NOTES: Sea Floor Spreading Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per\_\_\_\_

**History :** Prior to the 1950’s not much was known about the ocean floor. This changed due to the work of Admiral Harry Hess, a Naval officer and a geology professor at Princeton University. Hess was intrigued with Wegener’s ideas on Continental Drift and the mechanism of continental movement. Hess presented his ideas in a paper titled “History of Ocean Basins”. What did Harry Hess hypothesize about the ocean floor? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**The Ocean Floor**

How do we know the topography of the ocean floor? Name the technology and explain how it works.\_\_\_\_\_\_\_

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What are ocean ridges and how are they formed? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What are ocean trenches and how are they formed? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Name the deepest trench in the ocean. Where is this trench located? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How do we know what the bottom of trenches look like? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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How does sea floor spreading work? Explain what is happening in the diagram below.

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**Why is the ocean floor so young? (Geologically speaking)**

How old are the oldest rocks in the ocean floor? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How old are the oldest continental rocks? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Why is there a difference?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**A Geomagnetic Time Scale**

Basalt is rich in iron (remember – it’s a mafic, extrusive igneous rock). The iron-containing minerals align with the Earth’s magnetic field. Once the rock cools the minerals stay aligned. The magnetic field has reversed several times in geologic history. These flips in polarity are recorded in the rocks.

An isochron is a line on a map that connects points that have the same age. What pattern do you notice in the isochron map to the right? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Wegener’s Missing Mechanism**

How did Harry Hess provide additional evidence to support Alfred Wegener’s hypothesis of continental drift?

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**HOT SPOTS ARE:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Example is located: \_\_\_\_\_\_\_\_\_\_\_\_\_ Why are they not REAL volcanoes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_