



Section 12.2

Features of Plate Tectonics

Study Notes

By the end of section 12.2 you should be able to understand the following:

- Earth is composed of layers, including the lithosphere (surface) and asthenosphere (just below the surface)
- The asthenosphere is partly molten, and allows the tectonic plates of the lithosphere to “float” on the convection currents of hot magma.
- When tectonic plates meet (converge), one plate may slide under the other, or they may crash together and form mountains.
- When tectonic plates move apart (diverge), rifts (on land) and ridges (under the ocean) widen.
- When tectonic plates move past each other at a transform boundary, pressure may build until an earthquake releases the pressure.
- Volcanoes occur at tectonic plate boundaries or over geologic hot spots.

NOTES

Describe the four main layers of Earth.

1.

2.

3.

4.

What is the lithosphere, and how thick is it?

1.

2.

NOTES

What is the asthenosphere, and where is it located?
What do scientists think makes the asthenosphere hot in certain places, creating a "mantle convection" current of molten rock?

- 1.
- 2.
- 3.

What is the name of the two locations (one in the ocean, one on land) where magma rises at spreading centers?

- 1.
- 2.

What is "ridge push"? What are "subduction zones"? Explain the term "slab pull".

- 1.
- 2.
- 3.

What are the three main types of interaction between tectonic plates at plate boundaries? Briefly explain each term.

- 1.
- 2.
- 3.

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NOTES

Describe three qualities of divergent plate boundaries.

1.

2.

3.

Give an example of where scientists have found a ridge, and a rift.

1.

2.

What are the various types of convergent plate boundaries? Briefly describe each type of convergent boundary.

1.

2.

3.

Which type of convergent boundary forms trenches? Which type forms volcanic island arcs? Which type forms great mountain ranges on the continents?

1.

2.

3.

NOTES

What is a transform plate boundary? Describe a transform fault.

1.

2.

Describe why earthquakes occur. Where do most earthquakes in the world occur?

1.

2.

Where can earthquakes occur in BC, and how often do large earthquakes occur here?

1.

2.

What is the difference between the focus and the epicenter of an earthquake?

1.

2.

Based on their depth of origin, what are the three types of earthquakes? Which type can do the most damage to human habitations?

1.

2.

3.

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NOTES

When an earthquake occurs, energy is released from the focus. This energy travels as seismic waves. What information can seismologists learn from these seismic waves?

- 1.
- 2.
- 3.

What are the three types of seismic waves? Briefly describe each type.

- 1.
- 2.
- 3.

What piece of equipment is used to measure earthquakes?

- 1.

What is a seismogram, and what can seismologists learn from it?

- 1.
- 2.
- 3.
- 4.

NOTES

What is the difference between a magnitude 4 earthquake and a magnitude 6 earthquake?

1.

What are the three types of volcanoes caused by tectonic plate movement? Briefly describe each type.

1.

2.

3.

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