

ES104 Lab Quiz 1 Study Guide

Fall 2022

1. Review answer keys for Week 2 (Lab 1 Solar System), Week 3 (Lab 2 Plate Tectonics), Week 4 (Lab 3 Earthquakes), Week 5 (Lab 4 Minerals)
2. Make sure you know how to do unit conversions and work algebraic problems
3. Go to the online rock and mineral study guides, view and know your rocks and minerals
4. Study the terms and concepts listed below, both from your lab exercise and learning resources.
5. Review and memorize your pre-lab questions and Canvas practice quiz questions.

Key Terms and Concepts:

Solar System Lab

Which planet is closest to the sun?

list the planets in order of increasing distance from the sun.

Which planet is farthest from the sun?

Which planet is the largest in the solar system?

Which planet is covered in water?

Which planet is the hottest planet?

How far is the sun from the earth in miles? How about kilometers?

If you were traveling at the speed of light, how long would it take you to get from the sun to the earth?

What is the difference between an astronomical unit and a light year?

What is Density, what is the formula, can you calculate the density of an object?

Can you classify the planets according to their physical properties?

Do you know the basic physical characteristics of each of the planets? Can you match them to the planet?

Plate Tectonics Lab

Plate boundaries

Lithosphere

Ashtenosphere

Divergent

Convergent

Transform Fault

Subduction zone

Trench

Volcanic arc

Hot spot

Volcano

Earthquake

Ring of Fire

Emperor-Hawaiian Hot Spot

Track

Juan de Fuca Plate

Pacific Plate

Fault offset

Fault displacement

San Andreas Fault Zone

Cascade Mountains

Cascade Volcanic Arc

Earthquakes Lab

p-wave

s-wave

L-waves

surface wave

seismogram

seismograph

travel-time curves

focus

epicenter

body waves

surface waves

distance to epicenter

seismic station

triangulation

longitude (east-west)

latitude (north-south)

Minerals Lab

Element- Mineral-Rock

Atom

Hardness

Cleavage

Luster

Color

Streak

Heft-Density

Hardness

Fracture

Crystal form

Magnetism

Effervescence

Metallic

Non-metallic

Glassy

Conchoidal fracture

1-direction cleavage (sheets)

2-direction cleavage (square)

3-direction cleavage (cubes)

density = mass/volume

high density sinks

low density floats

hardness fingernail = 2.5

hardness penny = 3.5

hardness nail = 6

hardness glass = 5.5

important minerals:

quartz

feldspar

mica

amphibole

galena

pyrite

Key Lab Concepts / Skills

Can you graph basic planetary data on an X-Y scatter plot diagram?

Can you calculate the rate of plate motion from a hot spot track?

Can you calculate the rate of offset along a fault given a map, map scale, and ages of rocks?

Can you sketch the three types of plate boundaries?

Can you locate the epicenter of an earthquake using the travel time curves?

Can you identify the arrival time of P waves and S waves on a seismogram?

What is the difference between a silicate and non-silicate mineral? Include some answers.

What is density and how is it calculated?

Can you make mineral observations and use the mineral identification keys?