

Science Packet: Earth Systems



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Name _____

Team _____

Science Video Assignment: "A Closer Look at Space: Earth"

Name _____ Date _____

Directions Please fill in the blanks based on the information provided in the video.

The video is called "A Closer Look at Space: Earth" and it can be accessed on discoveryeducation.com. The login and password are both **northstarstudents**

1. The Earth moves in two ways. It _____ on its axis and it _____ around the sun.
2. The atmosphere contains layers of _____. Most of Earth's atmosphere contains _____ and _____.
3. The _____ layer of the atmosphere keeps us from being hurt by the strong rays of our sun.
4. The atmosphere protects the Earth from getting too _____ or cold and protects the Earth from getting hit by objects from _____.
5. Rocks are made up of smaller pieces called _____.
6. What are the three types of rocks?
 - a. _____ They were once melted, cooled, and hardened
 - b. _____ They formed from layers of minerals pressed together
 - c. _____ They are when igneous or sedimentary rocks are changed from heat or pressure.
7. What are the three layers of Earth?
 - a. _____ Earth's newest and outside layer
 - b. _____ Earth's thickest layer. It is really hot.
 - c. _____ Earth's hottest layer. It contains liquid rock called magma.

8. What are some examples of different types of landforms?

9. Earth's crust is divided into twelve _____.

10. Movement in the plates can cause changes in landforms and cause earthquakes, mountains, and _____.

11. _____ is always changing the surface of the Earth.

12. Wind and _____ cause weathering and water and _____ can break apart rocks.

13. Erosion is caused by water, _____, other rocks, and _____.

14. Glaciers are large sheets of ice that slowly move across _____.

15. Volcanoes can erupt lava, _____, rock, and gasses.

16. The Earth can also change quickly from earthquakes and storms which can cause _____.

17. Give one example of weathering that you have seen in person or on the news.
You may draw a simple picture to complement your description.

Science: Changes Over Time Chapter 5, Lessons 1-2

Name _____ Date _____

1. Earth's water exists in two basic forms: _____ water and fresh water.

More than _____ percent of the water on Earth is salt water. Most of Earth's fresh water exists as _____. page 245

2. What is the definition of a relief map? page 247

3. A topographic map shows _____, the height above or below sea level. You can find elevation by using _____ lines. Contour lines connect places on a map that have the same _____. page 249

4. The _____ and rigid part of the _____ make up what is called the _____. page 250

5. The core is made up of two parts. The _____ core is the molten, or fluid, part of the core. The _____ core is _____.

6. In your words, please explain what is continental drift. page 256

7. Locations where plates move apart are called _____ boundaries.

Locations where plates collide are _____ boundaries. page 260

Sometimes one colliding plate carries part of an ocean floor, and the other carries part of a continent. Then the oceanic plate slides under the continental plate in a process called _____. Some plates simply slide past each other.

The boundary between these plates is a _____ boundary. page 261

Science: Soil Cycle

Chapter 5, Lesson 4 and Soil Presentation

Name _____ Date _____

Page 284

1. _____ is the breaking down of rock into smaller pieces by natural process.
2. _____ weathering (also called _____ weathering) is the breaking down of rock by physical changes. It can be caused by freezing water, moving water, plants, or animals.

Page 285

3. _____ is the breaking down of rock by changes in its chemical composition. _____ and acids are powerful agents of chemical weathering.

Pages 286-287

4. _____ is the picking up and removing of rock pieces and other particles. Particles moved by erosion usually end up in a different place.
5. _____ is the dropping off of particles in another location.
6. What are a few causes of erosion?

Page 290

7. _____ is a mixture of weathered rock, air, water, and _____. Humus is a material made of decayed plant and animal remains.
8. What four things contribute to the formation of humus?
9. Soil begins as _____. The rock, which is the parent material, is _____. Over time, the rock breaks into smaller pieces, forming a thin layer of soil. Plants and animal grow in and on the soil. When they _____, their remains _____ the soil.

10. All soils have spaces called _____ between the rock fragments. If the pores in the soil are connected, _____ can pass through the soil easily. This soil is said to be _____. If the pores are not connected, or if they are few or no pores, water cannot pass through easily. This kind of soil is _____.
11. Most living things depend either directly or indirectly on soil. Soil is the material that most plants need in order to _____.
12. _____, a vital part of the food web, takes place primarily in the soil and _____ it. People can then grow crops in this enriched soil and continue the cycle.
13. Different _____ need different types of soil as well as different _____ in order to grow well.

14. Soil contains _____ that organisms need to survive. Growing plants use up the minerals from the soil. These minerals are _____ naturally by rain and _____. Decaying plants and _____ also resupply some minerals.

Soil Cycle Presentation: https://prezi.com/e_sbaze03a4r/soil-and-its-formation-cycle/

15. Climate affects the _____ and rate of weathering that will occur.
16. In cooler regions, physical disintegration is more prominent and there is a _____ rate of decay. As a result, colder area often have more _____, less developed soil.
17. Freezing and _____ of water widens _____ and cavities in rock.
18. List three ways people have impacted Earth's soil.

Science: Minerals and Rocks

Chapter 6, Lesson 1

Name _____ Date _____

Page 314

1. _____ are the naturally occurring solid materials of Earth's crust. They are made up of elements. An element is a substance that cannot be _____ into a simpler substance. Rocks usually contain a mixture of _____.
2. Minerals have varying degrees of _____ and they _____ apart in different ways. No two minerals are identical.
3. _____ is the most obvious physical property of a mineral. Color is useful in identification. However, some minerals can be different colors, and different minerals can share the same color.

Page 315

4. The _____ of a mineral is another property that provides a clue to identification... The feel of a mineral depends on the sizes and shapes of the _____ in it.
5. A _____ is a solid that has a structure arranged in orderly, fixed patterns. A crystal's _____ depends on the way its structure is arranged.
6. The way a mineral _____ is another important property. Some minerals tend to break along flat surfaces. This property is called _____.
Cleavage is described by the number of _____, or directions, along which the mineral breaks.

Page 316

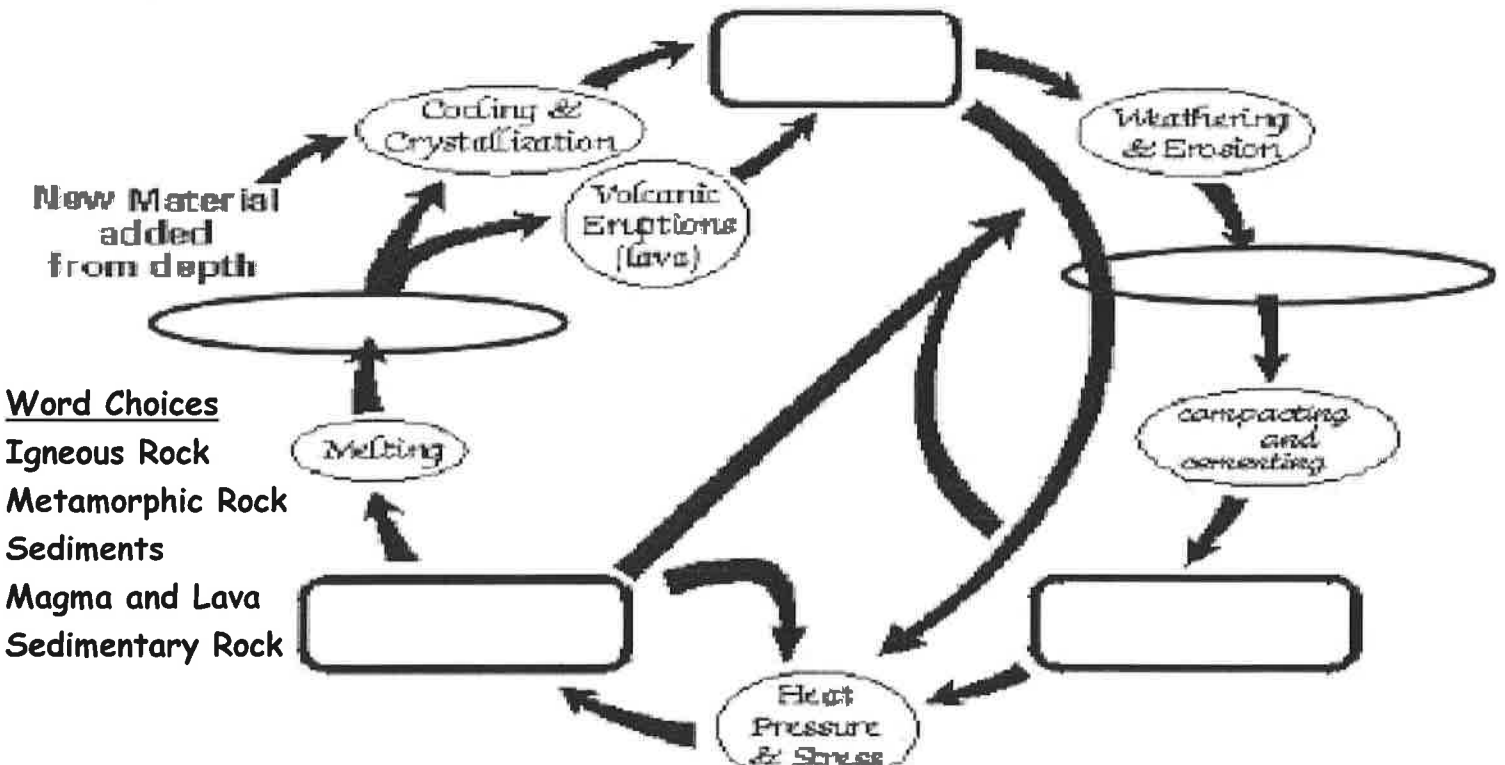
7. _____ is a measure of how well a mineral resists scratching.
8. Friedrich Mohs, a German scientist, devised a scale of _____ to compare minerals to one another. This has come to be known as _____ scale.
9. What are the softest and hardest minerals?

10. _____ is the color of the mark left when a mineral is _____ against a hard, rough surface. The streak is always the same for a particular _____, even when the mineral's surface varies in _____.
11. _____ refers to the way that minerals reflect _____. Minerals with a _____ luster appear shiny, like metal. Minerals with a _____ luster can be described as glassy, pearly, oily, earthy, waxy or silky.
12. Some minerals have other special _____ that can be used to identify them. For example, _____ gives off a garlicky odor when it is heated. Copper is a very good _____ of electricity. _____ attracts elements such as iron, nickel, and cobalt and is a naturally formed _____.

13. In a process known as the _____ cycle, rock can continually _____ from one kind of rock into another over long periods of time.

The Rock Cycle

Complete the chart



Word Choices

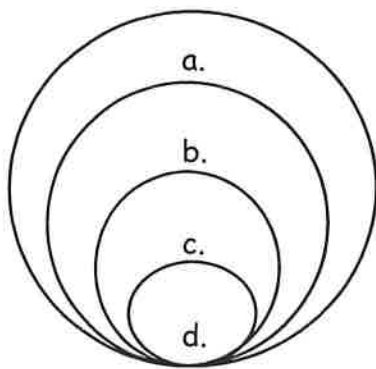
- Igneous Rock
- Metamorphic Rock
- Sediments
- Magma and Lava
- Sedimentary Rock

Science: Weather and Climate
Chapter 7, Lesson 1: The Atmosphere and Weather

Name _____ Date _____

1. What is the definition of atmosphere? page 370

2. Label the four layers of the atmosphere page 371



- a. _____ above 80 km (50 miles)
- b. _____ 40-80 km (25-50 miles)
- c. _____ 11-40 km (7-25 miles)
- d. _____ 0-11 km (0-7 miles)

3. What two elements make up 99% of Earth's atmosphere? page 371

_____ and _____

4. At what temperature does water freeze and boil in Fahrenheit, Celsius, and Kelvin?

page 373

Freeze

Boil

_____ Fahrenheit

_____ Celsius

_____ Kelvin

5. What instrument is used to measure wind speed? page 375

Extra Credit

Complete the Inquiry Activity: How can you observe air pressure? page 369

Please complete the activity at home with your parent/guardian's supervision.

Write down the answers to the questions on the back of this page.

Science: Weather and Climate

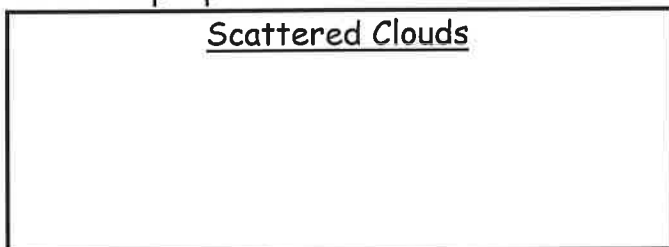
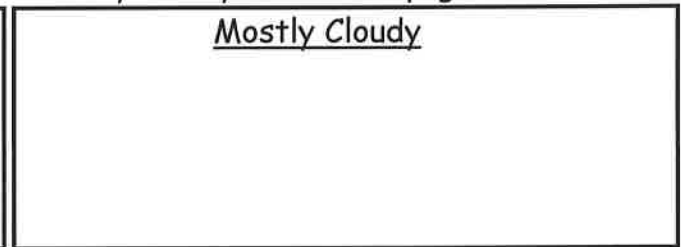
Chapter 7, Lesson 2: Precipitation and Clouds

Name _____ Date _____

1. What is the difference between evaporation and condensation? page 382

2. Clouds are described as _____, middle or _____, clouds, depending on the _____ at which they form page 384

3. Draw simple pictures of scattered clouds and mostly cloudy. page 384

<u>Scattered Clouds</u>	<u>Mostly Cloudy</u>
	

4. As _____ falls, it passes through the lower _____, where the _____ determines which form the precipitation will take as it nears the ground. page 386

5. What is the definition of sleet? page 387

6. Thunderstorms begin when intense _____ causes air to rise quickly. This heated air, or _____, cools and forms _____. page 388

7. Where should you take shelter if you hear a tornado warning? page 389

Home _____

Outdoors _____

Extra Credit

Complete the Inquiry Activity: How can you make a model of fog? page 381

Write down the answers to the questions on the back of this page.

Science: Weather and Climate

Chapter 7, Lessons 3-4: Predicting Weather & Climate

Name _____ Date _____

1. What do scientists study to predict weather? page 398

2. Describe how the properties of an air mass depend on the region in which it forms. page 400

3. Explain the steps you should follow to interpret a weather map. page 401
 - a. First look at the _____ and _____.
 - b. Recognize that _____ usually means _____ weather.
 - c. Then look at _____, which always come out of _____.

4. Climate is the _____ weather _____ of a _____ page 408

5. The two main factors that determine climate are _____ and _____ page 410

6. List the main factors that affect climate. pages 410-411

7. _____ changed the location of areas over a long period of time. page 412

Extra Credit

Complete the Inquiry Activity: How can you make a model of fog? page 397 or 407
Write down the answers to the questions on the back of this page.

Writing Activity

Name _____

Words

cloud

precipitation

evaporation

air

water cycle

condenses

snow

ocean

water vapor

Use the correct word from above to complete the sentences in the following paragraph.

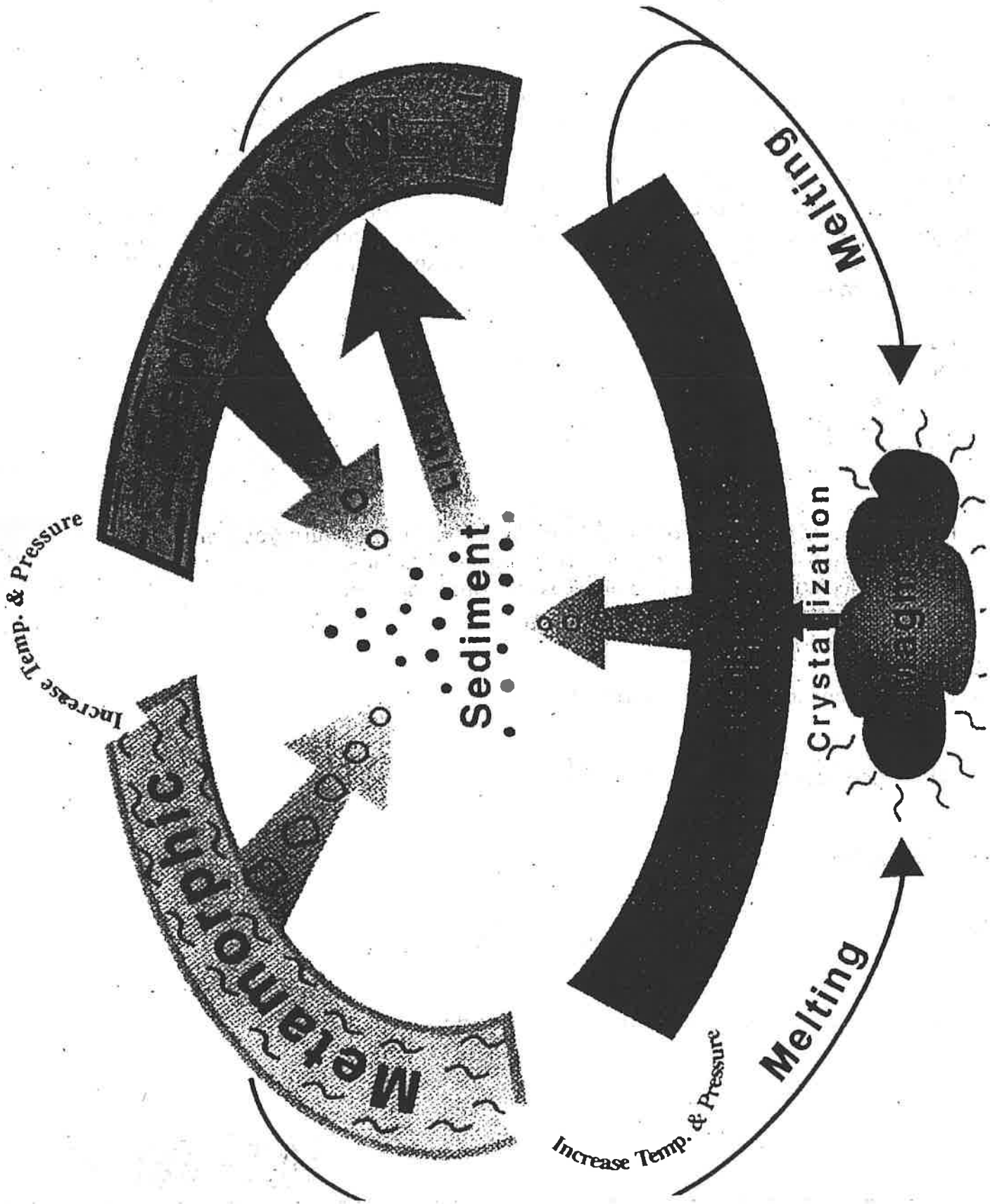
The _____ is the continual movement of water between earth and the _____. On a lake surrounded by trees, lake water turns into water vapor through the process of _____. The plants and animals that live around the lake also give off _____. As the water vapor rises, it cools and _____ into tiny drops of liquid water or ice crystals. When enough of these gather, a _____ forms. When the water droplets and/or ice crystals become too heavy, they fall to the earth via the process of _____. Precipitation may fall in the form of rain, sleet, _____, or hail. Some precipitation falls directly into the lake or other bodies of water, while other precipitation falls onto the land. Rain can be absorbed by the soil or run over the earth as surface runoff. Water runoff flows into lakes, streams, and rivers, and eventually to the _____.

In Your Own Words

1. What causes precipitation?

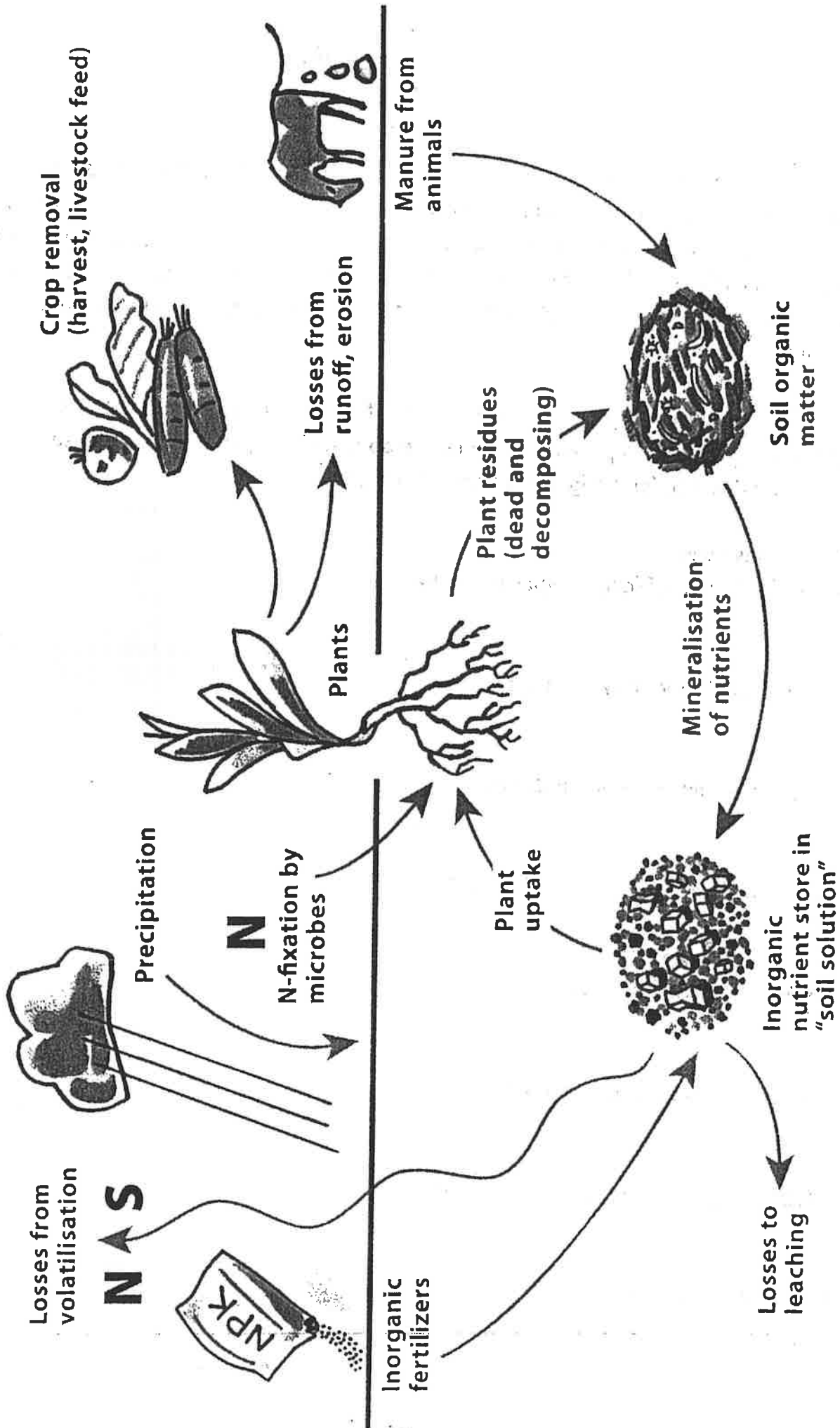
2. List and define the three main processes in the water cycle.

3. Define a phase change and list the three phases in which water exists.



ROCK CYCLE

SOIL NUTRIENT CYCLE



Science Test Study Guide

Water, Rock, and Soil Cycles and Weather and Climate

Synopsis

Posted below are the topics for the entire test. To be successful on the test you must bring all of your **previous homework assignments**, the Water, Rock, and Soil Cycle **quiz**, handouts, and your Science **notebook**. The test has 20 multiple choice questions and 10 matching questions. There will be an extra credit short answer question.

In addition, all students may submit any **missing assignments for full credit until Friday, October 7th**. The class website contains copies of every assignment: **wolfpups.org**

The current homework assignments include **extra credit opportunities**.

In sum, every student can earn an excellent score on the test if he or she is prepared with his or her assignments. What grade will you earn on the test?

Multiple Choice

1. What are the three different types of rock?
2. How can geologists identify minerals?
3. What are the steps in the Rock Cycle?
4. What are the three main layers of Earth?
5. What is Moh's Hardness Scale?
6. How have people impacted Earth's soil?
7. What four things contribute to the formation of humus?
8. What is the Soil Cycle?

9. What are the steps in the Water Cycle?
10. What is a water phase change?
11. What is condensation?
12. What are the different types of precipitation?
13. Which layer of the atmosphere contains 99% of all water vapor?
14. What is not a weather variable?
15. At what temperature does water freeze and boil in Celsius?
16. What instrument is used to measure wind speed?
17. What factors impact how clouds form?
18. What causes thunderstorms to form?
19. What is the wind speed of a tornado?
20. What two factors have the greatest impact on climate?

Matching

21. What are minerals?

22. What is plate tectonics?

23. What is decomposition?

24. What is erosion?

25. What is deposition?

26. What is weathering?

27. What is weather?

28. What is a hurricane?

29. What is an air mass?

30. What is climate?

Extra Credit Short Answer Questions

31. Describe how global warming is impacting Alaska. Give specific examples that you've seen or heard about.