Worksheet: Plate Tectonics

name:

*Use sentences. (starts on page 248 of your text)

1. First read pages 248-253. Look at the map A on page 251. About how many million years ago did the Earth look like this?

2. Who is credited with coming up with the idea that the continents were once joined together? What was his radical hypothesis called? (p. 248)

3. *What was probably <u>the first</u> evidence that led some to suspect that the continents were once connected? (p. 248)

4. *Look at figure 2 on page 249 and read the caption. How did Wegener explain the presence of Mesosaurus fossils in both South America and Africa (but nowhere else)?

5. According to pages 249-250, what were the three types of evidence that Wagener used to support his theory?

6. *What is the main point illustrated in figure 3 on page 250?

7. *What do the white areas on map B on page 251 represent?

8. *How did Wegener explain the evidence of glaciers on land that is so close to the equator?

9. *Wegener published his theory in 1915, but it didn't get much attention until 1924. What was the main argument against his theory?

10. *Read pages 254-260. What do SONAR devices send out (down)? Explain why SONAR waves sent down at a mid-ocean ridge would return faster than those sent down at a trench.

11. *What did scientists learn about the thickness of sediment in relationship to the mid-ocean ridges? (p. 255)

12. *Read page 257 and look at the diagrams. Explain what happens to magma that comes to the surface in the "rift valley" (on the diagram).

13. New ocean crust (ocean floor) is constantly being added at the mid-ocean ridges. So, why is our planet not growing?

14. *Read page 258, including all the illustrations and captions. What is meant by the phrase, "a period of reversed polarity"?

15. *Look at illustrations A, B, and C on the bottom of pages 258-259. Why are some strips of the ocean floor colored orange and other yellow on this diagram?

16. The rock that makes up the ocean floor was formed as lava cooled when it erupted at a midocean ridge. Do the rocks that make up the ocean floor get older, or younger as you move farther from the ridge?

17. *Look at the diagrams atop page 259? Why does the depth of earthquakes vary so much here?

18. *What does figure 14 on page 260 show?

19. How many crustal plates are shown on the map on pages 262-263? Be careful not to count some of them twice.