

Chapter 11 Mountain Building

Section 11.3 Mountain Formation

This section explains how mountains are formed at plate boundaries.

Reading Strategy

Outlining As you read, make an outline of the important ideas in this section. Use the green topic headings as the main topics and the blue headings as subtopics. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

I. Mountain Formation

A. Mountain Building at Convergent Boundaries

1. Ocean-Ocean Convergence

2. _____

3. _____

B. Mountain Building at Convergent Boundaries

C. _____

D. _____

1. _____

2. _____

E. _____

1. _____

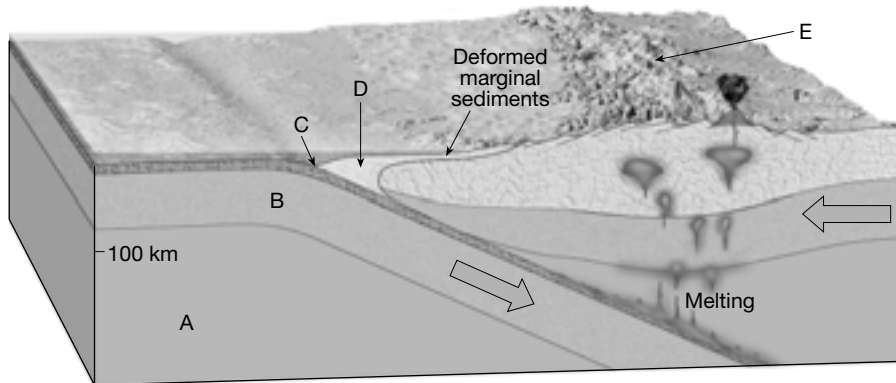
Mountain Building at Convergent Boundaries

1. Is the following sentence true or false? Most mountain building occurs at convergent plate boundaries. _____
2. _____ provide the compressional forces that fold, fault, and metamorphose the thick layers of sediment deposited at the edges of landmasses.
3. Circle the letter of each true statement about ocean-ocean convergence.
 - a. Ocean-ocean convergence occurs when an oceanic plate converges with a continental plate.
 - b. The converging plates can lead to the growth of a volcanic island arc on the ocean floor.
 - c. An example of an island arc formed by ocean-ocean convergence is the Aleutian Islands in Alaska.
 - d. Ocean-ocean convergence mainly produces volcanic mountains.
4. Is the following sentence true or false? The types of mountains formed by ocean-continental convergence are volcanic mountains and folded mountains. _____

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5. The figure illustrates mountain building along an Andean-type subduction zone. Select the appropriate letter in the figure that identifies each of the following features.

- _____ ocean trench
- _____ asthenosphere
- _____ continental volcanic arc
- _____ accretionary wedge
- _____ subducting oceanic lithosphere



6. 🗣️ Is the following sentence true or false? At a convergent boundary between two plates carrying continental crust, a collision between the continental fragments will result in the formation of folded mountains. _____

Mountain Building at Divergent Boundaries

7. 🗣️ _____ mountains are formed along ocean ridges at divergent plate boundaries.

Non-Boundary Mountains

8. Why are some mountains forming at non-plate boundaries?

Continental Accretion

9. When crustal fragments collide with a continental plate, they become stuck to or embedded into the continent in a process called _____.

Principle of Isostasy

10. 🗣️ Is the following sentence true or false? Because of accretion, deformed and thickened crust will undergo regional uplifting both during mountain building and for a long period afterward.

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WordWise

Solve the clues to determine which vocabulary terms from Chapter 11 are hidden in the puzzle. Then find and circle the terms in the puzzle. The terms may occur vertically, horizontally, diagonally, or backwards.

Q A C C R E T I O N D S C A M A
 K L W O A U A V J E T N Q T K H
 D C I Z Y D O W F R N I A R T S
 E V O B I F D O E E Q N F P V G
 N I P L Z M R S N K E H Y E N G
 I C D X B M S I S E N E G O R O
 L R K M A T L Y G X E I T R Z B
 C J T T O C L J N N F H E Z B M
 I P I N O P Q U E C Y Y R X M W
 T O V N P Q U I A R L A R G H X
 N E O M R S W B H F C I A J Z S
 A M P A X M U D S R W D N D L R
 Q Z B S H F C M K P X J E E F K
 H E A J L Q X C G N O L P M F L

Clues

The general term that refers to all changes in the shape or size of a rock body

Force per unit area acting on a solid

The change in shape or volume of a body of rock as a result of stress

Commonly formed by the upfolding, or arching, of rock layers

A trough associated with anticlines

A large, step-like fold in otherwise horizontal sedimentary strata

The collection of processes that produce a mountain belt

Any crustal fragment that has a geologic history distinct from the adjoining accreted crustal blocks

Mountains formed as large blocks of crust are uplifted and tilted along normal faults

The process in which fragments become embedded or stuck to a continental plate

Hidden Words
