

**S6E6: Obtain, evaluate and communicate information about the uses and conservation of various natural resources and how they impact the Earth.**

Define:

1. resource:

2. renewable resource:

3. nonrenewable resource:

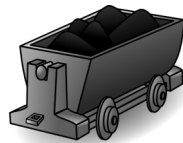
Label each picture as R (renewable) or NR (nonrenewable):



\_\_\_\_\_



\_\_\_\_\_



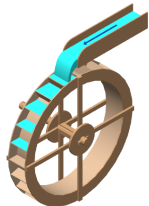
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# Sixth Grade

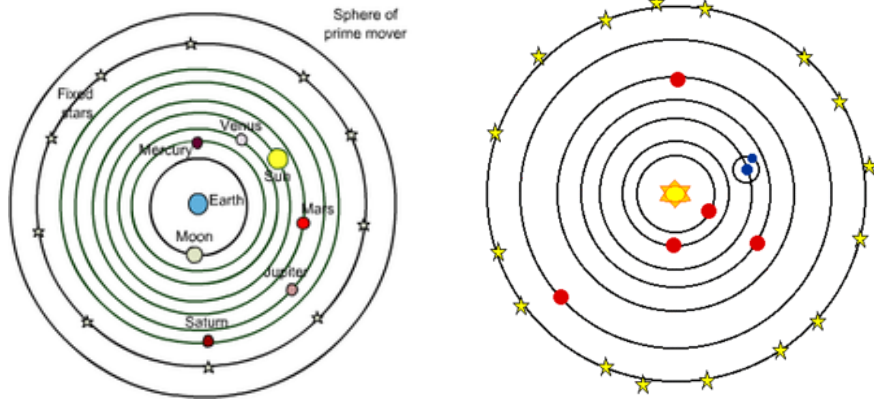
# Earth Science



## Milestone Review Booklet

**S6E1. Obtain, Evaluate, and Communicate information about current scientific views and how those views evolved.**

Ask questions to determine changes in models of Earth's position in the solar system, and origins of the universe as evidence that scientific theories change with the addition of new information.



1. Explain what is going on in the two solar system models above:

2. What is the Big Bang Theory?

3. What evidence do scientists use to support the Big Bang Theory?

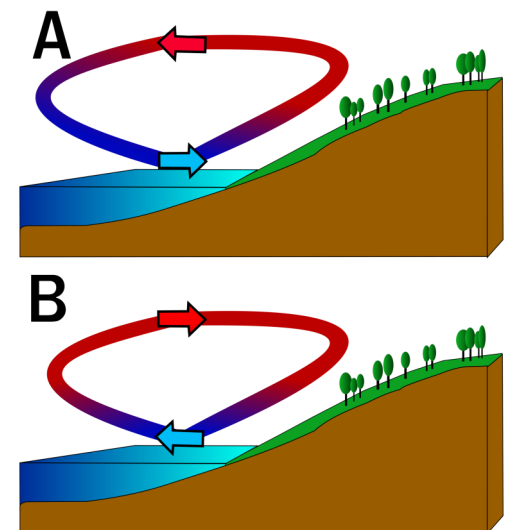
**S6E6: Obtain, evaluate and communicate information about how the sun, land, and water affect climate and weather.**

**Directions: Use the terms in the word bank to fill in the sentences and make them true.**

**Word Bank:** faster, slower, air, sun, windmill/wind turbine, low, high, faster, slower, energy, currents

1. The \_\_\_\_\_ is the primary (main) source of energy for Earth and everything on Earth.
2. Land heats up \_\_\_\_\_ than water, and it also cools down \_\_\_\_\_.
3. Oceans and bodies of water heat up \_\_\_\_\_ than land and hold their heat \_\_\_\_\_.
3. Wind is the movement of \_\_\_\_\_.
4. Wind power can be harnessed using a \_\_\_\_\_.
5. Wind causes \_\_\_\_\_ in the oceans.
6. The flow of water can also be used to generate \_\_\_\_\_.
7. Wind blows from areas of \_\_\_\_\_ pressure to areas of \_\_\_\_\_ pressure.

Label the Land Breeze and Sea Breeze, also label which area is warmer and which is cooler in each picture.



S6E1 c. Analyze and interpret data to compare/contrast the planets in terms of size, surface and atmospheric features, relative distance from sun, ability to support life.

S6E6a. Ask questions to identify types of weathering, agents of erosion, and transportation, and environments of deposition.

Draw a picture/diagram OR describe each method of soil conservation:

List the planets in order from smallest to largest:

List the planets in order from hottest to coldest:

List the planets in order from the Sun to Pluto:

Which planet(s) currently support life?  
  
Which planet(s) do scientists think may some day be able to support life?

Human Activity	How does it cause erosion?	How can we make changes and prevent erosion?
Farming		
Construction		
Mining		

Terracing:	No-till farming:
Cover Crop:	Wind Break:
Contour Plowing:	Crop Rotation:

Planet	Atmosphere	Planet	Atmosphere
Earth		Venus	
Mars		Mercury	
Jupiter		Uranus	
Neptune		Saturn	

S6E6b: Design and evaluate solutions for sustaining the quality and supply of natural resources such as air, water, and soil.

**A local company has moved into your town and is wasting all of the natural resources! Write a letter to the C.E.O. of the company explaining how he/she can help to conserve water, soil and air.**

Dear \_\_\_\_\_,

Sincerely,

\_\_\_\_\_

S6E1 b. Develop a model to represent the position of the solar system in the Milky Way and in the known universe.

Draw a picture of the Milky Way Galaxy and indicate the position of our solar system below:

What is a galaxy? Draw some different shapes of galaxies found in our universe:

S6E1f: Ask questions to compare and contrast the characteristics, composition and location of comets, asteroids, and meteoroids.

Fill in the mystery circle maps with the item they describe.

Commonly called a "shooting star," but it is not a star at all

Forms craters when it hits the moon or Mercury

If found in space, add the suffix "-oid"

If it hits the ground on Earth, add the suffix "-ite"

From the Oort Cloud or Kuiper

Dirty snowball

Vaporizes near the sun and forms a visible tail

Made of gases, ice and dust

Hale-Bopp and Halley's are two famous members of this group

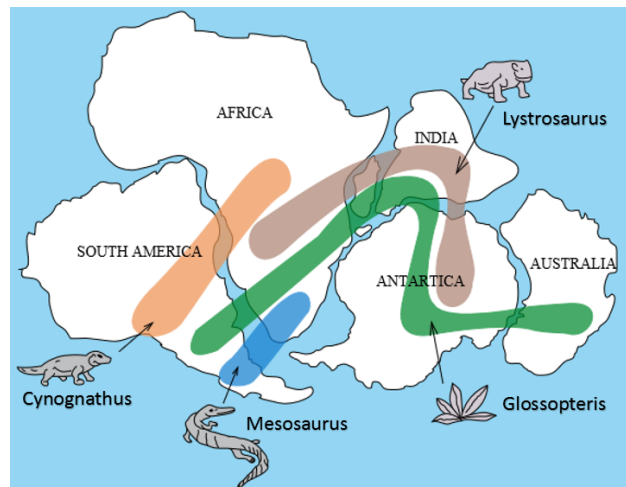
Large chunks of irregular rock

Many are found in a belt between Mars and Jupiter

Leftover from the formation of the solar system.

Not quite large enough or spherical enough to be a dwarf planet

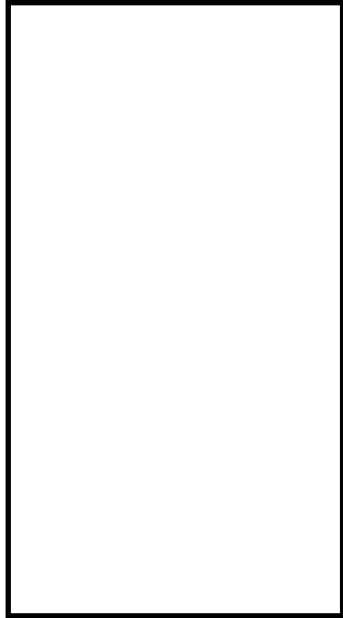
S6E5g. Construct an argument using maps and data collected to support a claim of how fossils show the changing climate of the Earth.



1. What is the landmass in the picture above called?
2. How does the climate of Antarctica today differ from the climate of the Antarctica pictured above?
3. How does the fossil evidence help support Continental Drift Theory?
4. How do continents move, and how much do they move each year?

S6E5h: Plan and carry out an investigation to provide evidence that soil is composed of layers of weathered rock and decomposed organic material.

1. Draw and label a soil horizon diagram in the rectangle below; write a brief description of what the layer is made of:

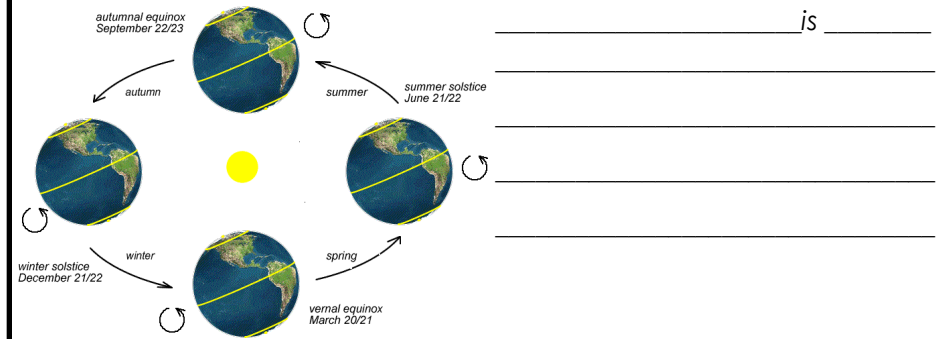


2. How does soil form?

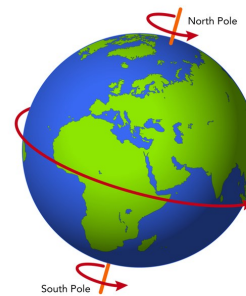
3. How does topsoil differ from bedrock?

S6E1d. Develop and use a model to explain the interaction of gravity and inertia that governs the motion of the objects in the solar system.

Label each picture as rotation or revolution, and define each term.



\_\_\_\_\_ is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

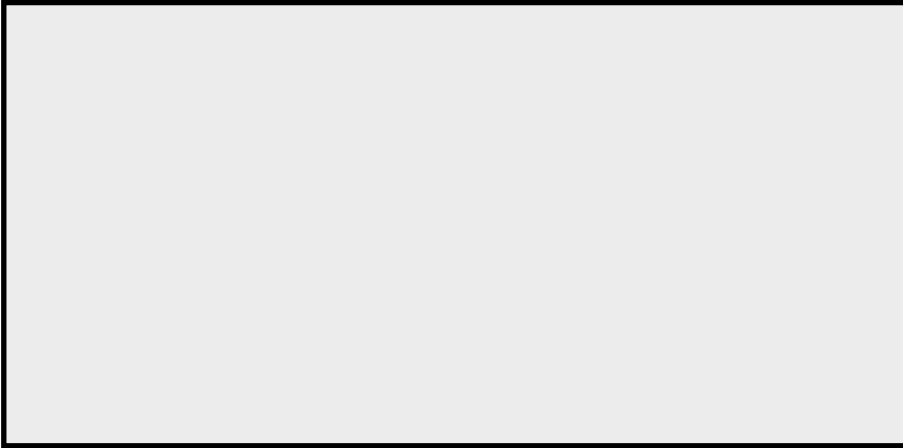


\_\_\_\_\_ is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

S6E1e. Explain that gravity is the force that governs the motion in the solar system.

*S6E2b: Construct an explanation of the cause of solar and lunar eclipses.*

1. Draw and Label a diagram of the Sun, Moon and Earth during a solar eclipse.



2. What moon phase must it be in order to have a TOTAL solar eclipse?

3. Draw and label a diagram of the Sun, Moon, and Earth during a lunar eclipse:



*S6E5e: Construct an explanation of how the movement of lithospheric plates, called plate tectonics can cause major geologic events such as earthquakes and volcanic eruptions.*

1. Draw a convergent plate boundary:

2. What type of landforms result from this type of plate boundary?

3. Draw a divergent plate boundary:

4. What type of landforms result from this type of plate boundary?

5. Draw a transform plate boundary:

6. What types of events result from activity at transform plate boundaries?

S6E5f: Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.

Chemical Weathering:

Example:

Physical Weathering:

Example:

Erosion by Wind:

Example:

Erosion by Water:

Example:

Deposition:

Example:

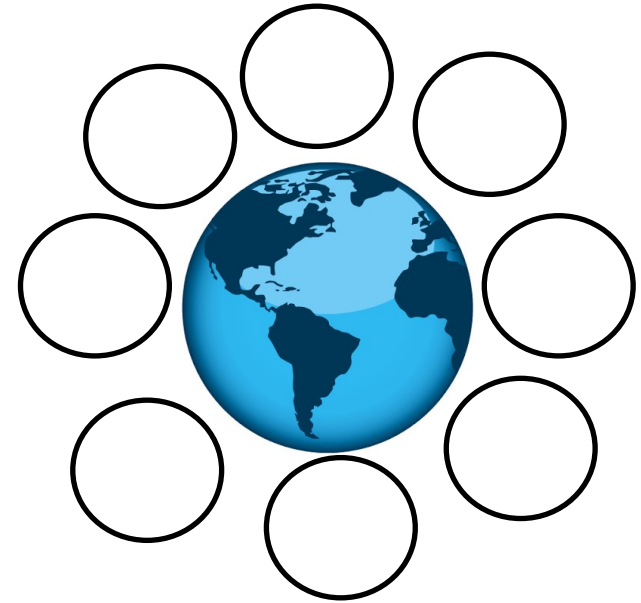
Erosion by Gravity:

Example:

S6E2a: Develop and use a model to demonstrate the phases of the moon by showing the relative positions of the sun, earth and moon.

The image below is NOT TO SCALE

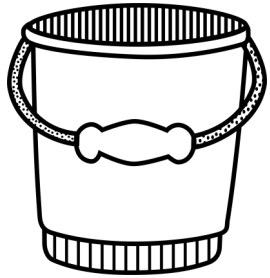
**Please color in and label each moon phase**





S6E3a: Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.

Label each image with the amount/proportion of Earth's water it represents: Oceans, lakes and rivers, glaciers, groundwater



\_\_\_\_\_ % of Earth's surface is covered with water.

\_\_\_\_\_ % of the water on Earth is salt water.

\_\_\_\_\_ % of the water on Earth is fresh water

\_\_\_\_\_ % of the Fresh water is frozen in glaciers and icebergs.

\_\_\_\_\_ % of the fresh water is found underground

\_\_\_\_\_ % of the fresh water is found in rivers, lakes and streams

S6E5c: Construct an explanation of how to classify rocks by their formation and how rocks change through geologic processes in the rock cycle.

### Sedimentary Rocks

~Process of formation:

~Examples of sedimentary rock:

### Igneous Rocks

~Process of formation:

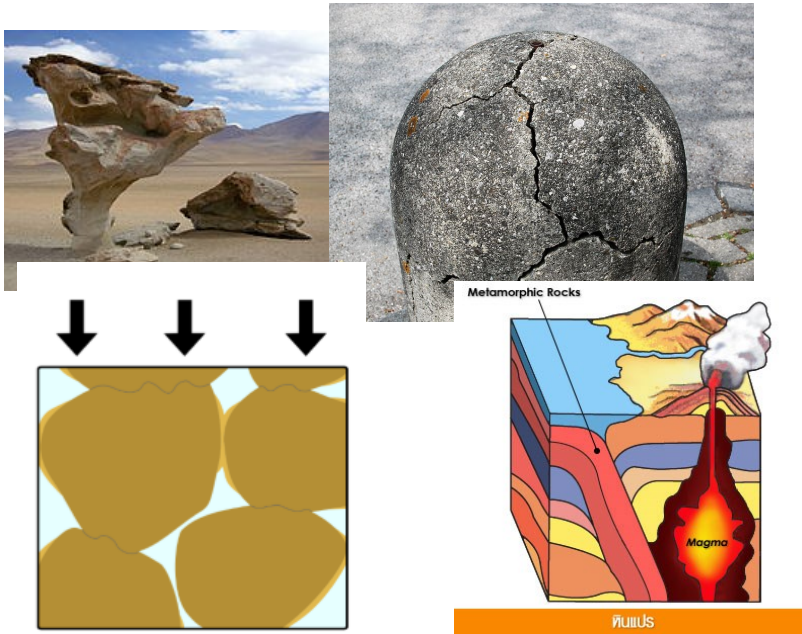
~Examples of igneous rock:

### Metamorphic Rocks

~Process of formation:

~Examples of metamorphic rock:

S6E5d: Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.

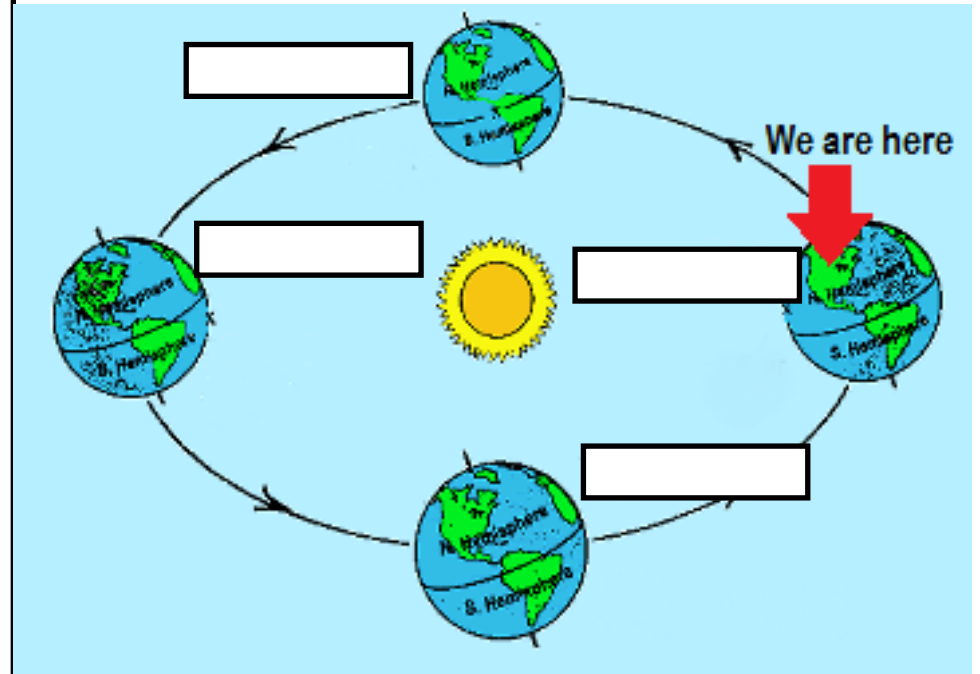


Look at the photos above. How are rocks changed throughout the process of the rock cycle? Create a flow chart (include igneous, sedimentary and metamorphic rocks) OR use the information to write a paragraph.

S6E2c: Analyze and interpret data to relate the tilt of the Earth to the distribution of sunlight throughout the year and its effect on seasons.

Label the four seasons in the diagram below:

Summer, Winter, Fall and Spring



What is the Vernal Equinox?

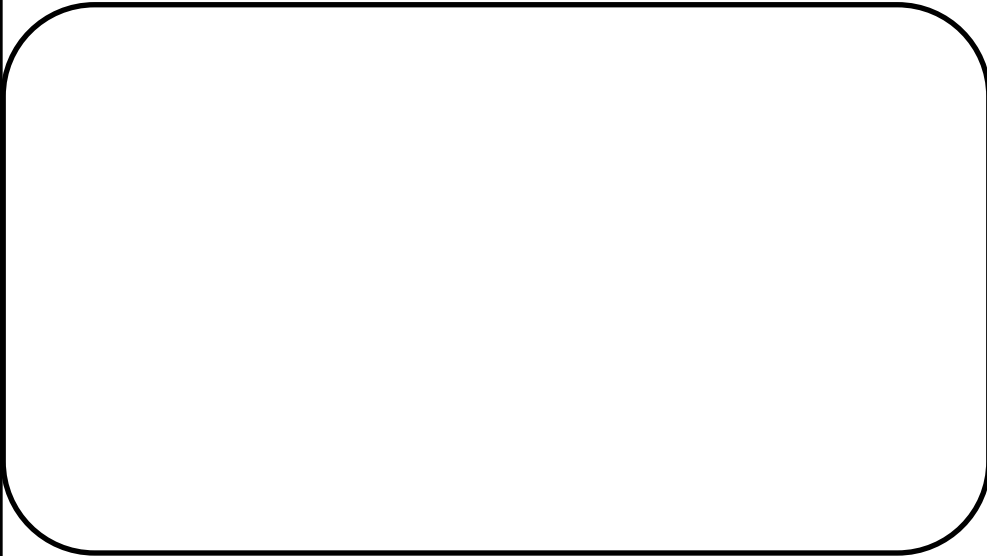
What is the Summer Solstice?

What is the Autumnal Equinox?

What is the Winter Solstice?

S6E3c: Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's oceans.

*Draw a diagram of the ocean floor, include the following parts: continental shelf, continental slope, abyssal plain, mid-ocean ridge, trench, volcanic island, continental rise and seamounts*



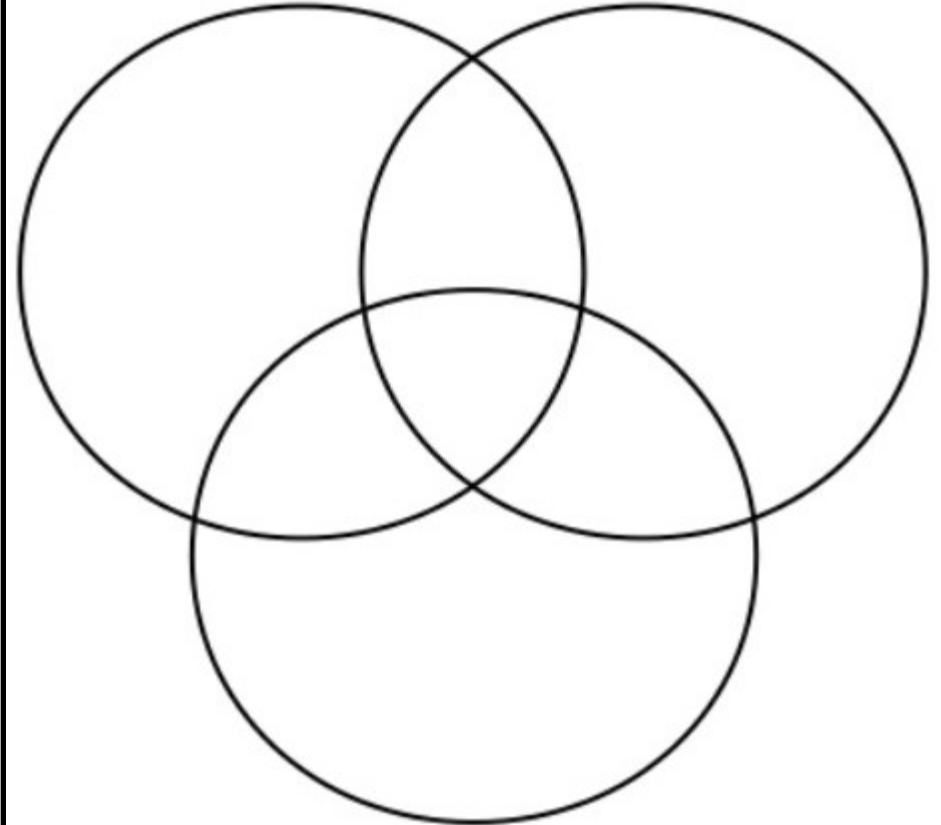
Answer the following questions:

1. Which sea floor feature is created by a **CONVERGENT** plate boundary?
2. Which sea floor feature is created by a **DIVERGENT** plate boundary?

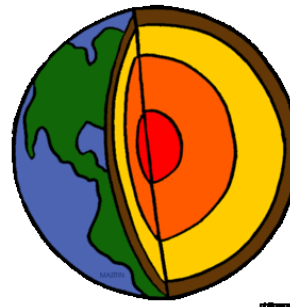
S6E5a: Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition.

**Crust**

**Mantle**



**Core**



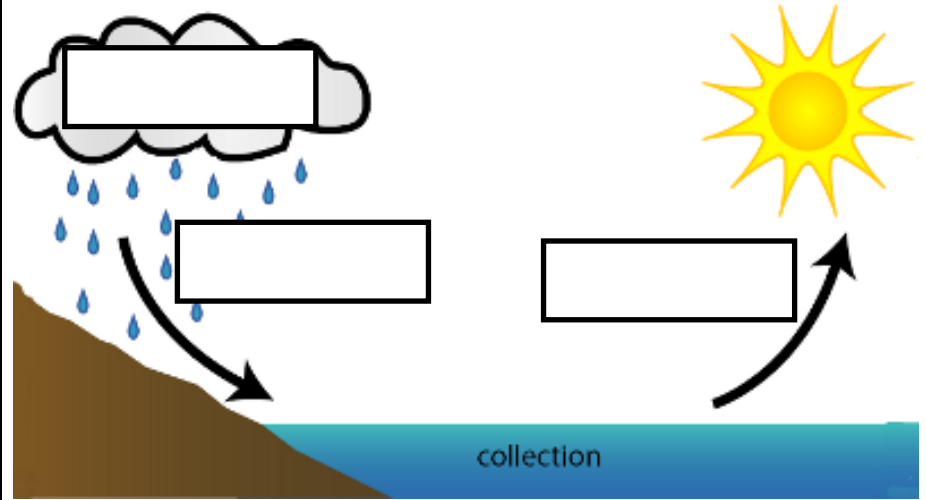
S6E5b: Plan and carry out an investigation of the characteristics of minerals and how minerals contribute to rock composition.

1. A mixture of minerals is called a \_\_\_\_\_.
2. What is granite made of?
3. What is basalt made of?
4. What is schist made of?

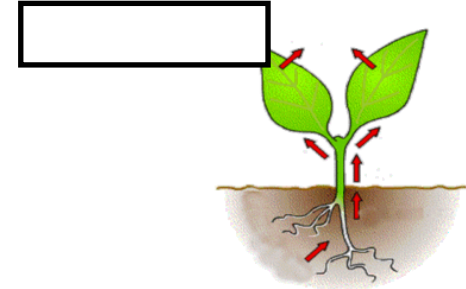
Compare and contrast two of the above rocks in a double bubble map below:

S6E3b: Plan and carry out an investigation to illustrate the role of the sun's energy in atmospheric conditions that lead to the cycling of water

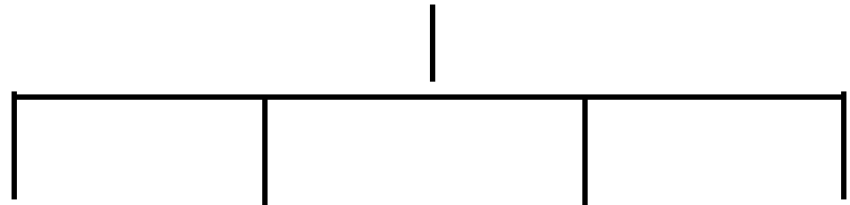
**LABEL the processes shown below:**



What provides the energy for evaporation?



Types of precipitation

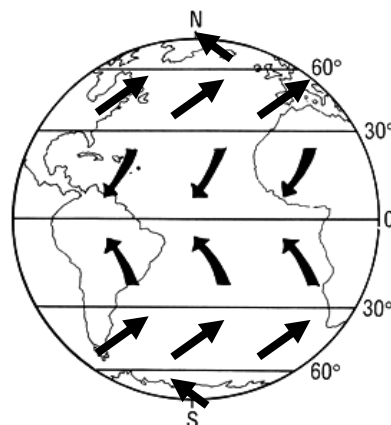


S6E4a: Analyze and interpret data to compare and contrast the composition of Earth's atmospheric layers (including the ozone layer) and greenhouse gases

Draw the layers of the atmosphere or create a graphical representation of their composition.

S6E4b: Relate unequal heating of land and water surface to form large global wind systems and weather events such as tornados and thunderstorms.

**Label the global wind systems shown below**



**1. Draw the symbols and describe the**

**four different weather fronts:**

Cold Front	Warm Front
Stationary Front:	Occluded Front:

What causes a tornado?

4. What causes a thunderstorm?

5. What must occur in order for a thunderstorm to be classified as SEVERE?

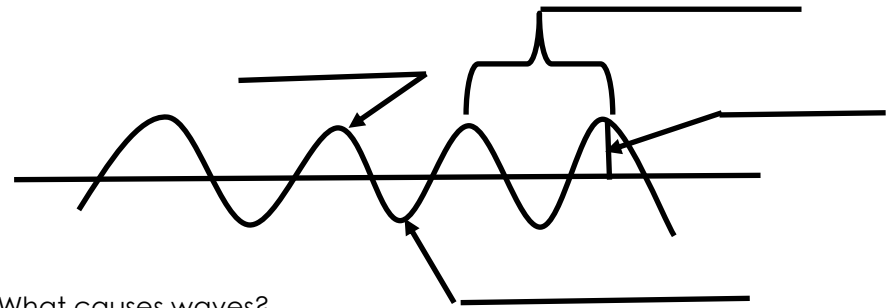
S6E4d & e. Construct an explanation of the relationship between air pressure, weather fronts, and air masses and meteorological events such as tornados and thunderstorms. Analyze and interpret weather data to explain the effects of moisture evaporating from the ocean on weather patterns and weather events such as hurricanes.

1. What is a hurricane?
2. What are hurricanes called everywhere else in the world?
3. What gives a hurricane its POWER?
4. What happens to a hurricane as it travels over land?
5. When water evaporates from the ocean, what happens to the salt?
6. How does the sun's heating water in the tropics effect the climate in the rest of the world?
7. Where does the energy that causes water in the ocean to evaporate originally come from?



S6E3d: d. Analyze and interpret data to create graphic representations of the causes and effects of waves, currents, and tides in Earth's systems.

1. Label the wave below:



2. What causes waves?
3. What is a current?
4. What causes surface currents?
5. What causes deep currents?
6. What is a spring tide, and what causes it?
7. What is a neap tide, and what causes it?