

Unit 3 Handout N/A

XPT Lessons 1-6 Study Guide

Purpose: To provide you with a framework for reviewing the key concepts and terms from lessons 1-6 of the XPT unit

Instructions: Your quiz is scheduled for **Wednesday, March 9th**. Use this study guide to help you prepare for the quiz. Use this guide to help you identify areas of strength and weakness so you know what to study.

Purpose of this Study Guide

This study guide is designed for you to identify topics you do know well and those you do not. This study guide **is not** the be-all-end-all way to study for your test. Review the information on this guide and see what areas you need to review. Review those areas using the resources listed.

Test Format

The test will be primarily multiple choice and matching. There will be a few short answer questions in which you will have to make a claim and back it up with evidence. For example, if you are shown a diagram plate boundary, you would have to identify it and explain how you know based on information in diagram.

Important concepts

The following are important concepts that we learned during lessons 1-6 of XPT.

Lesson	Concepts
1	<ul style="list-style-type: none"> Some locations on earth are more prone to earthquakes than other locations. Earthquakes occur when energy is released and movement occurs within earth.
2	<ul style="list-style-type: none"> A wave is one or more of a series of movements passing along a point through a substance. Earthquakes release energy that travels in waves. There are many types of waves: body waves that travel perpendicular to the earth's surface and surface waves that travel parallel to the earth's surface. Examples of body waves include P-Waves and S-waves.
3	<ul style="list-style-type: none"> Vibrations from an earthquake can be recorded with a seismograph. This creates the record called the seismogram. The epicenter of an earthquake is the point on the earth's surface directly above the focus, the point of origin, of the earthquake. Different earthquake waves travel at different speeds and therefore arrive at seismograph stations at different times. Scientists can use data from seismograms recorded at several locations to pinpoint the epicenter of an earthquake.
4	<ul style="list-style-type: none"> Major geological events, such as earthquakes, volcanic eruptions, and mountain building, are clustered in particular locations that correspond to plate boundaries,

Lesson	Concepts
5	<ul style="list-style-type: none"> • Patterns of earthquake and their waves provide information about plate boundaries and the interior structure of the earth. • Scientists have divided earth's interior into several layers based on the characteristics of those layers.
6	<ul style="list-style-type: none"> • The (now rejected) theory of continental drift explained how we know the continents used to be together (Pangaea). • The theory of plate tectonics explains why certain geological features exist on our planet and why the plates move. • Plates interact with each other at boundaries. • Landforms (e.g. mid-ocean ridges, volcanoes, mountains, rift valleys, etc.) form as a result of plate movement.

Assigned Readings

The following are the pages of readings that were either assigned to you as homework, read together as a class, or used as reference in class. These are available in the online textbook and in Schoology.

Reading Title	Pages
What is an Earthquake?	p. 5
Earthquake Waves and the Transfer of Energy	p. 18
The Alaska Earthquake of 1964	p. 34
Finding the Epicenter: The Tortoise and the Hare	pp. 38-39
Magnitude and Intensity	pp. 56-59
The Earth's Interior	pp. 70-71
Using Waves to Explore the Earth's Interior	pp. 72-73
Earth's Moving Plates: A Look Back	pp. 86-89

Important Vocabulary

Lesson 1: Earthquake, fault, seismologist

Lesson 2: Wave, body wave, surface wave, P-wave, S-wave

Lesson 3: Seismometer, seismograph, seismogram, lag time (S-P interval), amplitude, epicenter, focus, aftershock

Lesson 4: Magnitude, intensity, amplitude, Richter Scale, Mercalli Scale,

Lesson 5: Inner core, outer core, mantle, crust, asthenosphere, lithosphere, continental crust, oceanic crust

Lesson 6: Boundaries (convergent, divergent, transform), plates, Continental Drift Theory, Trenches, mid-ocean ridges, linear seas

Self-Check

Go through the following questions. If you can answer “yes” to the question, mark it off and move on to the next question. If you answer “no” to a question, review the topic by referencing the XPT handouts and readings indicated. You do not need to answer these questions; use them simply to find out what you know and what you do not know.

Do I know...	Helpful Resources
What an earthquake is?	Reading p. 5
Where earthquakes are most likely to happen?	Reading p. 5, Handouts 2 & 9
Who studies earthquakes?	Reading p. 5
What a wave is?	Handout 4
The types of waves generated by an earthquake?	Reading pp. 17-18, Handout 4
The difference between a body wave and a surface wave?	Reading 17, Handout 4
The difference between a P-wave and an S-wave?	Reading 17-18, Handouts 4, 5, & 6.
The difference between a seismograph and a seismogram?	Reading 34
How to calculate lag time (S-P interval)?	Handout 9 (do the activity online)
How to use a time-distance graph?	Handout 9
The difference between magnitude and intensity?	Reading pp. 56-59
The different layers of earth and their characteristics?	Handouts 12-13, Reading pp. 70-71, your earth's interior model.
How we know what is inside earth?	Handouts 12-13, Reading pp. 72-73
The basics of continental drift theory?	H14, (See also readings pp. 86-89)
The different types of plate boundaries and how to identify them?	H17 (Reading pp. 84-85)
Which plate boundaries are constructive and destructive?	H17 (Reading pp. 84-85)
What happens at plate boundaries?	H17(Reading pp. 84-85)

Also, review your reflections! They cover much of the key information from the lessons.