

Directed Reading

Section: The Changing Continents

1. What is the result of slow movements of tectonic plates?

RESHAPING EARTH'S CRUST

In the space provided, write the letter of the definition that best matches the term or phrase.

- 2. shield a. rocks that have been exposed at Earth's surface
- 3. rifting b. large areas of stable rock older than 540 million years
- 4. cratons c. the process by which a continent breaks apart

5. Describe continental crust.

6. What probably causes continental lithosphere to become thinner and weaken?

7. What happens when the lithosphere weakens?

8. What are two ways by which continents can change?

In the space provided, write the letter of the definition that best matches the term or phrase.

- 9. terrane a. a small volcanic island or underwater mountain
- 10. accretion b. the process by which a terrane becomes part of a continent
- 11. seamount c. a piece of lithosphere that has a unique geologic history
- 12. atoll d. a small coral island

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13. Describe the rocks and fossils of a terrane.

14. What is found at the boundaries of a terrane?

15. Describe the magnetic properties of a terrane.

16. What happens when a tectonic plate carrying a terrane subducts under a plate made of continental crust?

17. What two forms might terranes take when they become part of a continent?

18. Name three kinds of materials that can form terranes.

19. What often happens when large terranes and continents collide?

20. What is an example of a mountain chain that formed when a large terrane and a continent collided?

EFFECTS OF CONTINENTAL CHANGE

21. Name three factors that affect a continent's climate.

22. How have movements of tectonic plates affected modern climates?

23. Most of Earth's continental surfaces were once covered

by _____.

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24. Ice covered most of Earth when all the continents were located near _____.
25. What caused Earth's temperatures to change and its ice sheet to melt?
26. What happens to populations of organisms as continents rift or as mountains form?
27. What is an example of a unique species that evolved on Madagascar?
28. Why did unique species of plants and animals evolve on Madagascar?

THE SUPERCONTINENT CYCLE

29. A picture of continental change throughout time has been constructed by _____.
- a. paleontologists.
 - b. geologists.
 - c. geographers.
 - d. scientists from many fields.
30. Supercontinents are _____.
- a. large landmasses formed in the past from smaller continents.
 - b. the large continents that exist today.
 - c. pieces of large landmasses that broke apart.
 - d. large oceans that covered Earth in the past.
31. According to the theory of the supercontinent cycle, what will probably occur in the future?
- a. No new supercontinents will form.
 - b. Old supercontinents will reappear.
 - c. Continents will stay as they are.
 - d. A new supercontinent will form.
32. Supercontinents form when _____.
- a. rifts form in the lithosphere.
 - b. new convergent boundaries form after continents collide.
 - c. heat builds up in Earth's interior.
 - d. continental lithosphere subducts.

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33. What causes a supercontinent to break apart?
- a. Heat inside Earth causes rifts to form in the supercontinent.
 - b. The convergent boundary between two continents becomes inactive.
 - c. A new convergent boundary forms.
 - d. The supercontinent cycle stops.
34. The supercontinent that formed about 300 million years ago is called _____.
- a. Laurasia.
 - b. Gondwanaland.
 - c. Africa.
 - d. Pangaea.
35. The body of water on the eastern edge of Pangaea was _____.
- a. the Ural Sea.
 - b. the Tethys Sea.
 - c. the Panthalassa Ocean.
 - d. the Russian Sea.
36. Pangaea was surrounded by _____.
- a. mountains.
 - b. seas.
 - c. an ocean.
 - d. other supercontinents.
37. One mountain range that formed when Pangaea was created was _____.
- a. the Rocky Mountains.
 - b. the Alps.
 - c. the Himalayas.
 - d. the Appalachians.
38. How were Laurasia and Gondwanaland created?
- a. Pangaea collided with another supercontinent.
 - b. North America collided with Eurasia.
 - c. Pangaea split from north to south.
 - d. A rift split Pangaea from east to west.
39. The Tethys Sea eventually became _____.
- a. the North Atlantic Ocean.
 - b. Gondwanaland.
 - c. the Mediterranean Sea.
 - d. Laurasia.
40. How were South America and Africa formed?

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- 41.** How was the South Atlantic Ocean formed?

- 42.** How were India, Australia, and Antarctica formed?

- 43.** How were the Himalaya Mountains formed?

- 44.** When did the Himalaya Mountains begin to form?

- 45.** How did the Rocky Mountains, the Andes, and the Alps form?

- 46.** How did tectonic plate motion affect the oceans?

- 47.** What will happen to Africa and the Mediterranean Sea in 150 million years if plate movements continue at current rates?

- 48.** Describe how east Africa will change if plate movements continue at current rates.

- 49.** What will cause the Atlantic Ocean to widen over the next 150 million years?

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- 50.** What will happen to Australia if plate movements continue?

- 51.** What will happen to the region west of the San Andreas Fault in 150 million years?

- 52.** According to scientists' predictions, what will happen to the continents in 250 million years?

