Pangaea Puzzle

Name:

Period:

You have learned that Earth is made up of big chunks of moving rock. These are called **tectonic plates**; their shapes can be easily determined by the pattern of earthquake locations that occur along their edges. In fact, it is the constant, slow, steady movement of these plates moving about and grinding against each other which causes earthquakes and volcanoes in the first place. Based upon your existing knowledge, you know what the land mass arrangement of the Earth looks like at the present day. However, how did it look 220 million years ago? This lab should answer this question for you.

You should have 2 sheets in front of you from the American Museum of Natural History:

- a page with a legend and a giant oval on it, representing Earth
- a page with different landmasses covered in symbols

1. Cut out the pieces of landmasses from the page with a 6 in the lower right corner □ . DO NOT CUT OFF THE GREY SHADED PARTS. The grey shading shows you parts of the plates that are underwater.

2. Try to figure out how the pieces fit together. You can use the locations of deserts □, location of basalt (a kind of volcanic rock) □ , and the locations of different animals that were alive at the time □ . Imagine if some landmasses were connected together. This would mean that any animals on them could walk back and forth between landmasses, and eventually die, leaving fossil evidence of their existence. So, if the shapes of the landmasses fit together nicely, and you find fossils of a particular animal on both pieces, those landmasses must fit together.

3. Once you are confident about your decisions, use a glue stick to glue down the pieces in the center of the page with a giant oval on it □ . Then answer the questions below.

1. Pick two plates that you thought were easy to put together. Write their names here:

_____ and _____

Explain how their shapes made it easy for you to decide that these two plates fit together.

2. Look at the map legend. 220 million years ago, what two dinosaurs show up in North America that help to link the North American plate to other plates?

_____ and _____

3. Pick a dinosaur and write its name here: _____ . How did fossils from this dinosaur help you decide to put certain pieces together?

Lab: 20 points

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4. List 3 different pieces of evidence found on the African plate that helped you connect it to other plates. For each piece of evidence, describe how it connects another plate to Africa.

a) _____ connects Africa to the

_____ plate because...

b) _____ connects Africa to the

_____ plate because...

c) _____ connects Africa to the

_____ plate because...

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5. Explain how the fossilized organisms provide evidence for the existence of Pangaea and support your claim with evidence from the map.

If you want, use one of these sentence frame suggestions (you would only need to use ONE).

- _____ provides evidence for the formation of Pangaea. I know this because the map we created shows _____ .
- Evidence for Pangaea includes _____. The map we created shows that _____ .
- In regards to _____, I believe _____ . My views are based on _____ .

Lab: 20 points