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|  | **Drifting Continents** |
| 1 | In 1910, a young German scientist named Alfred Wegener became curious about why the coasts of several continents matched so well, like the pieces of a jigsaw puzzle. He formed a hypothesis that Earth's continents had moved! **Wegener's hypothesis was that all the continents had once been joined together in a single landmass and have since drifted apart**. He named this supercontinent **Pangaea,** meaning "all lands." According to Wegener, Pangaea existed about 300 million years ago. Over tens of millions of years, Pangaea began to break apart. The pieces of Pangaea slowly moved toward their present-day locations, becoming the continents of today. The idea that the continents slowly moved over Earth's surface became known as **continental drift**. In a book called *The Origin of Continents and Oceans*, Wegener presented evidence to support his theory. |
| 2 | Mountain ranges and other landforms provided evidence for continental drift. For example, Wegener noticed that when he pieced together maps of Africa and South America, a mountain range running from east to west in South Africa lines up with a range in Argentina. Also, European coal fields match up with coal fields in North America. |
| 3 | Fossils also provided evidence to support Wegener's theory. A fossil is any trace of an ancient organism preserved in rock. The fossils of the reptiles *Mesosaurus* and *Lystrosaurus* and a fernlike plant called *Glossopteris* have been found on widely separated landmasses. This convinced Wegener that the continents had once been united. |
| 4 | Wegener used evidence from climate change to further support his theory. For example, an island in the Arctic Ocean contains fossils of tropical plants. According to Wegener, the island once must have been located close to the equator. Wegener also pointed to scratches on rocks made by glaciers. These scratches show that places with mild climates today once had climates cold enough for glaciers to form. According to Wegener's theory, Earth's climate has not changed. Instead, the positions of the continents have changed. |
| 5 | Wegener also attempted to explain how the drift of continents took place. **Unfortunately, Wegener could not provide a satisfactory explanation for the force that pushes or pulls the continents**. Because he could not identify the cause of continental drift, most geologists rejected his theory. For nearly half a century, from the 1920s to the 1960s, most scientists paid little attention to the idea of continental drift. Then new evidence about Earth's structure led scientists to reconsider Wegener’s bold theory. |

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| **Use the text to answer the questions in the box to the right.** |  |
| 1. What is continental drift? |  |
| 1. What was the super continent called? |  |
| 1. What mountain ranges lined up when Wegner put his puzzle together? |  |
| 1. Where are the coal fields that match up located? |  |
| 1. What is a fossil? |  |
| 1. Fossils of what two animals were found widely spread through landmasses? |  |
| 1. Fossil of what plant were found widely spread through landmasses? |  |
| 1. Where were fossils of tropical plants found? Could they grow there now? |  |
| 1. What made scratches in the rocks? Could they exist there now? |  |
| 1. Why was Alfred Wegner’s theory rejected by most scientists of his day? |  |

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| **The Curious Case of Mesosaurus** | Diagram  Description automatically generated |
| 1 | About 265 million years ago, a reptile called Mesosaurus lived in just a few places on Earth. This fairly small, lizardlike reptile measured 71 centimeters from its nose to the tip of its tail—or about two thirds of a meter. Its body was long and flexible, perfect for swimming swiftly through the water. Mesosaurus was a hunter of small fish and other aquatic animals. Its webbed feet and long tail worked like powerful paddles as it chased and captured its food. Like all other reptiles, Mesosaurus breathed air, so it had to return to the surface after hunting underwater. Freshwater ponds and lakes were its habitat. |
| 2 | In the 1800s, scientists began finding fossils of these ancient reptiles, which had long since become extinct. These fossils were found in only two regions, southern Africa and the southern part of South America. The shaded areas on the map show where fossils of Mesosaurus have been discovered. This distribution is a curious one—only two regions far from each other and separated by the Atlantic Ocean. What could explain this distribution? |

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| 1. Describe the kind of environment in which Mesosaurus lived. |  |
| 1. Is it likely that Mesosaurus swam back and forth across the Atlantic Ocean? Explain why or why not. |  |
| 1. What could explain this distribution of Mesosaurus fossils? |  |
| 1. Does the case of the Mesosaurus support Wegener’s theory of continental drift? Explain why or why not. |  |
| 1. Does the case by itself prove the theory? Explain why or why not. |  |
| 1. In your own words, explain the theory of continental drift. Use at least 3 pieces of evidence from the text to support the theory. Use complete sentence. This should be a paragraph. |  |