

Side 1

Rock Cycle

Create a diagram that shows the three types of rocks, how rocks are formed and how one rock can change into another.

Key words: *Cementation, Erosion, Lava, Heat and Pressure, Sediments*

Relative Age and Law of Superposition

State the law and draw a picture to represent the law. What type of rock does this apply to? Identify the oldest and youngest rocks in the sequence.

Sometimes rocks are eroded over the course of time, what is this called?

Draw a picture to represent this occurrence compared to the previous picture (rocks without erosion).

Theories of the Changing Earth

Define and create a visual for each theory below:

1. **Continental Drift**
2. **Plate Tectonics**

Absolute Age

Define absolute age and compare it to relative age (give examples).

Methods: describe how each method is used to determine the absolute age of a rock

- **Radioactive decay (Carbon-14)**
- **Index Fossils**

Complete the chart below on how to calculate radioactive dating:

Percentage of Radioactive Material in Rock	Number of Half Lives
100% - 50%	
50% - 25%	
	3
12.5% - 6.25%	
	5

Solve the following index fossil problem:

A trilobite is found in the second layer of sedimentary rock (trilobite = 200 mya), therefore how old is this rock layer? How old is the rock layer above it? Below it?

Pangaea and Evidences of Change in Earth's Rocks

Explain how the evidences of Pangaea are used to determine the age of the Earth and the idea that Earth has changed over time and show evidence of climate change.

Landforms (fit of continents and mountain chains)

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Fossil Evidence

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Climate Change (ice cores and tree rings)

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Earth's Age

What is the approximate age of the Earth? How do we know this?

Water on Earth

Water Distribution

Water Source on Earth	Percentage
Salt	
Fresh	
<u>Fresh Water Distribution</u>	
Water Vapor	
Lakes and Rivers	
Total Ground	
Ice	

River Basins

List the name of our local river basin here in Charlotte, NC.

Define and explain the location of each of the following parts of a river basin:

- Headwaters - watershed/river basin
- divide - tributary
- estuary - mouth
- main river

*see diagram in notebook for a visual representation of these words

Aquifers

Sketch the location of an aquifer.

Why is water in an aquifer usually cleaner than water on the surface of Earth?

Water on Earth

Water Quality and Ecosystems

Create a cause and effect relationship between the **water quality indicators** listing how that indicator affects **ecosystems**.

Indicator	Ecosystem

Which agency is responsible for regulating and setting standards for safe drinking water in the US?

Nutrients in Water

Explain the correlation between nutrients and the vocabulary word listed below.

Describe where this action or location might occur and why it's high or low in nutrient levels.

Upwelling

Downwelling

Estuaries

Floodplains

Eutrophication

Title Page

Earth Science Study Guide

Structure, Processes
and Evolutionary
Theories

(Use notebook pages 5 - 42)

Name and Date