

Unit 2
Handout _____*Lessons 1-3 Study Guide*

Purpose: To provide you with a framework for reviewing the key concepts and terms from lessons 1-3 of the XPT unit

Instructions: Your quiz is scheduled for **Friday, February 14th**. 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.

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: 5, 17-18, 19-23, 27, 34, 38-39, 56-59.

Important concepts

The following are important concepts that we learned during lessons 1-3 of XPT.

- **L1:** Some locations on earth are more prone to earthquakes than other locations.
- **L1:** Earthquakes cause constructive and destructive changes to the earth and its inhabitants.
- **L1:** Earthquakes can be monitored, measured, and maybe someday predicted with technology.
- **L1:** Earthquakes occur when energy is released and movement happens along great cracks in the earth's crust.
- **L2:** A wave is one or more of a series of movements passing along a surface or through a substance.
- **L2:** A wave originates at one point and travels outward in all directions.
- **L2:** Earthquakes release energy that travels in waves.
- **L2:** There are many types of waves: body waves travel perpendicular to the earth's surface and surface waves travel parallel to the earth's surface. Two types of body waves are P-waves and S-waves.
- **L2:** Earthquake-resistant structures help reduce the risk associated with earthquakes. The ability of building an earthquake depends on many variables related to foundation and design.
- **L3:** Vibrations from an earthquake can be recorded with a seismograph which records the vibrations on a seismogram.
- **L3:** The epicenter of an earthquake is the point on the earth's surface directly above the focus, the point of origin, of the earthquake.
- **L3:** Different earthquake waves travel at different speeds and therefore arrive at seismograph stations at different times.
- **L3:** Scientists can use data from seismograms recorded at several locations to pinpoint the epicenter of an earthquake.

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

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 handouts and readings indicated.

Do I know...	Helpful Resources
What an earthquake is?	Reading p. 5
Where earthquakes are most likely to happen?	Reading p. 5, H84
Who studies earthquakes?	Reading p. 5
What constructive and destructive effects an earthquake has?	H85
What a wave is?	H87
The properties of waves?	H87
The types of waves generated by an earthquake?	Reading pp. 17-18, H87
The difference between a body wave and a surface wave?	Reading 17, H87
The difference between a P-wave and an S-wave?	Reading 17-18, H87, H88, H89
Why certain buildings are more likely to be damaged in an earthquake?	Reading 19-23
What can be done to make a building more earthquake resistant?	Reading 19-23
The difference between a seismograph and a seismogram?	Reading 34
How to calculate lag time (S-P interval)?	H91 (do the activity online), H94
How to interpret basic information from a seismogram? (Ex: which wave is “stronger”)	H92, Reading pp. 35-37
How to use a time-distance graph?	H94

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