

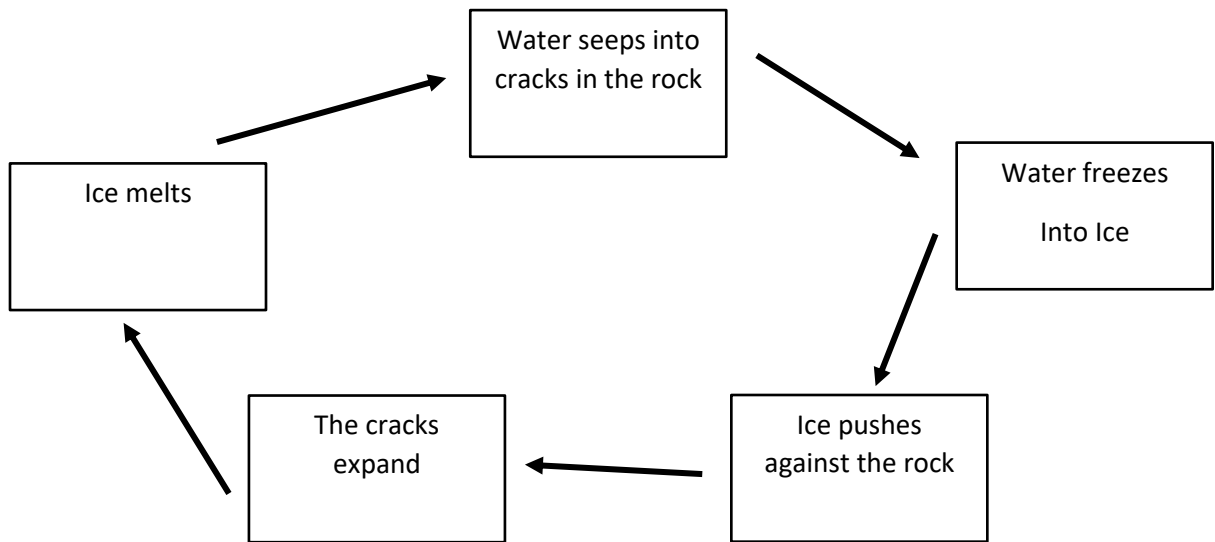
CH 10 Weathering

- **Mechanical Weathering (pg. 278)**

- The _____ of rock into _____ pieces by _____ means is called _____ weathering. Agents of mechanical weathering include _____, _____, _____, _____ and even _____.

- **Ice (pg. 278)**

- _____ happens when _____ seeps into cracks during _____ weather. The temperature _____, the water _____ and _____. The ice _____ against the sides of the _____. This causes the crack to _____.



- **Abrasion (pg. 279)**

- _____ is the grinding and wearing away of rock _____ through the _____ action of other _____ and sand particles. There are _____ forms of abrasion.

- **Wind, Water, & Gravity (pg. 279)**

- When _____ and pebbles _____ along the bottom of swiftly flowing _____, they _____ into and scrape _____ each other. The weathering that occurs eventually causes the _____ to become _____ and smooth.
- _____ also causes abrasion. When wind blows _____ and silt against exposed _____, the sand eventually _____ away the rock's _____.
- _____ also occurs when rocks _____ on one another down a mountainside. Any time one _____ hits another, _____ takes place.

- **Plants (pg. 280)**

- Some plants can easily _____ rocks. As plants _____ the force of the _____ root becomes so strong that the crack _____ . Eventually the entire rock can _____ apart.

- **Animals (pg. 280)**

- Animals _____ through the _____ and _____ soil particles around. This movement _____ fresh surfaces to continued _____ .
- The _____ and digging that animals do often contribute to another type of _____ , called _____ weathering.

- **Chemical Weathering (pgs. 281 - 283)**

- The process by which rocks _____ down as a result of _____ reactions is called _____ weathering.

- **Water**

- Hard rock such as _____ , can be _____ down by _____ . But, it may take _____ of years.

- **Acid Precipitation**

- _____ , _____ , or _____ that contains a high concentration of _____ is called _____ precipitation. Acid precipitation contains _____ acid than _____ precipitation. The _____ level of _____ can cause very _____ weathering of rock.

- **Acids in Living Things**

- Another source of _____ that cause _____ might surprise you. _____ produce acids that can slowly _____ down rock.

- **Air**

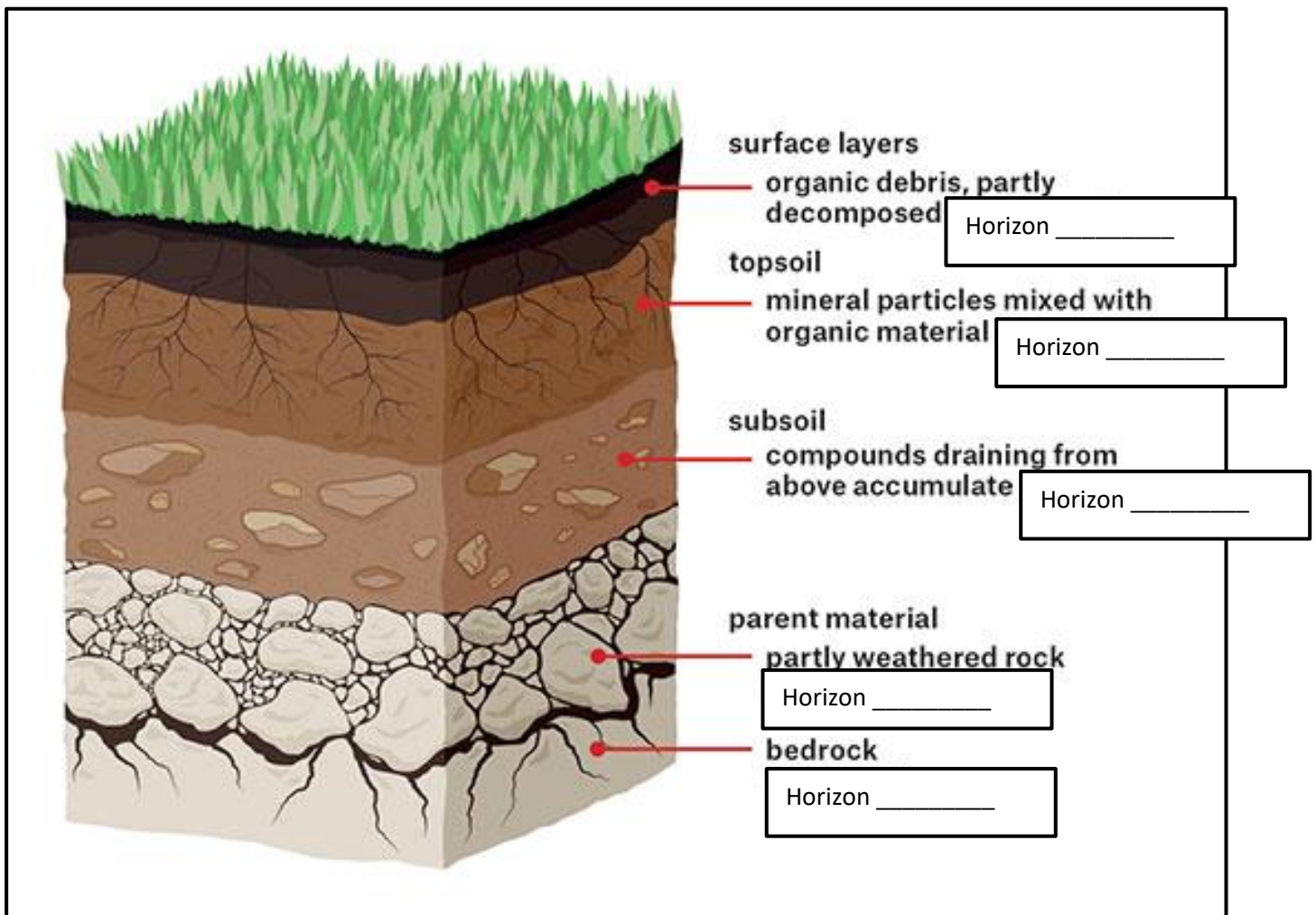
- Chemical weathering can happen due to _____ . The _____ in the air reacts with iron causing things to _____ . _____ speeds up the process. _____ is a chemical reaction in which an _____ such as iron, combines with _____ to form an oxide.

- **From Bedrock to Soil (pg. 288)**

- _____ is a loose mixture of small _____ , _____ material, _____ , and _____ that can support the _____ of vegetation. The type of _____ that forms depends on the type of _____ that weathers. The _____ formation that is the source of _____ fragments in the soil is called _____ rock.
- _____ is the layer of rock beneath the _____ . Soil that remains _____ its parent rock is called _____ soil. Soil can be _____ or _____ way from its _____ rock. This soil is called _____ soil.

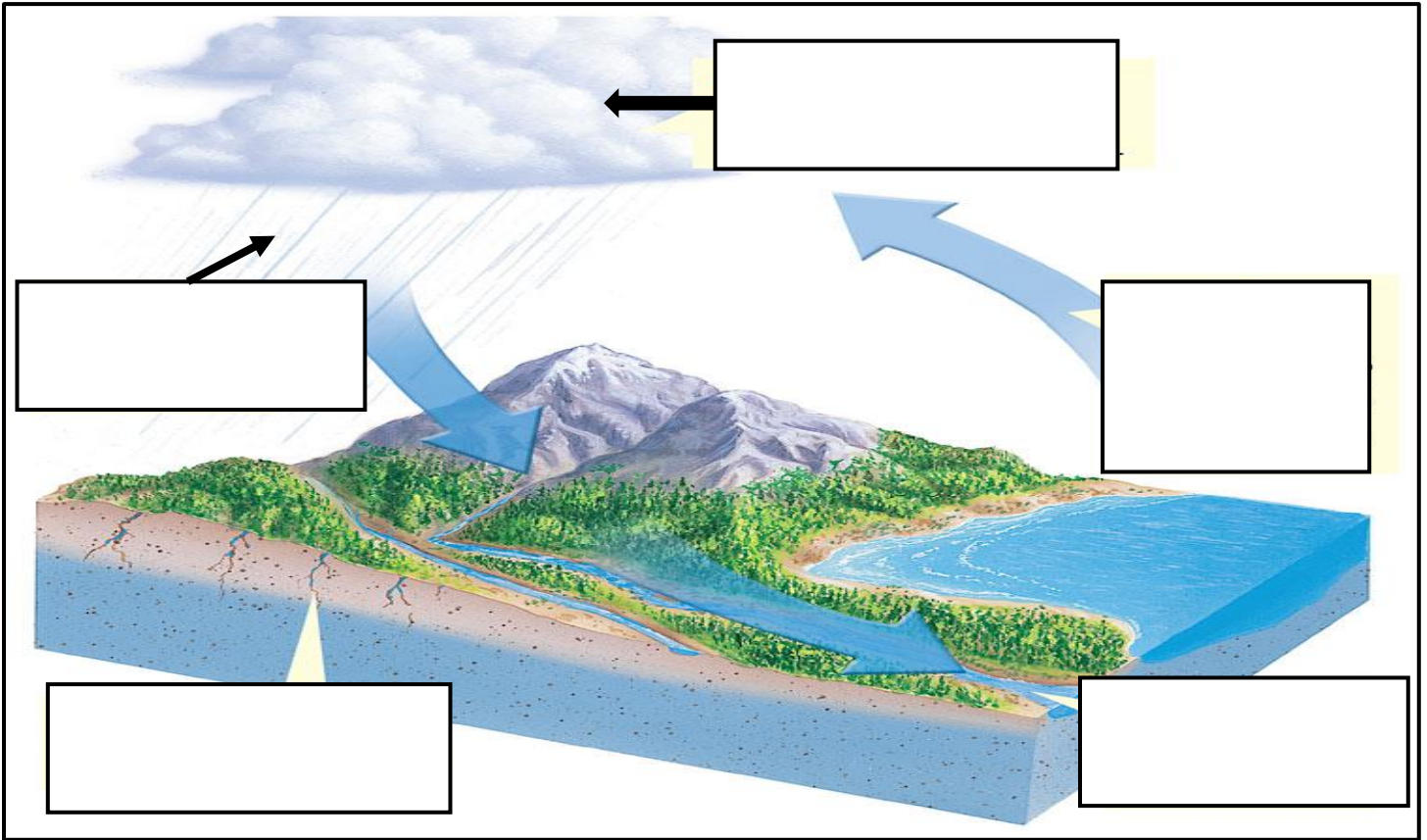
• **Soil Properties (pg. 289-291)**

- Soil is made from _____ sized particles. These particles can be as _____ as 2mm such as _____. Other particles can be too _____ to see without a _____. Soil _____ is the soil _____ that is based on the _____ of soil.
- _____ and _____ movement through soil is also influenced by soil _____. Soil structure is the _____ of soil _____. Soil particles are not _____ evenly spread out.
- _____ in soil such as Iron are necessary for plants to _____. Some soils are _____ in nutrients and other soils may not have many _____ or are not able to _____ the nutrients to the plants. A soil's _____ to hold nutrients and to _____ nutrients to the plant is described as soil _____.
- Because of the way soil _____, soil often ends up in a series of _____ with _____-rich soil on top, _____ below that, and _____ on the bottom. Geologists call these layers _____.



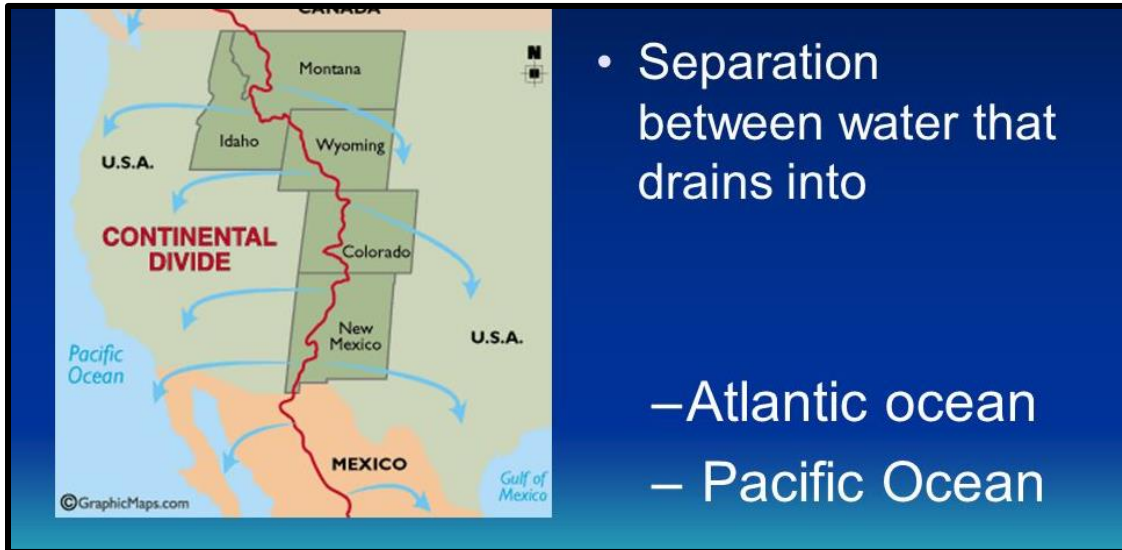
CH 11 Flow of Fresh Water (pg.308-309)

- _____ is the process by which _____ and _____ are _____ from one location to _____. Rivers are not the only agents of _____. _____, _____, _____ and _____ can also cause Erosion.
- The _____ movement of Earth's _____ from the _____ to the _____ to the _____ is called the _____.



River Systems (pg. 310)

- A stream that _____ into a lake or into a larger stream is called a _____.
- River systems are divided into _____ called _____. A watershed or _____ basin, is the area of land that is _____ by a water system. The _____ watershed in the United States is the _____ river watershed. Watersheds are _____ from each other by an area of _____ ground called a _____.



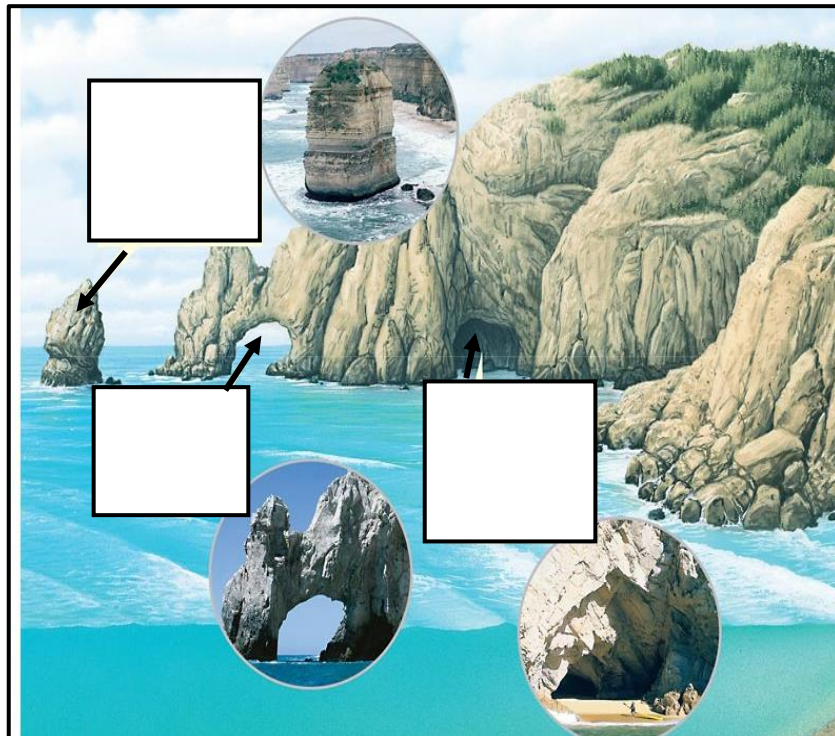
Stream Erosion (pg. 311-312)

- As a stream forms, it _____ rock and soil to make a channel. A Channel is the _____ that a stream follows. When a stream first forms, it's _____ is usually _____ and _____. Over time the stream _____ rock and soil downstream and makes the channel _____ and _____. When streams become _____ and _____ they are called _____. A Stream's _____ to erode is influenced by three factors:
 1. _____
 2. _____
 3. _____
- Gradient is the _____ of the _____ in elevation over a certain _____.
- The _____ of water that a stream or river _____ in a given _____ of time is called _____.
- The _____ carried by a stream are called the stream's _____. The _____ of the stream's load is affected by the stream's _____.

CH 12 Agents of Erosion & Deposition

Shoreline Erosion & Deposition (pgs. 342-347)

- The _____ between _____ and a body of _____ is called a _____.
- Waves travel in _____ called _____. As wave trains move _____ from their source they travel through the ocean water _____. Breaking waves are known as _____.
- The wave _____ is the time interval between _____ waves.
- Wave _____ produces a variety of features along a _____.

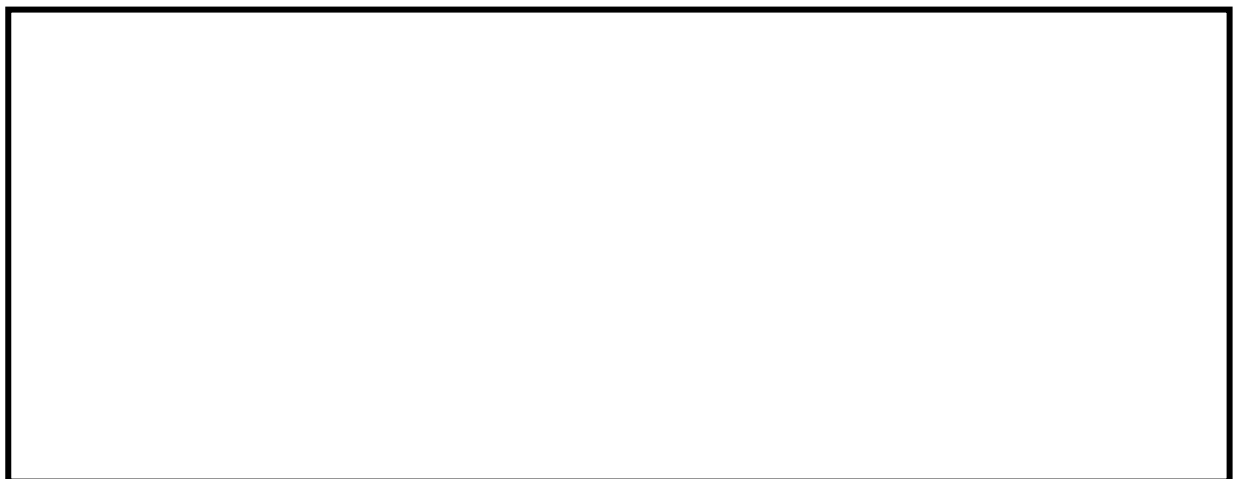


- Much of the _____ responsible for _____ you might see along the _____ takes place during _____. Large _____ generated by storms release far more _____ than normal waves. This energy is so _____ that it is capable of removing huge _____ of rock.
- An area of the _____ made up of material _____ by waves is called a _____.
- The movement of _____ along a beach depends on the _____ at which the _____ strike the shore. Most waves approach the beach at a slight _____ and retreat in a _____ more _____ to the shore. This movement of _____ is called a _____ current. A _____ current moves the sand in a _____ pattern along the _____.

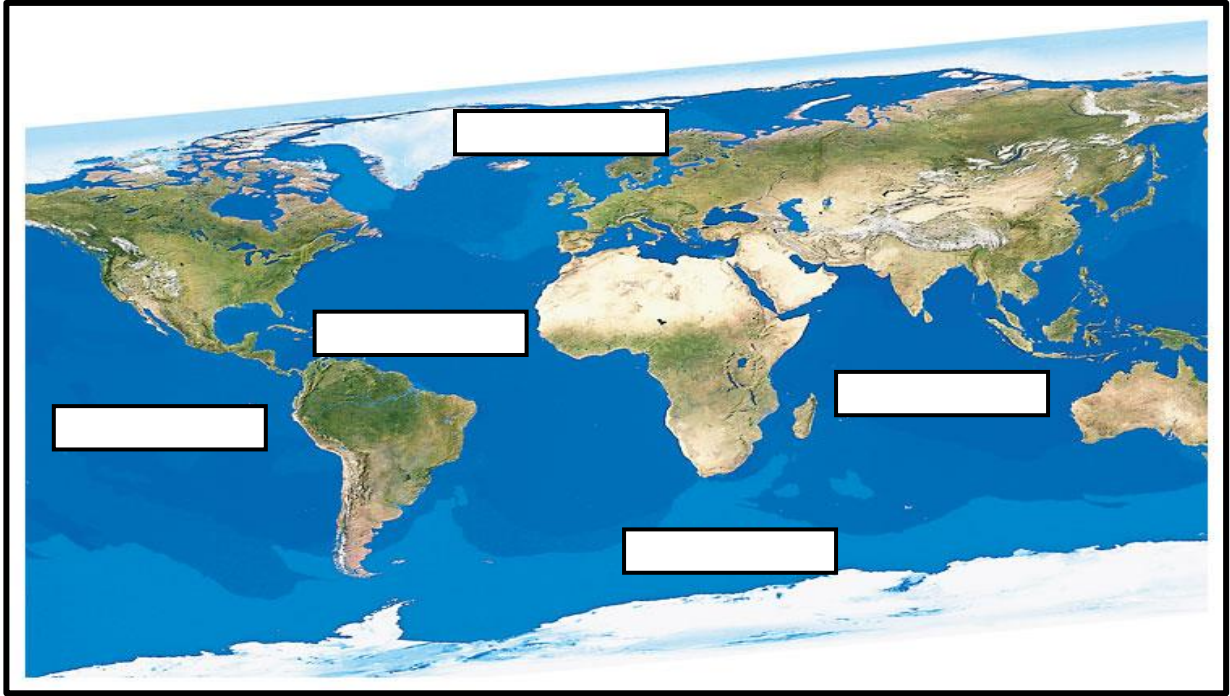
Wind Erosion & Deposition (pgs. 348-351)

- _____ moves material in _____ ways. In areas where _____ winds occur, material is moved by _____. Saltation is the _____ and _____ movement of _____-sized particles in the _____ the wind is moving.
- The _____ of fine _____ by wind is called _____. During deflation , _____ removes the _____ layer of the fine sediment or _____ and leaves behind _____ fragments that are too _____ to be lifted by the wind.
- The _____ and _____ down of rock surfaces by other _____ or sand particles is called _____. Abrasion commonly happens when areas where there are _____ winds, _____ sand, and _____ rocks. The _____ of millions of _____ sand grains creates a _____ effect.
- A Mound of _____ deposited sand that keeps it's _____ even though it moves is called a _____.
- Dunes tend to _____ in the direction of strong _____. Different wind _____ produce dunes in various _____ and _____. A dune usually has a _____ sloped side and a _____ sloped side or _____.

**** In the box below draw a sand dune and label each side and the direction of the Wind.**

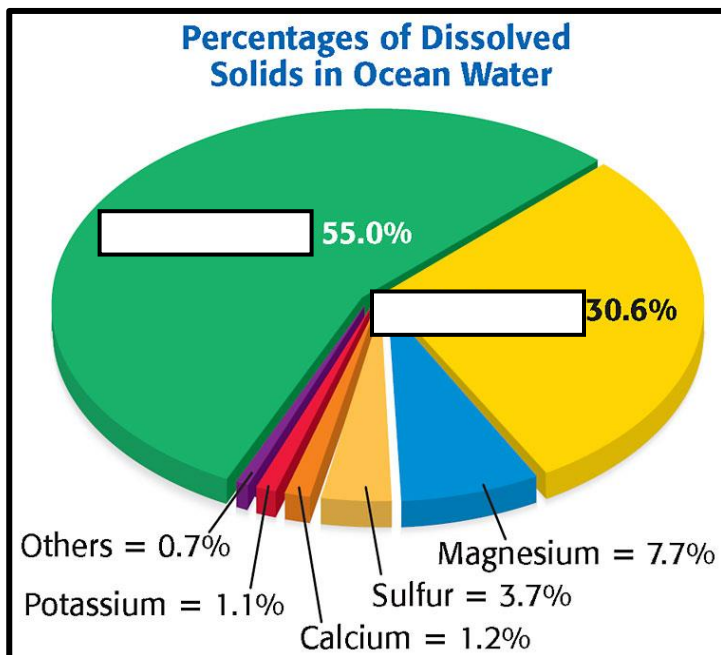


CH 13 Oceans (pg. 374)



1. Global Ocean- _____
 2. How did the oceans form? _____
-

Characteristics of Ocean Water (pg. 376)



As rivers and streams flow towards the oceans they _____ various _____.

These dissolved _____ are left in the ocean when water _____.

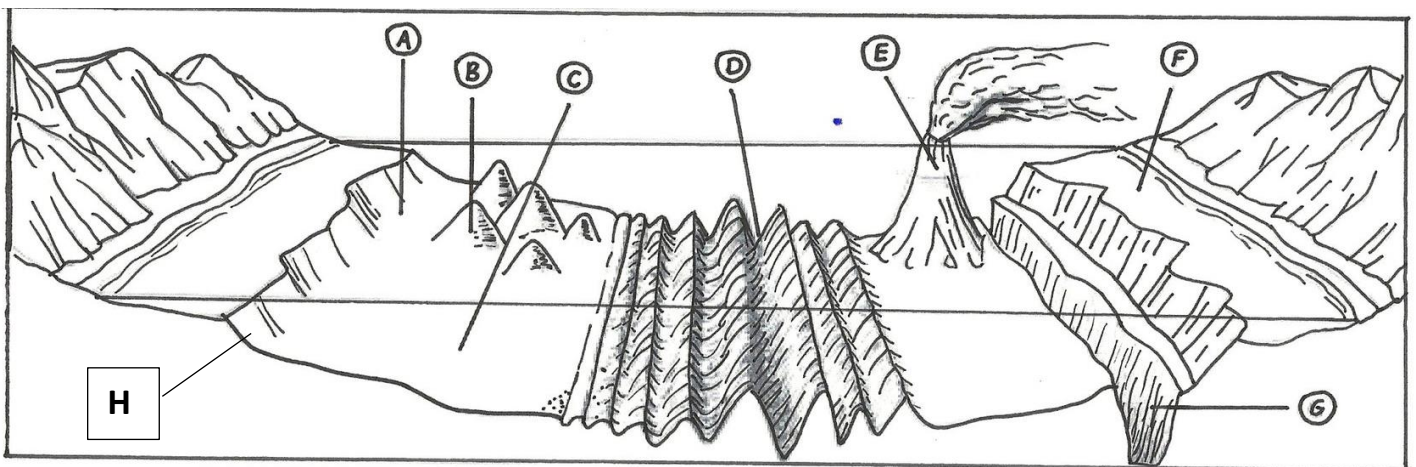
The measure of the amount of dissolved solids in a liquid is called _____.

Salinity Levels of Ocean Water (pgs. 376-377)

- _____ affects salinity levels.
 - The _____ the temperature, the _____ the salinity level in ocean water.
 - The _____ the temperature, the _____ the salinity level in the ocean water.
- Water _____ affects salinity levels.
 - Water currents that move _____ have a _____ level of salinity.
 - Water currents that move _____ have a _____ level of salinity.

The Ocean Floor and its Landforms (pgs. 384-385)

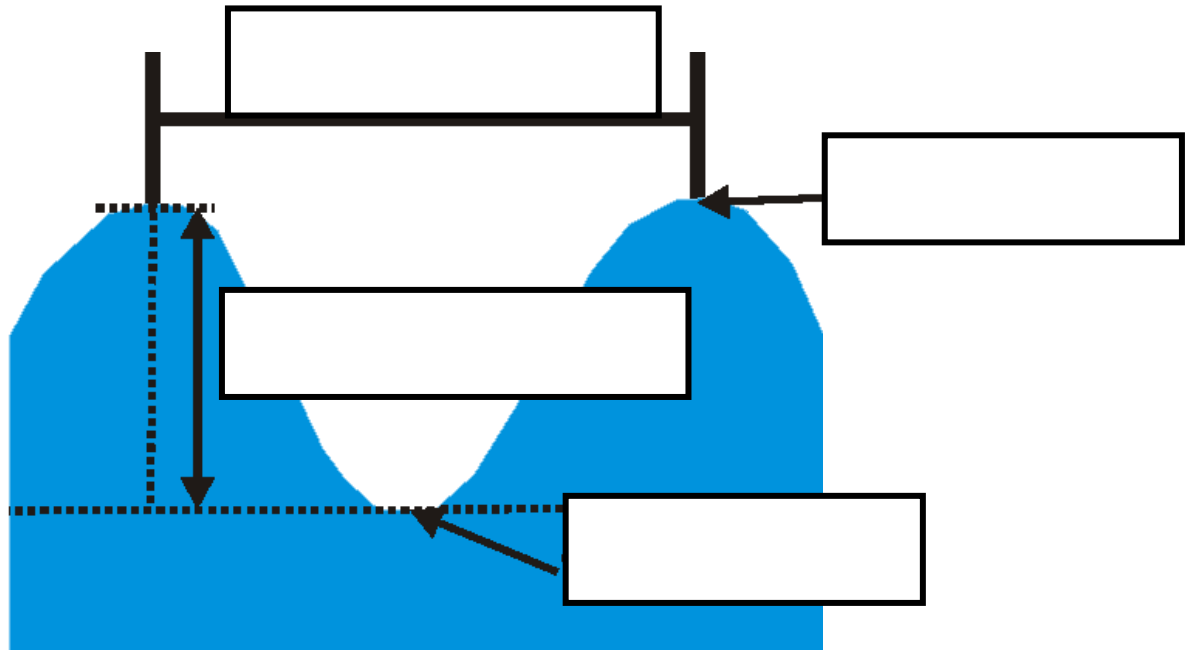
- There are _____ regions of the ocean floor.
 1. _____ - is made of continental crust
 2. _____ - is made of oceanic crust
- The _____ contains the
 1. _____
 2. _____
 3. _____
- The _____ contains the
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____



A. _____
 B. _____
 C. _____
 D. _____

E. _____
 F. _____
 G. _____
 H. _____

Parts of a Wave – Study Guide (pgs 426-427)



1. Crest- _____
2. Trough - _____
3. Wavelength - _____
4. Wave Height

5. Wave Period - _____

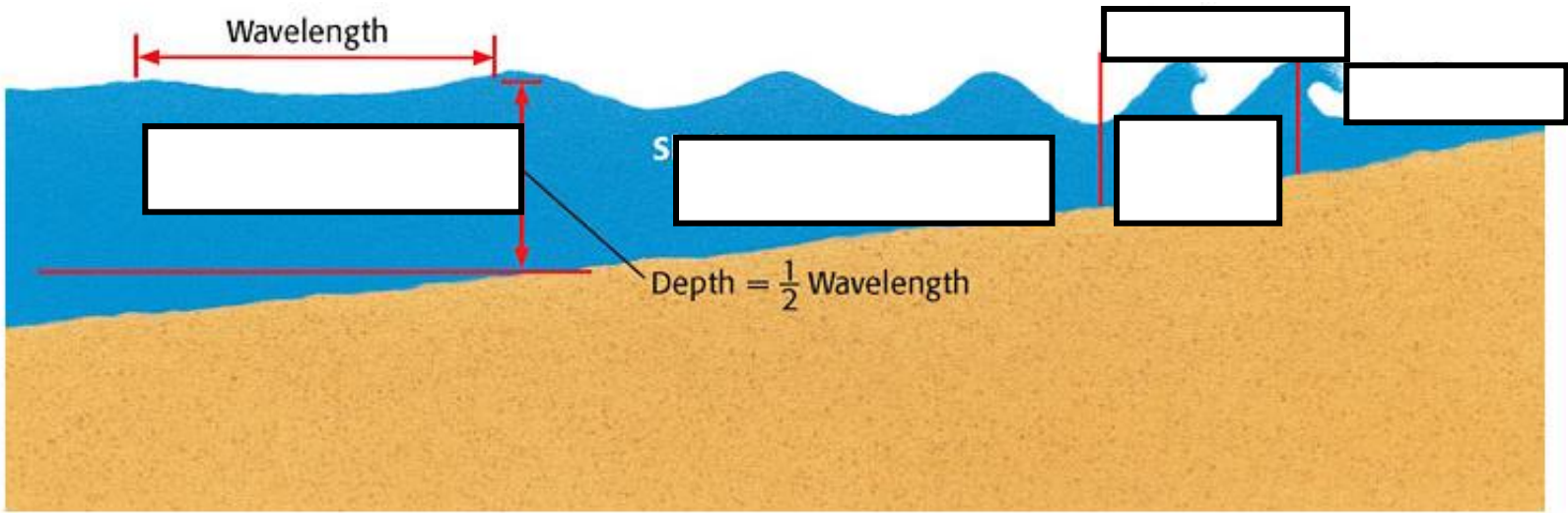
- Waves not only come in different _____ but also travel in different _____.
- To calculate speed scientists use the formula below:

$$\frac{\boxed{}}{\boxed{}} = \boxed{\text{Wave Speed (m/s)}}$$

Math Focus: Calculate

A water wave has a wave period of 10s and a wavelength of 50m what is the wave speed? _____

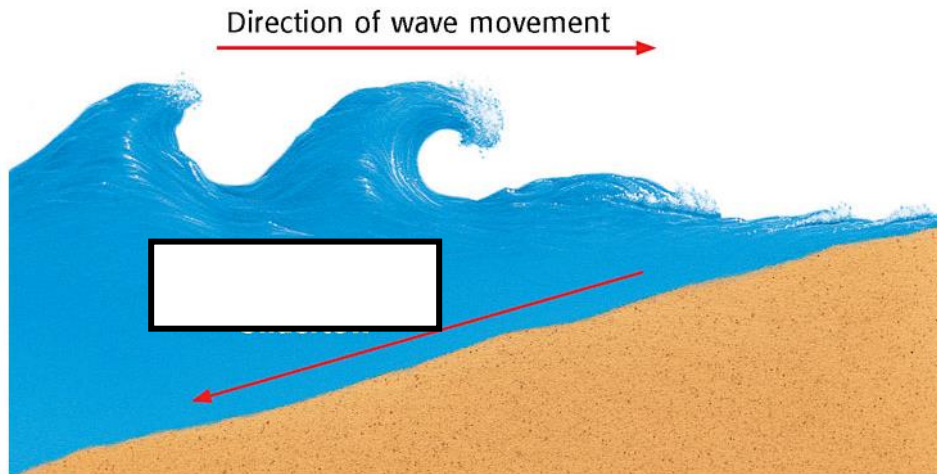
Deep-Water Waves & Shallow-Water Waves (pg 428)



6. Deep-Water Waves - _____
7. Shallow-Water Waves - _____
8. Breaker - _____
9. Breaker Zone - _____
10. Surf - _____

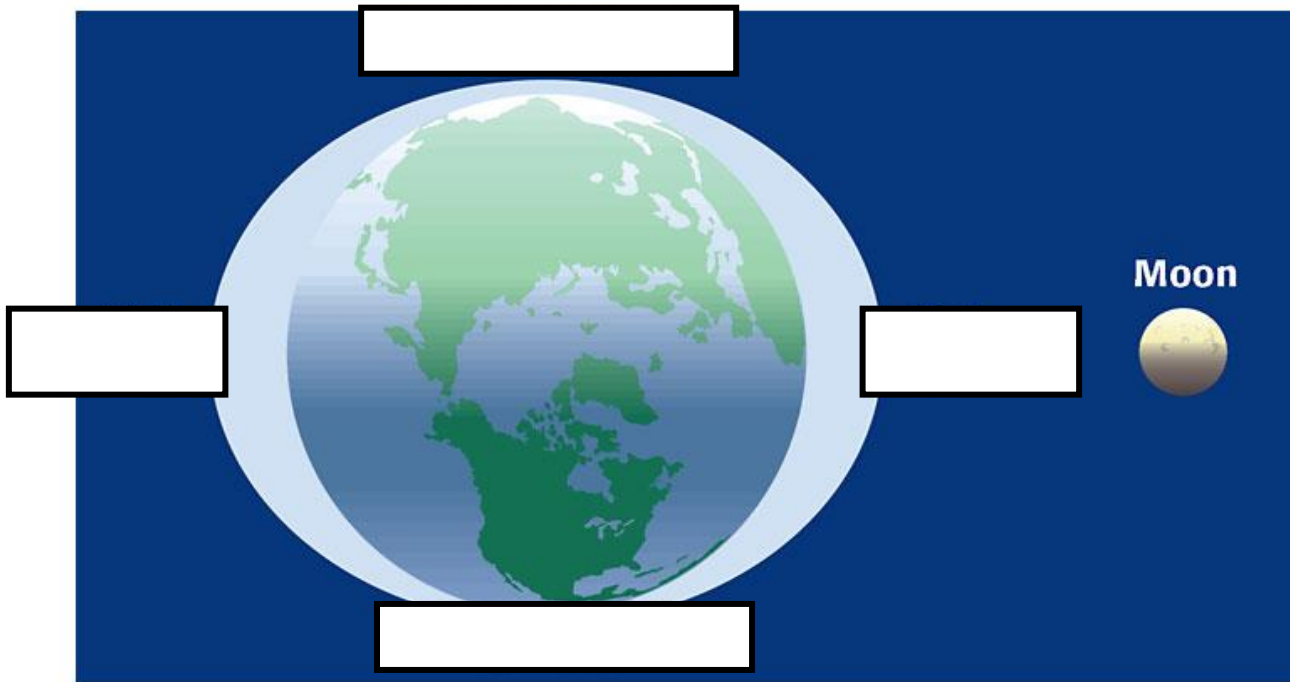
- An ocean wave has a wavelength of 60m. It is traveling through water that is 40m deep. Is it a shallow-water wave or a deep-water wave? _____

Effects of Waves (pg 429)



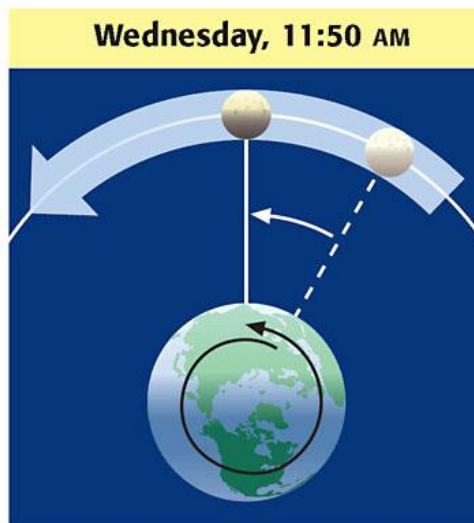
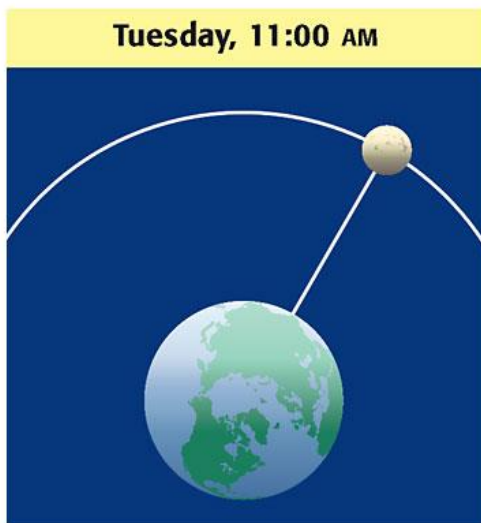
11. Undertow - _____

Tides (pg. 433)



1. Tides - _____
2. High Tide - _____
3. Low Tide - _____

Timing of the Tides (pg. 433)



Fill in the tide times for each day below:

Thursday _____

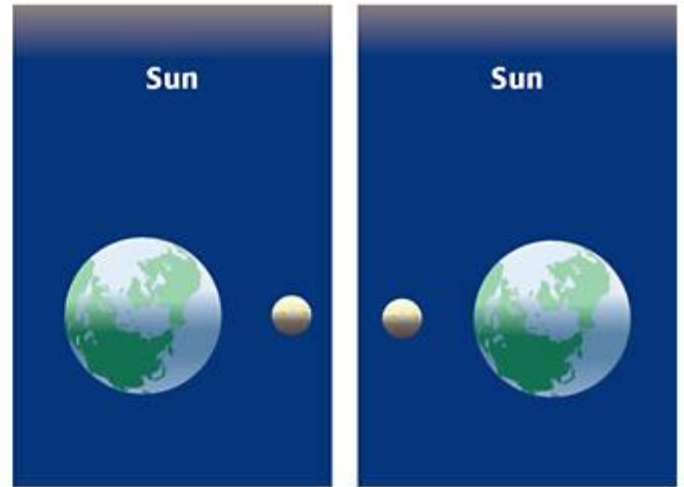
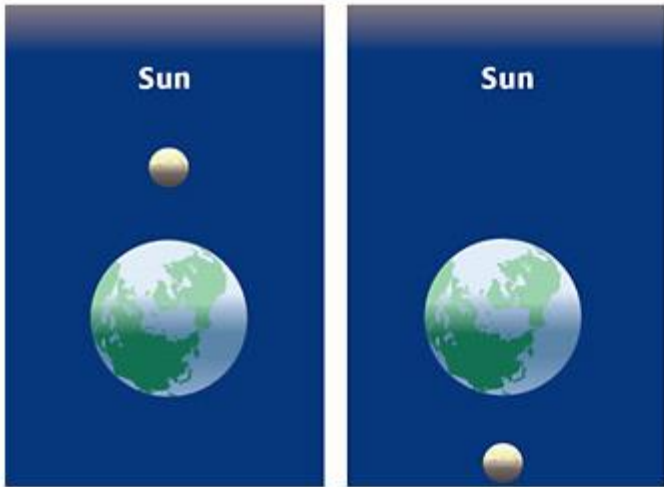
Friday _____

Saturday _____

Sunday _____

Monday _____

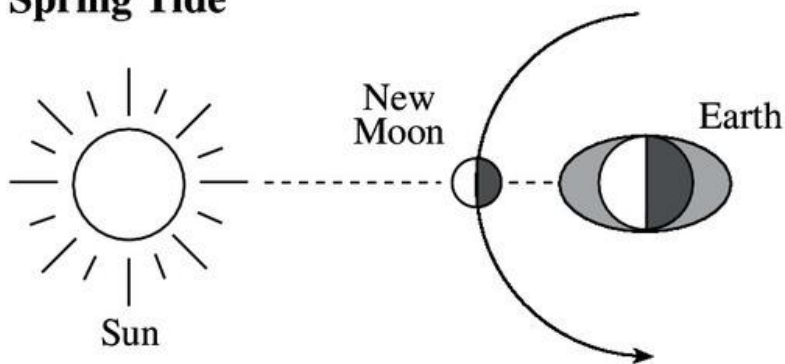
Tidal Variations (pg. 434)



1. Spring Tides - _____

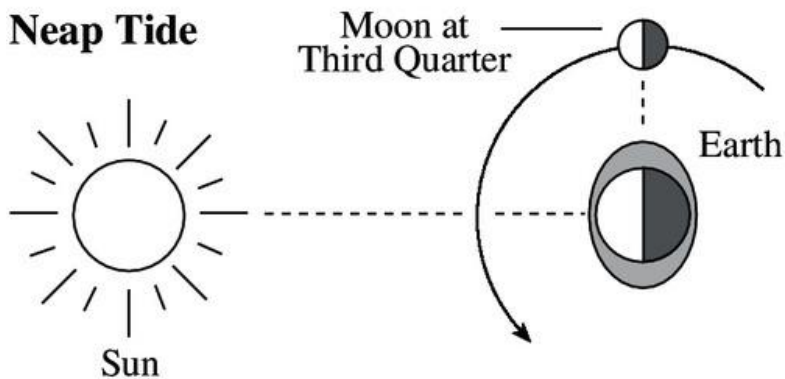
2. Neap Tides - _____

Spring Tide



Sun, Moon, and Earth are
_____A
and happen on a
_____ and
_____ moon

Neap Tide



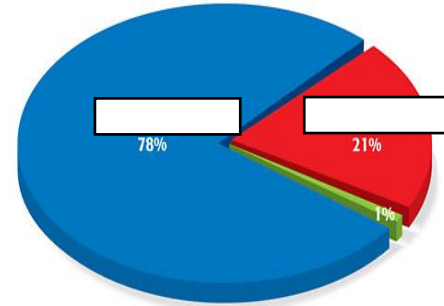
Sun, Moon, and Earth form
a _____
And happen on a
_____ and
_____ moon

Characteristics of the Atmosphere (pg. 448)

- The _____ is a mixture of _____ that surrounds Earth. In addition to containing the oxygen you need to breathe, the atmosphere protects you from the sun's _____ rays.

The Composition of the Atmosphere (pg. 448)

- The atmosphere is made up mostly of _____ gas. The _____ we breathe makes up a little more than _____% of the atmosphere.
- _____ is also found in the atmosphere.
- Liquid water and solid water are found in _____.



Atmospheric Pressure & Temperature (pg. 449)

- As _____ increases in the atmosphere air pressure _____ . The atmosphere is held around the Earth by _____ .
- The measure of the _____ with which air molecules _____ on a surface is called _____ . As you move further away from the Earth's _____ fewer air molecules are above you.
- Air temperature also _____ as altitude increases. The temperature differences are the result of the way solar energy is _____ as it moves through the atmosphere.

Layers of the Atmosphere (pg. 450)

- The _____ is the layer that we live in. It is the _____ layer which is next to the Earth's _____. This is the _____ layer and contains _____% of the atmosphere's total _____.
- The _____ is the layer that is home to the _____ layer. This layer is _____ the troposphere. The gases in this layer are layered and do not _____.
- The _____ is the layer that is in the _____. This layer is also the _____ in temperature.
- The _____ is the layer at the _____ of the atmosphere. In this layer the temperature _____ as you go up in altitude.

Atmospheric Heating

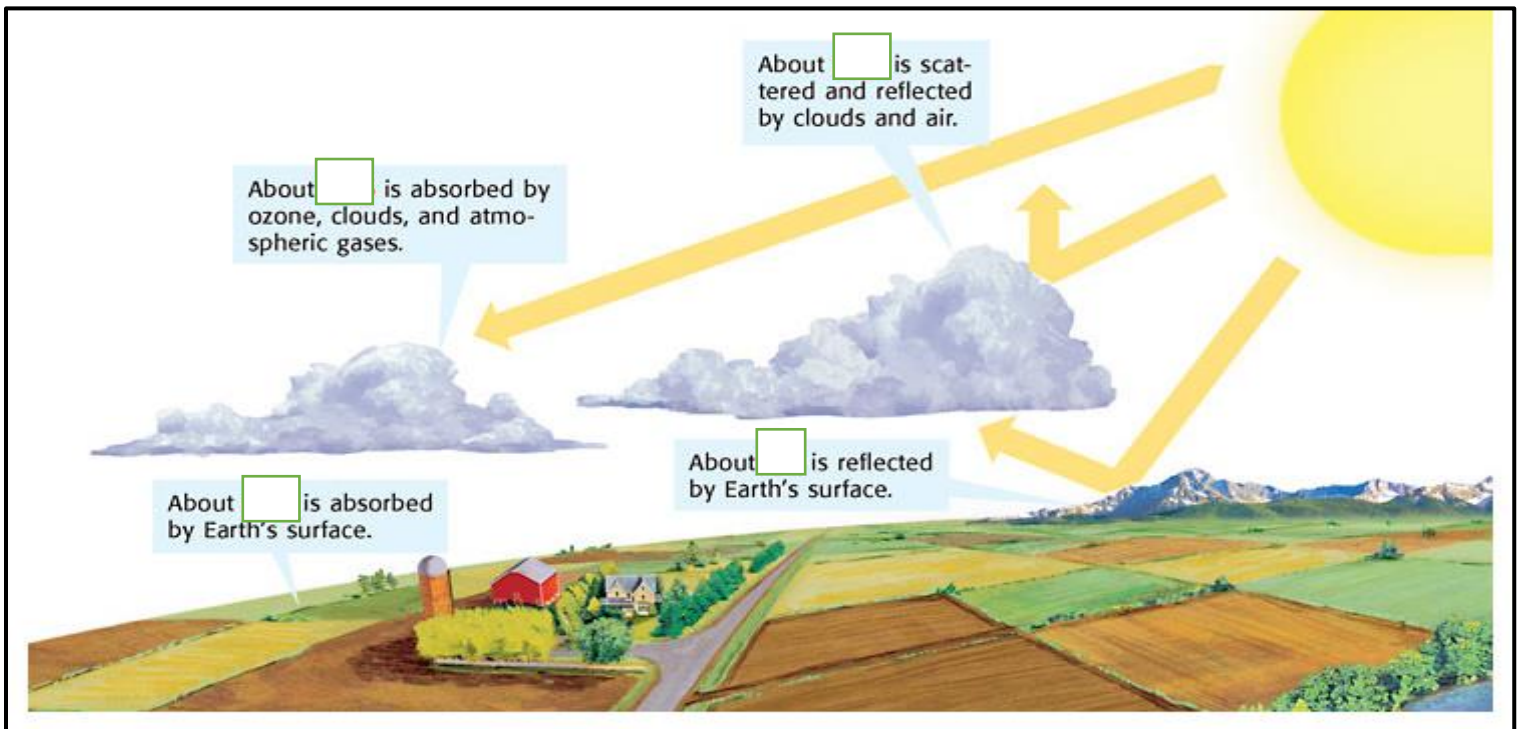
- The Earth and its atmosphere are warmed by the _____.

How is the sun's energy transferred to Earth? (pg. 454)

1. The Earth receives energy from the sun by way of _____.
 - a. **RADIATION** is the transfer of energy as _____.
 - b. Earth receives only two-billionths of the sun's energy, but this is enough to drive the _____.

What happens to the solar energy?

Fill in the % for box in the picture below



2. **CONDUCTION** is energy transfer by _____ . (pg. 455)
 - a. Thermal conduction is the transfer of thermal(heat)energy _____
a _____.
 - b. Thermal energy is always transferred _____ to _____
areas.
 - c. When _____ come in direct contact with the
_____ of the Earth, thermal energy is
_____ to the _____.

3. **CONVECTION** is the transfer of thermal (heat) energy by the _____

of a _____ or _____.

a. _____ of the thermal energy in the atmosphere is _____ by _____.

b. In _____, a cycle exists where _____ air (less dense) _____ and _____ air (more dense) _____.

What is the Greenhouse Effect? (pg. 456)

1. About _____% of the sun's radiation that enters the Earth's atmosphere is _____ and reradiated a _____.

2. In the greenhouse effect, gases such as _____ and _____ absorb thermal energy and radiate it back to _____.

The Radiation Balance (pg. 456)

1. For the Earth to remain livable, the amount of energy _____ from the _____ and the amount of energy _____ to _____ must be approximately _____.

2. The **RADIATION BALANCE** is the balance between _____ energy and _____ energy is called _____.

Global Warming (pg. 457)

1. Scientific data shows the average global temperatures have _____ in the past one-hundred years.

2. This gradual _____ in global temperatures is called _____.

3. Most scientists believe this global warming trend is due to _____.

Human Activities may cause Global Warming

1. The _____ of _____ fuels and _____ of trees may be _____ levels of greenhouse _____.

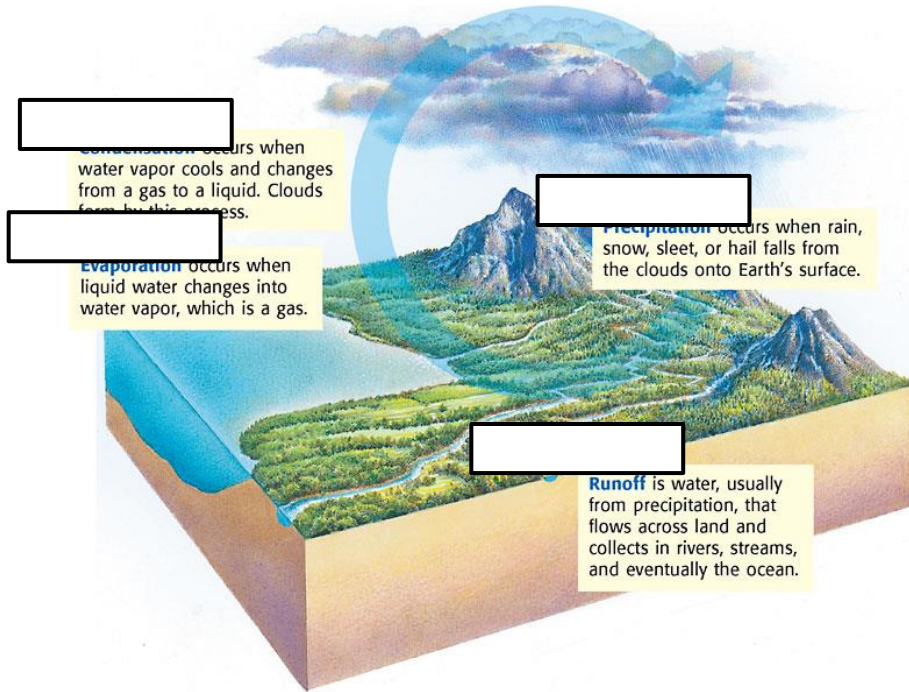
Water in the Air

- The condition of the _____ at a certain time and place is called _____.

The Water Cycle (pg. 482)

1. Water in _____, _____ and _____ forms
Is constantly _____ through the water cycle.
2. The water cycle is the _____ movement of _____
from sources on Earth's surface. Those sources include _____,
_____ and _____.

Fill in the correct term for the boxes in the picture below



Humidity (pg. 483)

1. As water _____ from lakes, oceans and plants, it becomes _____, or moisture in the _____.
Water vapor is _____.
2. The amount of _____ in the air is called _____. As water evaporates and becomes water vapor, the humidity of the air _____.

Condensation (pg. 485)

1. Water droplets that form on the outside of a glass of ice water is called _____. The water droplets comes from the surrounding _____.
2. Condensation is the process by which a _____, such as _____, becomes a _____. Before condensation can occur, the air must be _____, which means that the air must have _____ of 100%.
3. Air can become _____ when water vapor is added to the air through _____. Air can also become saturated when it cools to its dew point. The _____ is the temperature at which gas _____ into a _____.



Clouds (pg. 486-487)

1. A _____ is a collection of millions of tiny _____ droplets. Clouds form as warm air _____ and _____.

As the air cools, it becomes _____. When the air is saturated, the _____ vapor changes to a _____ or _____ depending on the _____.

Clouds are classified by _____ and by _____.

2. Puffy, white clouds that tend to have flat bottoms are called _____ clouds. These clouds indicate _____ weather, however when these clouds get _____ they produce _____. Thunderstorms come from a cloud called a _____ cloud. Clouds that have names that include _____ and _____ are likely to produce _____.

3. Clouds that form in layers are called _____ clouds. These clouds cover _____ areas of the sky and often block out the _____. _____ clouds are _____ stratus clouds that usually produce light to heavy continuous _____. _____ is a stratus cloud that is formed near the _____.

High Clouds Because of the cold temperatures at high altitude, high clouds are made up of ice crystals. The prefix *cirro-* is used to describe high clouds.

Middle Clouds Middle clouds can be made up of both water drops and ice crystals. The prefix *alto-* is used to describe middle clouds.

Low Clouds Low clouds are made up of water drops. There is no specific prefix used to describe low clouds.



Severe Weather

- Weather that can cause _____ damage and sometimes _____ is called _____ weather.

Thunderstorms (496-497)

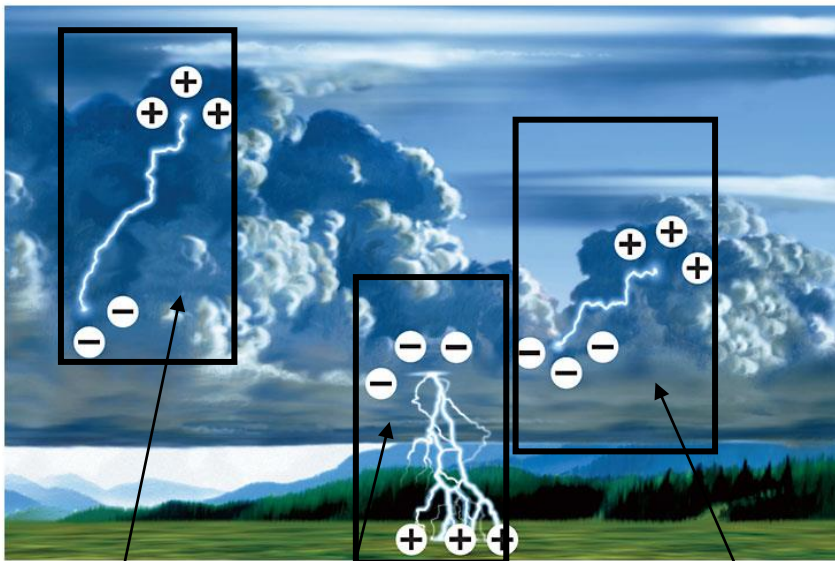
Small intense _____ systems that produce:

- _____
- _____
- _____
- _____ are called _____.

They mostly occur along _____ but can occur in other places. There are only _____ atmospheric conditions required to produce thunderstorms:

1. _____ near the Earth's surface
2. _____ atmosphere.

The atmosphere is _____ when the surrounding air is _____ that the _____ air mass.



Thunderstorms are very active _____.
 Lightning is an _____ discharge that occurs between a _____ charged area and _____ charged area.

Lightning can happen:

When lightning strikes _____ is released. This energy is _____ to the air and causes the air to _____ rapidly and send out _____ waves.

_____ is the sound that results from the _____ expansion of air along a lightning strike.

Severe _____ can produce one or more of the following:

- _____
- _____
- _____
- _____

Tornadoes (pg. 498-499)

_____ happen in only _____ of all thunderstorms. A tornado is a _____, _____ column of _____ that has _____ wind speeds and _____ central pressure and touches the _____.



1 Wind moving in two directions causes a layer of air in the middle to begin to spin like a roll of toilet paper.



2 The spinning column of air is turned to a vertical position by strong updrafts of air in the cumulonimbus cloud. The updrafts of air also begin to spin.



3 The spinning column of air moves to the bottom of the cumulonimbus cloud and forms a funnel cloud.



4 The funnel cloud becomes a tornado when it touches the ground.

A _____ starts as a _____ that pokes through the _____ of a cumulonimbus cloud and _____ in the air. The _____ cloud becomes a tornado when it makes _____ with Earth's _____.

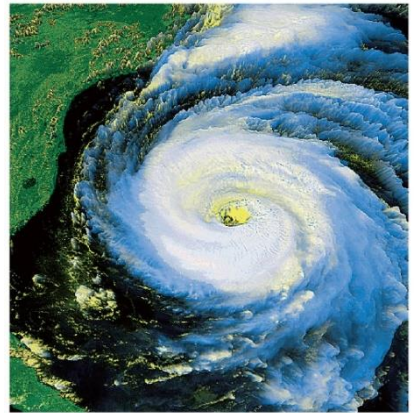
tornadoes occur in the _____.

About _____ of the world's

Most of these tornadoes happen in the _____ and _____ when _____, _____ air from _____ meets _____, _____ air from the _____.

Hurricanes (pg. 499-500)

A _____ rotating _____ weather system that has _____ speeds of at least _____ km/h is called a _____. Hurricanes are the most _____ storms on Earth. They have different _____ in different _____ of the world. In the Western _____ Ocean, hurricanes are called _____. Hurricanes that form over _____ The _____ Ocean are called _____.



Most hurricanes form in areas between _____ and _____ north latitude and between _____ and _____ south latitude, over _____, _____ oceans.

A hurricane begins as a group of _____ moving over _____ ocean waters. Winds traveling in two different _____ meet and cause the storm to _____. Because of the _____ effect the storm spins _____ in the Northern Hemisphere and _____ in the Southern Hemisphere.

A hurricane gets its _____ from the _____ of water vapor. Once formed the hurricane is fueled by _____ with the _____ ocean water.

Moisture is added to the warm air by _____ from the ocean. As the moist air _____ the water vapor _____ and releases

large amounts of _____. The hurricane continues to _____ as long as its source of _____, _____ air. When the hurricane moves into _____ waters or over _____ it begins to die, because it has _____ its source of _____.

