Topic/Objectives: 1-3 The Process of Science; Understand that science is a process of investigation into the natural world and includes the knowledge generated through that process.	**Name:** **Date:** **Period:**
Essential Question: What role has the process of science played in the study of the ocean?	

Questions:	**Notes:**
	The Scientific Method ◦ Marine scientists, like other scientists, use the _____ _____ – a systematic way of testing ideas – in research. ◦ The scientific method is a _____ framework guiding the study of nature and not a rigid set of rules. ◦ _____ is critical to all phases of the scientific method; and can be verified by others – an important part of the scientific method.
	The Hypothesis ◦ The scientific method begins with a _____, a testable statement constructed from observations and reasoning, both _____ and _____. ◦ The hypothesis must be worded so that it is _____ by scientific means. ◦ One important aspect of the scientific method is that you cannot _____ a hypothesis. You can only refute a hypotheses based on the _____. ◦ Hypotheses that have been tested repeatedly and not disproven are _____ to be true based on the available evidence.
	Considerations in Research Science ◦ A researcher must look at only _____ factor at a time. These factors that affect observations are the _____. ◦ If a researcher wants to study the effects of temperature on mussels, for example, they could acquire similar specimens of mussels from different locations. ◦ If only temperature is being tested, all other factors must be kept constant (amount of food given, age and size of mussels, oxygen concentration, salinity, etc.). ◦ If two tanks with mussels are kept at different salinities and different temperatures, for example, a researcher cannot attribute altered growth rates to only temperature. The results could be the combination of temperature and salinity.

What is a Theory?

- In everyday language, a _____ can be likened to a “hunch” or what you suspect to be true.
- In scientific language, a scientific theory is a hypothesis that has been tested _____ over time by many people and has not been refuted.
- If there is ample evidence to support the theory, it is then regarded as _____ in the scientific community.

Limitations of the Scientific Method

- Due to the requirements for direct observations and/or measurements and a _____ hypothesis, not all questions can be answered.
- Science can offer no answers on _____, feelings, and beliefs. These are beyond the scope of the scientific method.

Summary: