete questions 7 – 17 on pages 239 – 242.







Thermohaline Circulation Independent Practice

- 1. What are the three main layers of the ocean? Describe the conditions at each layer.
- 2. Explain the relationship between the depth of water and its temperature, density, salinity, pressure, and available light.
- 3. What is bioluminescence? How does it help organisms living in the deep?
- 4. Identify two environmental conditions of the Deep Sea. For each, give one example of how organisms cope with the conditions.
- 5. What is thermohaline circulation? What is the great ocean conveyor?

