

Students will answer all vocabulary, study guide questions and additional study problems as outlined below. *Supplemental and Reading Material provide additional information to help master concepts.*

Essential Standards:	Students Will Be Able To:
2.1.1 Explain how the rock cycle, plate tectonics, volcanoes and earthquakes impact the lithosphere. 2.1.2 Predict the locations of volcanoes, earthquakes and faults based on various maps. 2.1.4 Explain the probability and preparation for geologic hazards in an area based on data.	<ul style="list-style-type: none"> • Identify and explain the various mechanisms responsible for the movement of lithospheric plates. • Explain relationships between types of boundaries and various geologic features. • Describe the release of energy in an earthquake and identify focal point, epicenter and waves produced. • Summarize major geologic events in the history of North Carolina. • Explain precautions that can be taken to reduce impact to the biosphere from geologic hazards.

Vocabulary—Define, know, and be able to apply the following terms:

- | | | |
|--------------------------|---------------------------|-------------------------|
| 1. Lithosphere | 8. Divergent Boundary * | 15. Epicenter * |
| 2. Asthenosphere * | 9. Transform Boundary * | 16. Reverse Fault * |
| 3. Core | 10. Subduction * | 17. Strike Slip Fault * |
| 4. Mantle * | 11. Lithospheric Plates * | 18. Normal Fault * |
| 5. Crust | 12. Seafloor Spreading * | 19. Ring of Fire * |
| 6. Convection Currents * | 13. Paleomagnetism | 20. Lahar Flow |
| 7. Convergent Boundary * | 14. Focus * | |

Academic students complete vocabulary with asterisks *only. Honors students complete all 20 words.

Study Guide—Answer, know, and understand the following concepts:

1. Explain the progression from the Continental Drift Hypothesis to the Theory of Plate Tectonics. Include the differences in the two concepts as well as the evidence for each (some may overlap).
2. Describe the process of **and** evidence for seafloor spreading.
3. Explain how convection currents in the mantle drive plate movement. Include all parts of the mantle convection cells as well as the resulting plate movement from multiple convection cells.
4. Identify the types of plate boundaries (i.e. convergent, divergent, etc.) that can occur between **oceanic & continental plates**. List the specific geological features that occur at each of the different boundaries.
5. Identify the types of plate boundaries (i.e. convergent, divergent, etc.) that can occur between **oceanic & oceanic plates**. List the specific geological features that occur at each of the different boundaries.
6. Identify the types of plate boundaries (i.e. convergent, divergent, etc.) that can occur between **continental & continental plates**. List the specific geological features that occur at each of the different boundaries.
7. Describe the motions of P-waves, S-waves and surface waves in relation to earthquakes.
8. Describe the formation of the Appalachian Mountains. Include a timeline.
9. Describe the three types of volcanos and the major differences between them.
10. Differentiate between magma and lava.
11. Compare and contrast normal, reverse, and transform faults.

Supplemental--Do practice the following activities as you work through the unit:

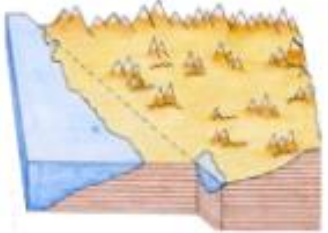
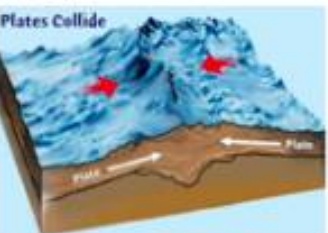
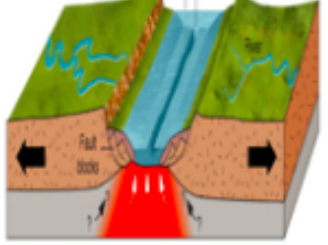
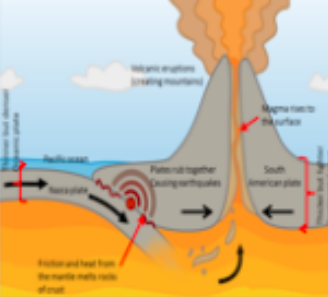
1. Create a chart that illustrates the type of plate boundary, the direction of movement, and expected geologic feature(s).
2. Locate the epicenter of an earthquake using data and maps.
3. Use a plate map to identify locations of current (and possibly future) volcanoes, mountains, and earthquakes.

Unit Reading Material:

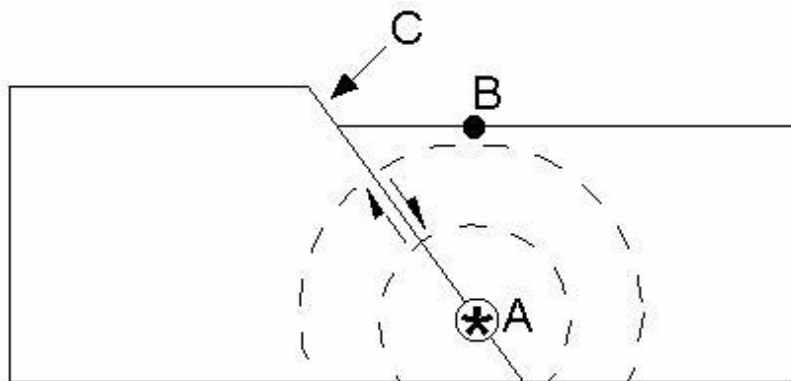
- Textbook: Chapters 3, 8-10
- Digital Textbook: Chapters 4 & 5:20-5:25
- Class Notes
- Handouts

Additional Study Problems:

1. Fill in the chart below:

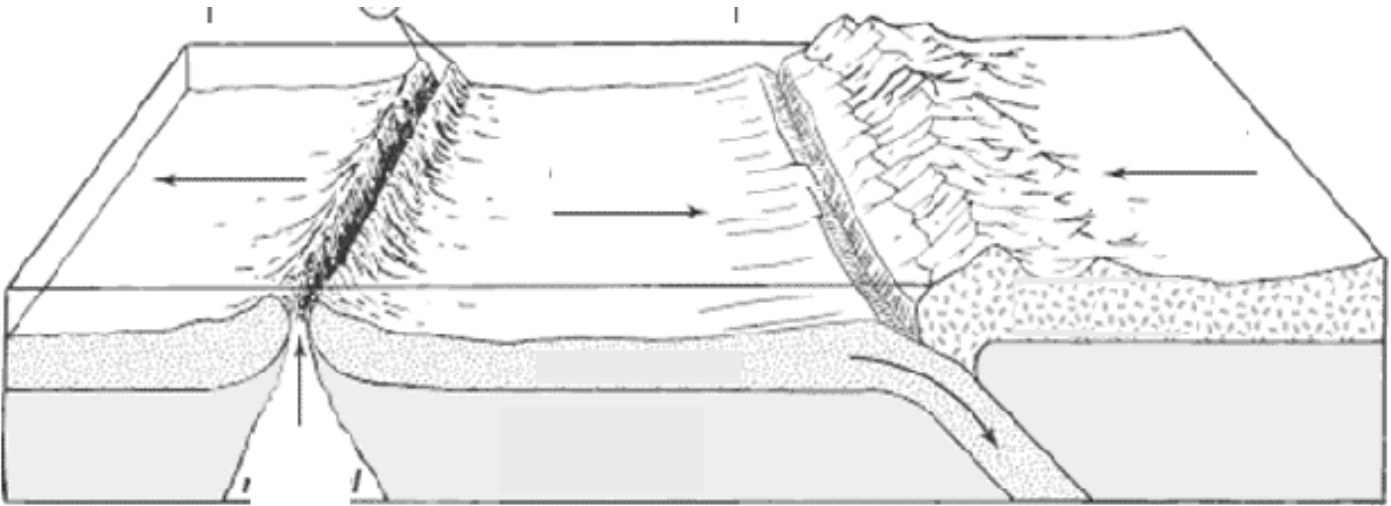
Diagram	Type of Plate Boundary	Plate Movement & Type(s) of Crust	Geological Features	Type of Fault Produced	Type of Hazards
					
					
					
					

2. Identify/label the focus, epicenter, and fault in the image below:



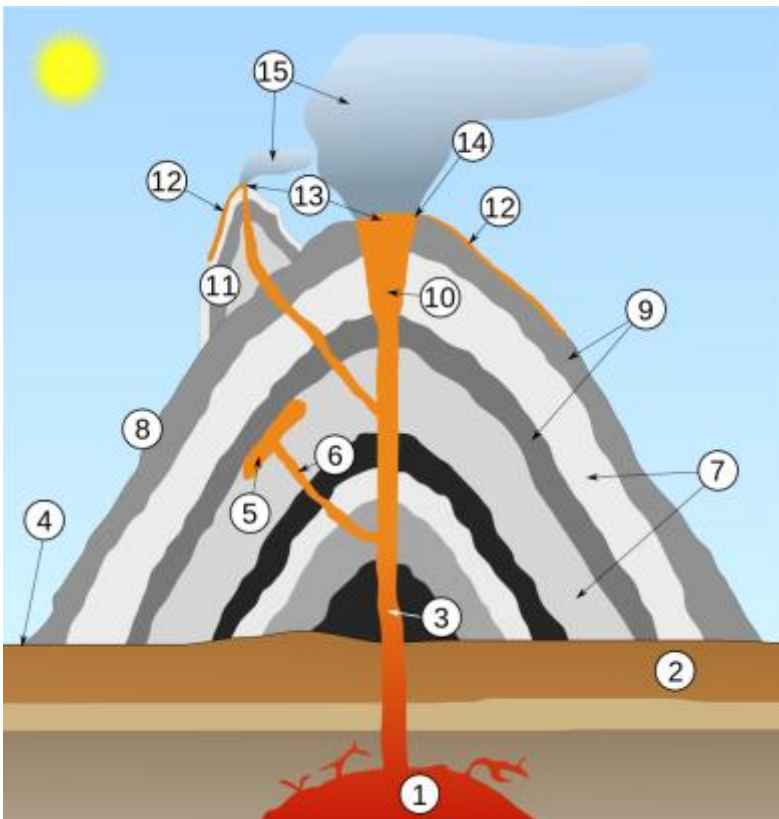
3. Label the following on the diagram below:

Oceanic crust, continental crust, lithosphere, asthenosphere, magma, continental volcano, subduction zone, trench, convergent boundary, divergent boundary, mid-ocean ridge



4. In the image above, draw arrows to explain how the mantle is moving under each of the 3 plates shown.

5. Label each part of the volcano below:



- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.