Name _____ Date _____ Class _____

APPLYING PRACTICES

How Old are Crustal Rocks?

Introduction

In 1915, Alfred Wegener proposed a hypothesis called "continental drift" which suggested that Earth's continents were once part of a large supercontinent called Pangaea, and that 200 million years ago the continents separated and drifted to their current locations. It is this notion of continental drift which forms the basis for the modern theory of plate tectonics. An understanding of tectonic plates and their movements have allowed scientists to better understand the geologic history of Earth and the origins of its features.

Task

Your task is to research, analyze, and evaluate the characteristics of oceanic and continental plates, and how the theory of plate tectonics can be used to explain Earth's geologic features. You will work in groups of 3–4 to conduct your research. When you have finished your research, you will write a report on your findings.

Process

Use your resources to answer the following questions.

1. What is the theory of plate tectonics?

2. What features and characteristics are different between oceanic and continental plates?

3. What were some of the technological advancements that allowed scientists to study the age of the sea floor? What are some of the methods scientists used to determine the age of ocean sediments?

4. What patterns did scientists observe in the ages and magnetism of ocean rocks?

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How Old are Crustal Rocks? *CONTINUED*

5. What happens at plate boundaries between oceanic and continental plates? How does this relate to the age of oceanic crust?

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Report

Once you and your team have completed your research, prepare a 2-page report. The report should summarize what you've learned from your research, and explain how the theory of plate tectonics explains the age and characteristics of oceanic and continental plates.

Resources

Many resources can be used to assist your research. These include journal articles, websites, and scientific news and magazines. You might also visit a university, science museum, or a laboratory, or interview an expert in the field.

Evaluation

Read the following rubric to see how you will be scored on your research and presentation.

Criteria					Points
	0	**5**	**10**	**15**	
Task	The tasks were not completed.	Some effort was made to complete the tasks, but the major ideas are missing.	The tasks were completed but some information was omitted or incorrect.	The tasks were completed with great attention to detail.	
Process	The process was not followed.	The process was begun but not all questions were answered.	The process was followed but some answers were incorrect.	The project showed thorough research and a deep understanding of the topic.	
Report	There was no attempt to create a report.	There was minimal effort making the report.	There was good material and ideas in the report.	The report was excellent, and showed knowledge of the topic.	
Total Score					