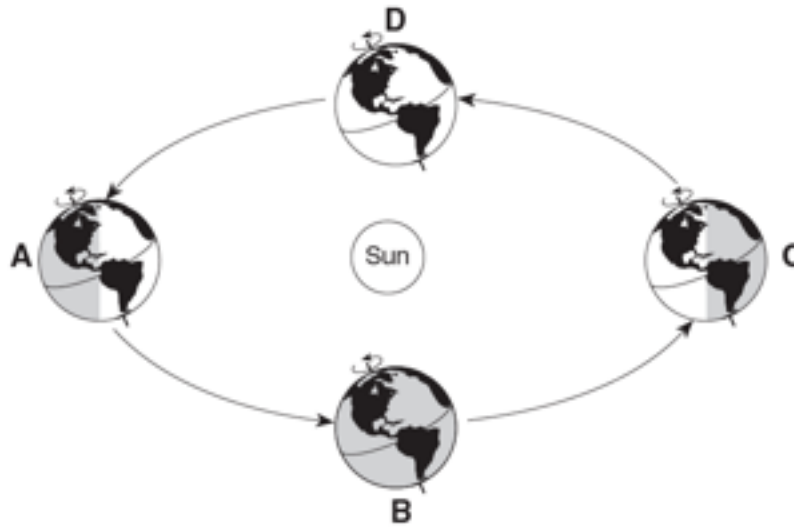
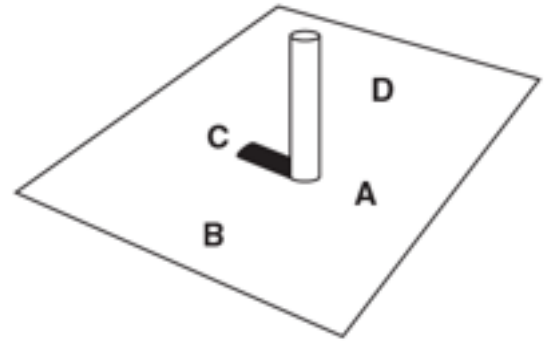
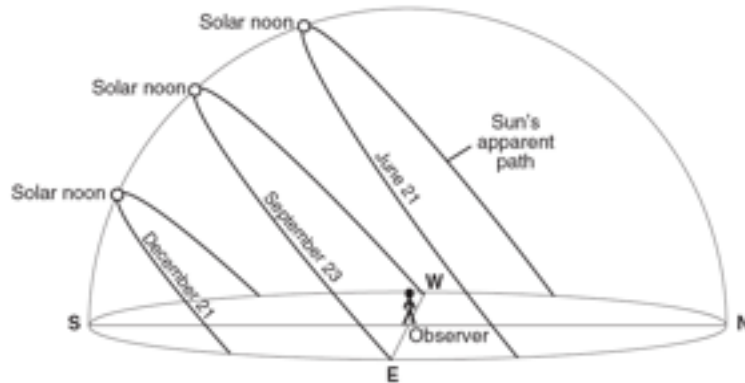


The Seasons

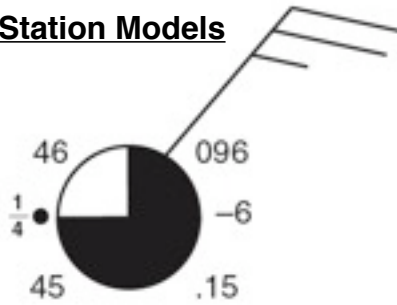


Description	Position	Description	Position
March 21st	B	South Pole-24 Hrs of Dark	C
June 21st	C	High Kinetic Energy	A
December 21st	A	Low Kinetic Energy	C
September 23rd	D	Earth Close to Sun	A
Northern Hemisphere Winter	A	Earth Far from Sun	C
Northern Hemisphere Spring	B	Southern Hemisphere Spring	D
North Hemisphere Summer	C	Southern Hemisphere Fall	B
Northern Hemisphere Fall	D	Southern Hemisphere Winter	C
Greatest Orbital Velocity	A	South Hemisphere Summer	A
Least Orbital Velocity	C	9 Hrs of Day in NYS	A
23 1/2 N-Zenith	C	12 Hrs of Day in NYS	D,B
0 (Equator)-Zenith	D,B	15 Hrs of Day in NYS	C
23 1/2 S-Zenith	A	Winter Solstice	A
North Pole-24 Hrs Day	C	Vernal Equinox	B
South Pole-24 Hrs Day	A	Autumnal Equinox	D
North Pole-24 Hrs Dark	A	Summer Solstice	C

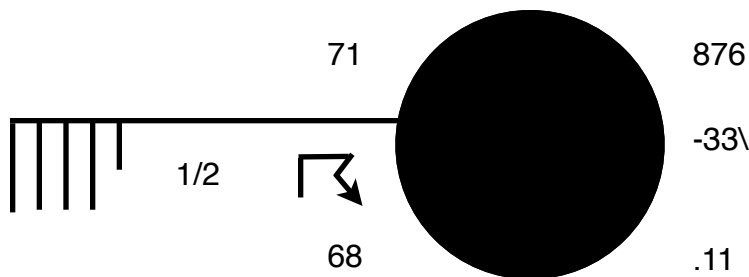
Sun's Path in NYS

1. What direction does the sun rise in summer? _____ NE _____
2. What direction does the sun rise in winter? _____ SE _____
3. What direction does the sun rise in fall/spring? _____ E _____
4. How long is the sun out in fall/spring? _____ 12 _____
5. How long is the sun out in winter? _____ 9 _____
6. How long is the sun out in summer? _____ 15 _____
7. What direction do you look to see the noon time sun? _____ S _____
8. What direction do you look to see polaris? _____ N _____
9. From sunrise to noon, what happens to the length of a shadow? _____ SMALLER _____
10. From noon to sunset, what happens to the length of a shadow? _____ LONGER _____
11. From sunrise to noon, what happens to the angle of insolation and intensity of insolation? _____ INCREASES _____
12. From noon to sunset, what happens to the angle of insolation and intensity of insolation? _____ DECREASES _____
13. What season does the sun have the greatest insolation? _____ SUMMER _____
14. What season does the sun have the least insolation? _____ WINTER _____
15. Does the sun ever reach the zenith in NYS? _____ NO _____
16. What direction does the sun set during winter? _____ SW _____
17. What direction does the sun set during fall/spring? _____ W _____
18. What direction does the sun set during summer? _____ NW _____
19. Does the sun physically move across the sky? _____ NO _____ Explain!
_____ ROTATION _____
20. From season to season, how many degrees does the noon time sun shift in the sky? _____ 23.5 _____
21. Why is it so cold in NY during winter? _____ TILT AWAY FROM SUN _____
22. Why is it so hot in NY during summer? _____ TILT TOWARDS THE SUN _____
23. Why does the sun shift its position along the horizon with the changing seasons?
_____ EARTH REVOLUTION _____
24. On the shadow diagram, what letter represents South? _____ A _____

Station Models

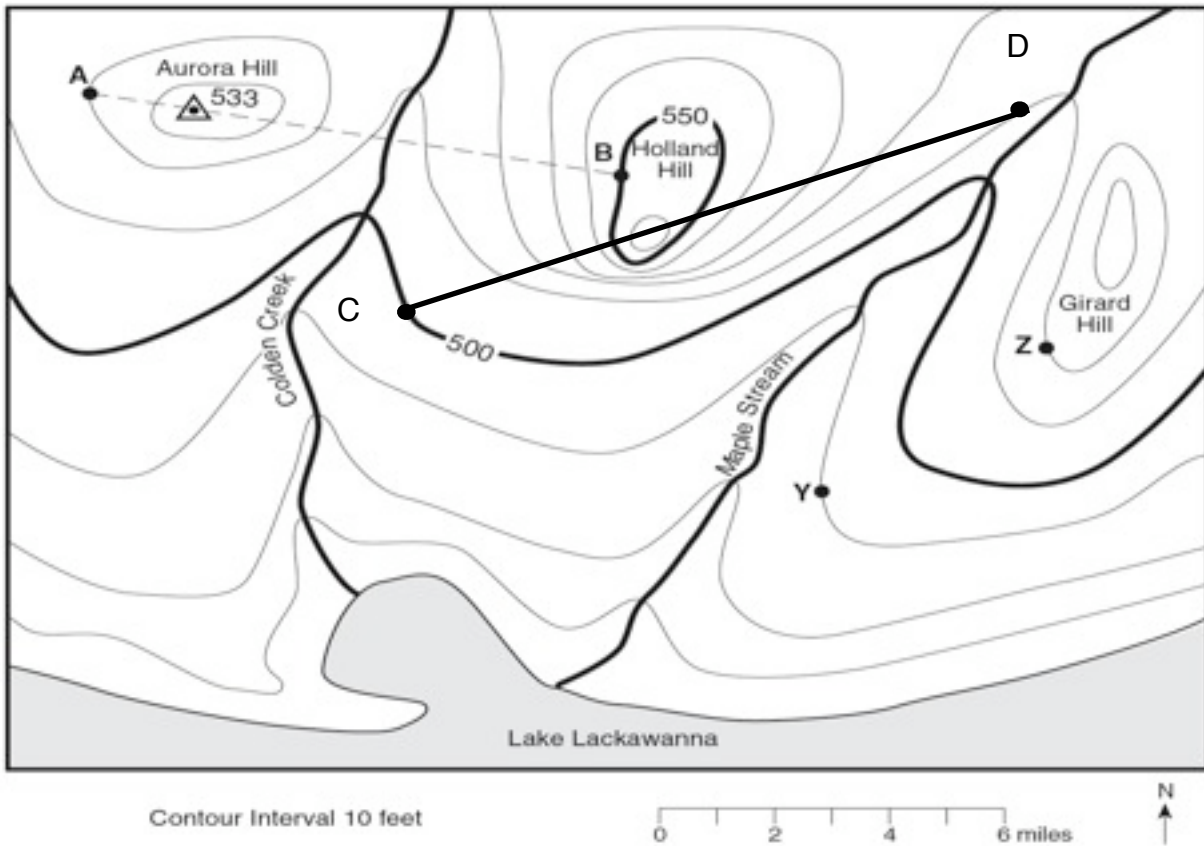


Variable	Variable
Temperature: 46 F	Dew Point: 45 F
Visibility: 1/4 MILE	Wind Speed: 25 KNOTS
Wind Direction: NE	Cloud Cover: 75%
Barometric Pressure: 1009.6 MB	Barometric Trend: FALLING 6.0 MB
Precipitation: .15 INCHES	Current Weather: RAIN

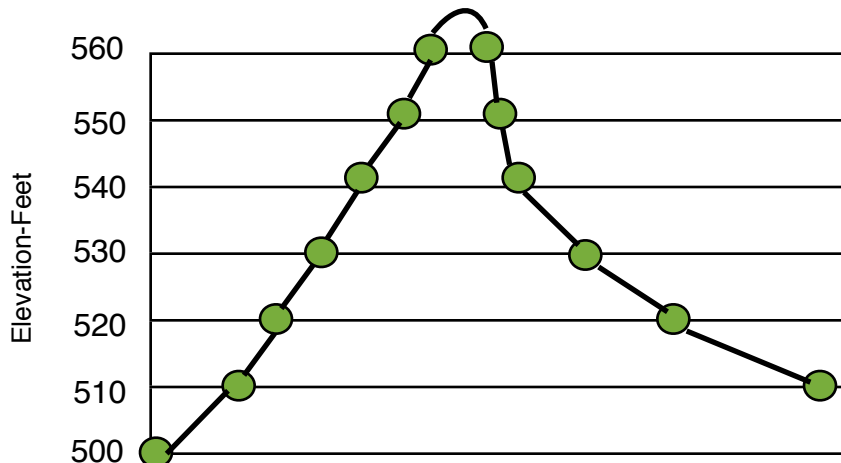


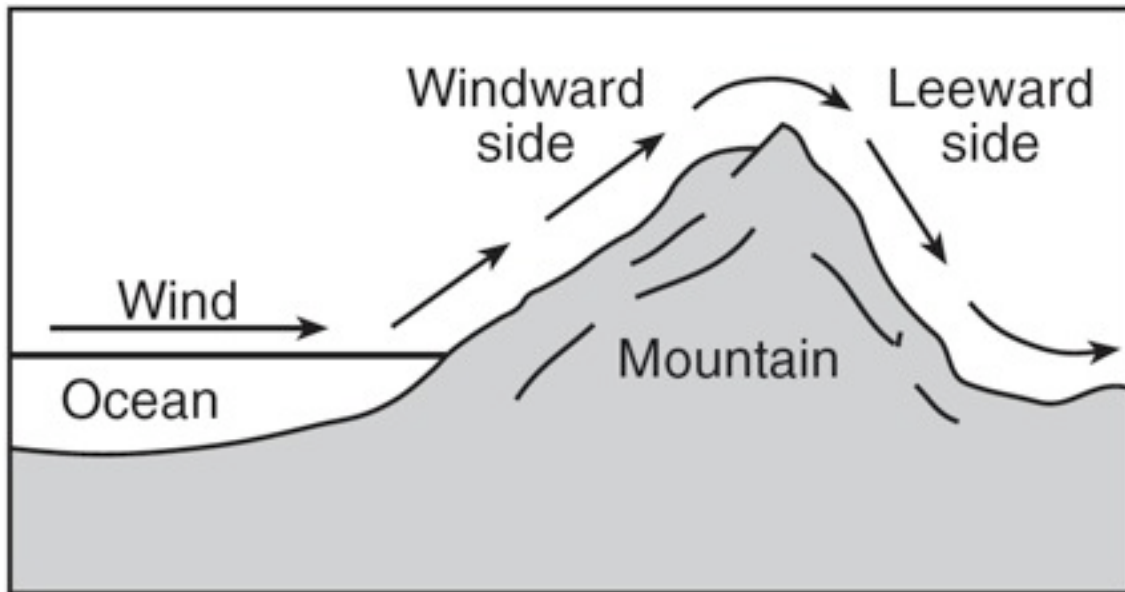
Variable	Variable
Temperature-71 F	Dew Point-68 F
Visibility-1/2 Mile	Wind Speed-45 Knots
Wind Direction-W	Current Weather-T-Storms
Cloud Cover-100%	Barometric Pressure-987.6 mb
Barometric Trend: -33\	Precipitation- 0.11 Inches

Topographic Maps





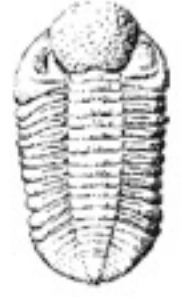
1. What is the direction of stream flow for Maple Stream? SW
2. Provide an evidence that supports your answer. RIVERS FLOW FROM HIGH ELEVATION TO LOW ELEVATION
3. What is the highest possible elevation of Girard Hill? 539FT
4. Determine the gradient between points A and B. 3.2 FT/MILE
5. Create a profile between points C and D



Orographic Lifting

1. What side of the mountain will get the majority of the precipitation? WINDWARD
2. Tell me what the temperature and humidity will be like on the Windward side?
WARM AND WET
3. What happens to the air mass as it begins to rise over the mountain? COOLS TO DEWPOINT
4. What temperature does the air mass cool to? DEWPOINT
5. As air rises, it cools and (expands or contracts)? EXPANDS
6. What phase change occurs as a cloud forms? CONDENSATION
7. When the air mass goes over the mountain, is the humidity high or low? HIGH
8. The Leeward side of the mountain has a phenomenon called "The RAIN Shadow Effect"
9. Tell me what the temperature and humidity will be like on the Leeward side?
DRY AND HOT
10. As air sinks on the Leeward side it will warm due to (expansion or contraction?)
CONTRACTION
11. What is orographic lifting? MTNS FORCE AIR TO RISE OVER IT
12. What is adiabatic temperature change?
TEMPERATURE CHANGE DUE TO PRESSURE CHANGE

Index Fossils

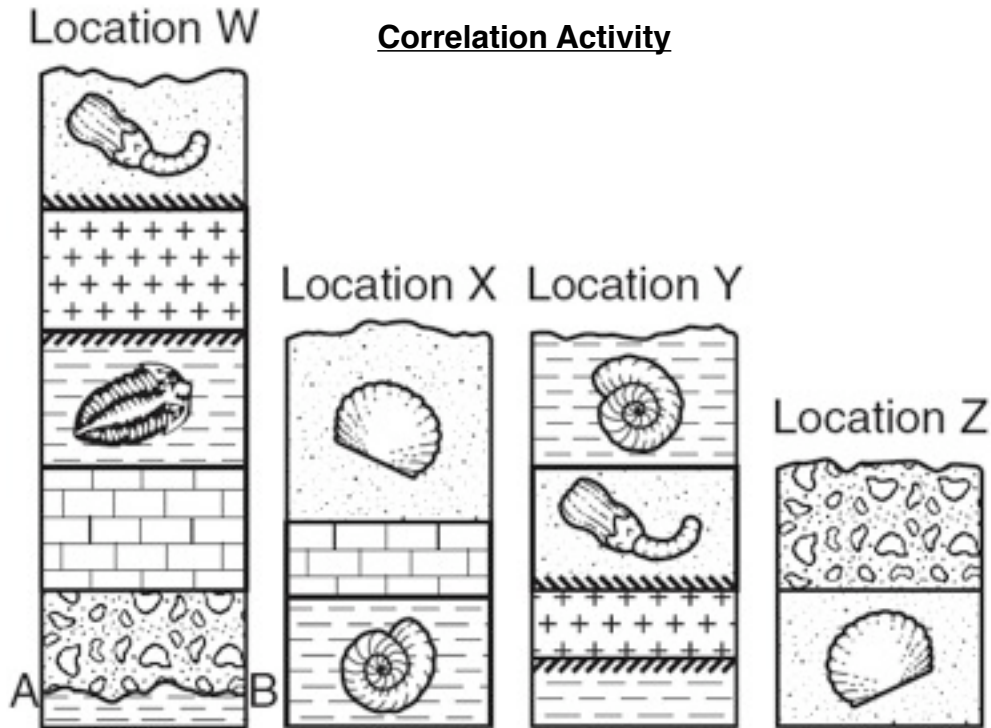
Table of Index Fossils		
		
Eospirifer	Manticoceras	Phacops

Identification	Eospirifer	Manticoceras	Phacops
Identification Letter	Y	G	C
Eon	PHANEROZOIC	PHANEROZOIC	PHANEROZOIC
Era	PALEOZOIC	PALEOZOIC	PALEOZOIC
Period	SILURIAN	DEVONIAN	DEVONIAN
Epoch	EARLY	MIDDLE	MIDDLE
Important Geo Event	SALT/GYPSUM	EROSION-ACADIAN	EROSION-ACADIAN
Landscape Where They Lived	ERIE-ONTARIO LOWLANDS	ALLEGHENY PLATEAU	ALLEGHENY PLATEAU

1. Why are index fossils important in determining age of rocks? _____KNOW AGE OF THE FOSSIL...YOU KNOW THE AGE OF THE ROCK_____

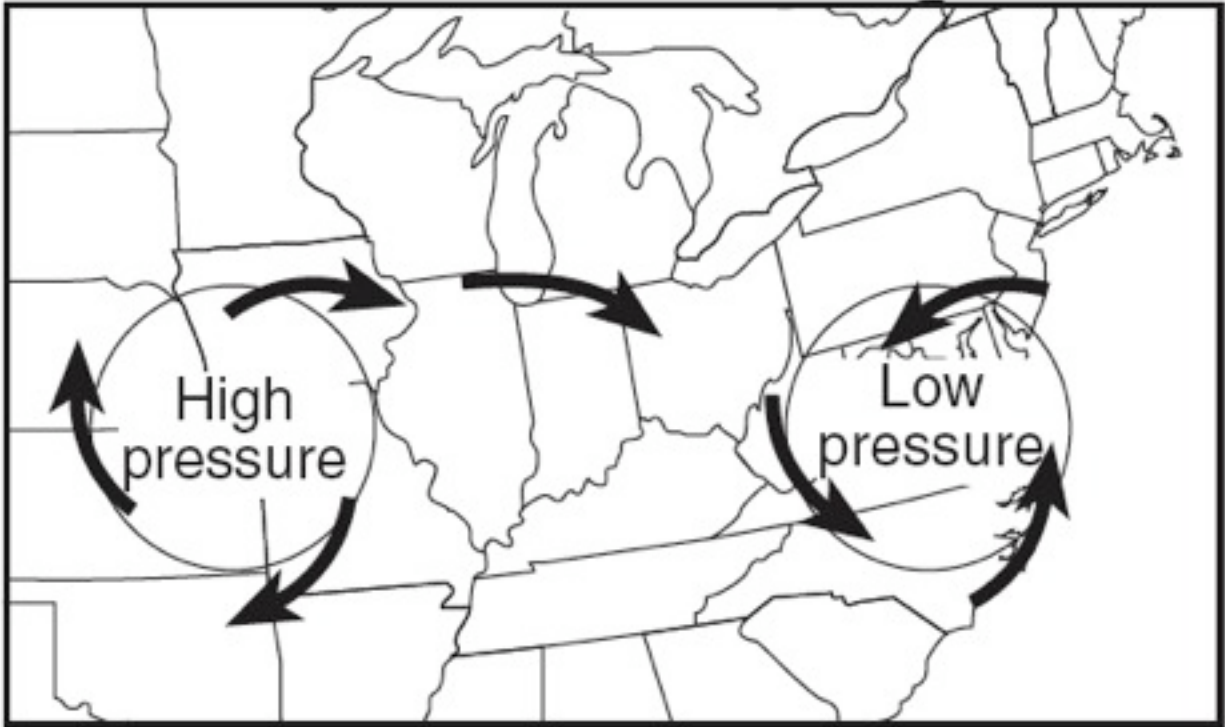
2. What are the 2 criteria that is special to an index fossil?
 _____LIVE FOR SHORT PERIOD OF TIME AND OVER A BIG AREA_____

3. What was another method discussed in class (very similar to index fossils) that helps geologists determine age of rocks? _____VOLCANIC ASH_____

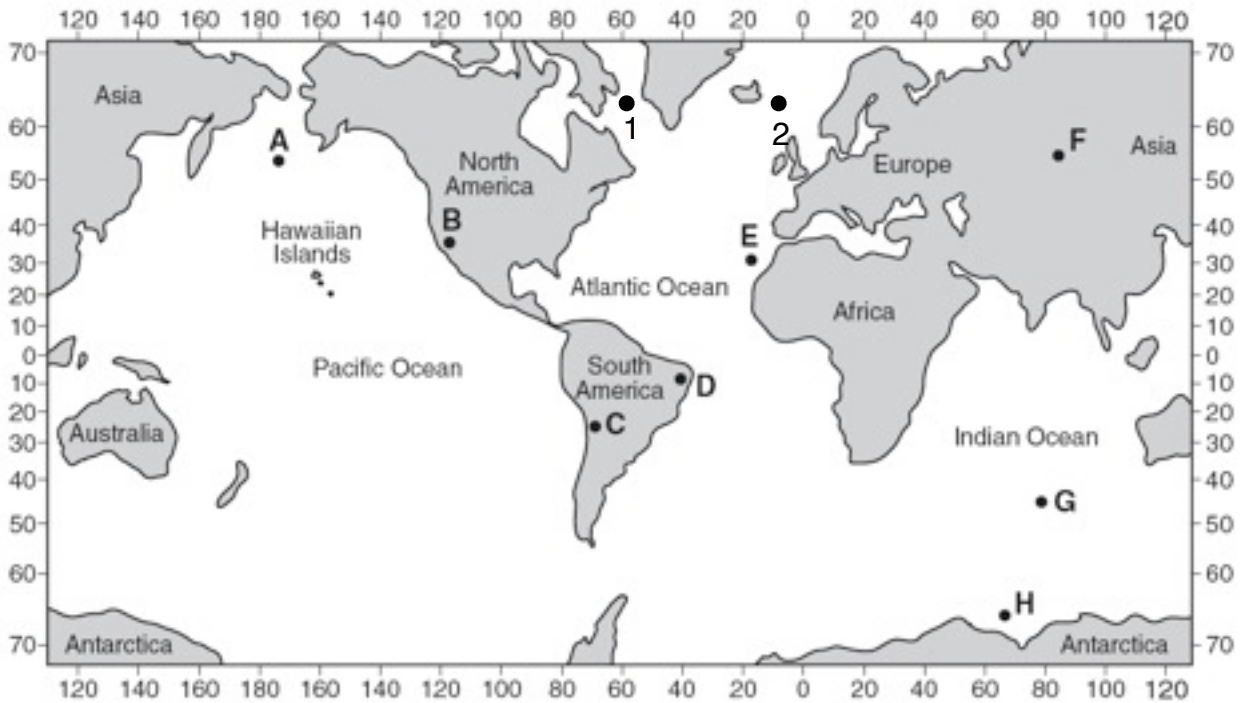


1. What rock layer is the oldest? _____ SHALE (LOCATION W) _____
2. What rock layer is the youngest? _____ CONGLOMERATE (LOCATION Z) _____
3. What are the steps in determining unconformity AB? _____ UPLIFT, WEATHERING, EROSION, DEPOSITION _____
4. What do the little lines coming off of the rock layers in locations W and Y represent? _____ CONTACT METAMORPHISM _____
5. What is younger in location W: Intrusion or shale? _____ INTRUSION _____
6. What is older in location X: Limestone or sandstone? _____ SHALE _____
7. What happened most recent: Intrusion or bottom layer of shale? INTRUSION
8. What happened first: Breccia or Sandstone? _____ SANDSTONE _____
9. In location Y, what rock would form at the contact point between the intrusion and the sandstone? _____ QUARTZITE _____

High and Low Pressure Characteristics

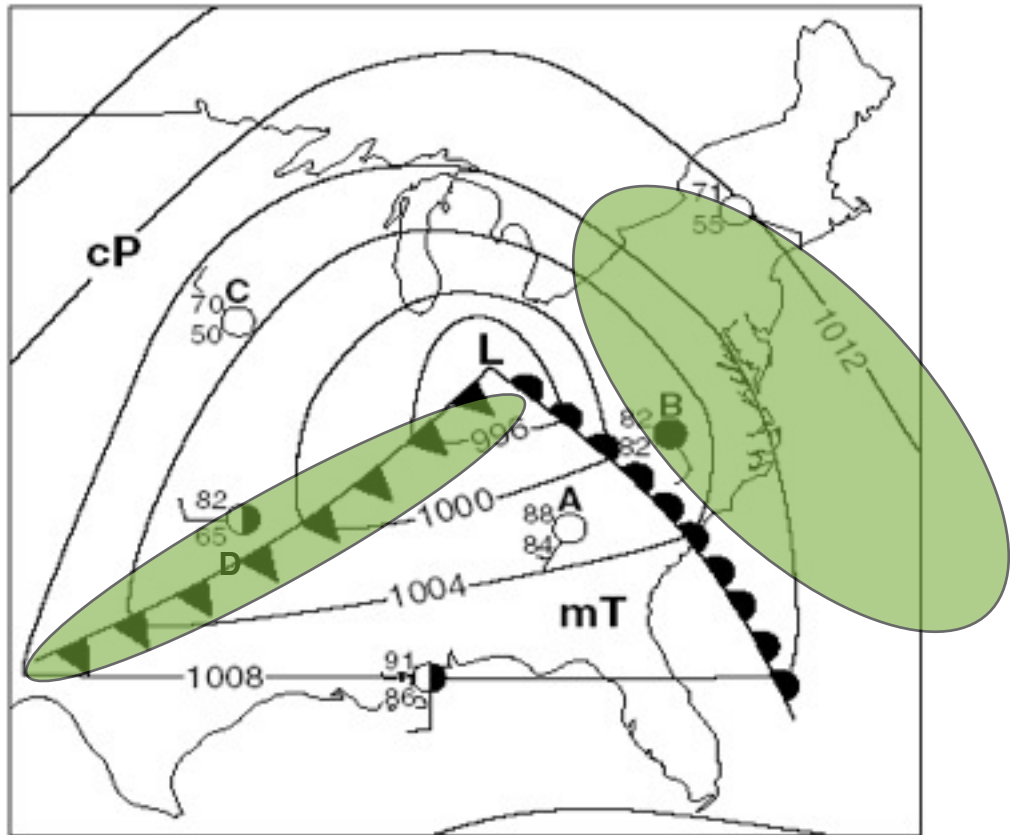


High Pressure Characteristics	Low Pressure Characteristics
<p> DRY CLOCKWISE SPIN OUTWARD COLD AIR SINKS DIVERGING AT THE SURFACE LITTLE MOISTURE GOOD WEATHER RELATIVELY NO CLOUDS MORE DENSE AIR </p>	<p> WET COUNTERCLOCKWISE SPIN INWARD WARM AIR RISES CONVERGING AT THE SURFACE LOTS OF MOISTURE BAD WEATHER LOTS OF CLOUDS LESS DENSE AIR </p>

Latitude and Longitude

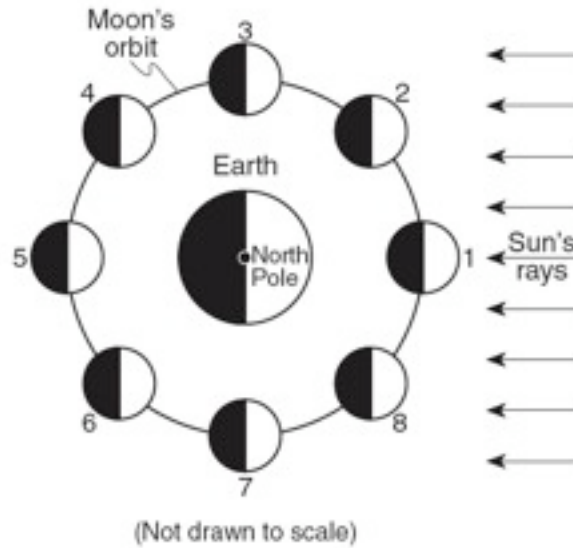
1. What is the latitude and longitude of point B? _____ 40N, 120W _____
2. What is the latitude and longitude of point C? _____ 30S, 70W _____
3. What is the latitude and longitude of point G? _____ 45S, 70E _____
4. How many degrees separates each time zone? _____ 15 DEGREES _____
5. How many degrees of longitude are in each time zone? _____ 15 DEGREES _____
6. As you go east, the time does _____ INCREASE _____
7. As you go west, the time gets _____ LESS _____
8. If its 6:00am at point 1, what time is it at point 2? _____ 9:00AM _____
9. If the altitude of polaris is 42 degrees, what is your latitude? _____ 42N _____
10. If your latitude is 61 degrees North, what is your altitude of polaris? _____ 61 _____
11. What is the altitude of polaris if you latitude is 41 degrees south? _____ NONE _____
12. What latitude gets the most direct sun on June 21st? _____ 23.5 N _____
13. What latitude gets the most direct sun on December 21st? _____ 23.5 S _____
14. What latitude gets the most direct sun on March 21st? _____ EQUATOR _____
15. What latitude gets the most direct sun on September 23rd? _____ EQUATOR _____

Weather Practice



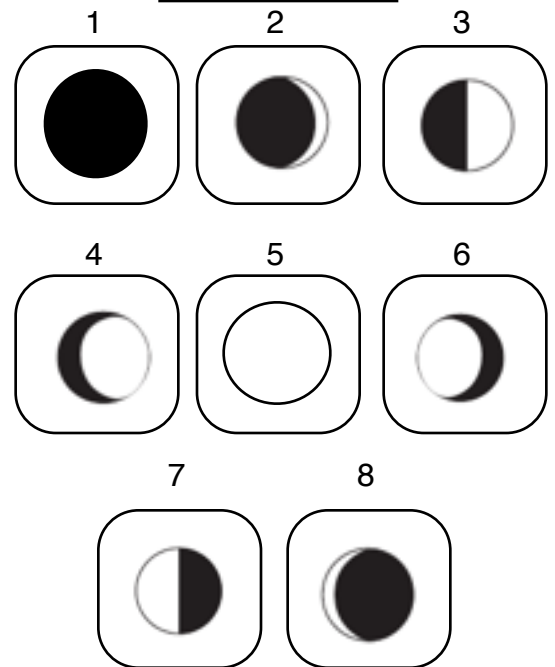
1. What is the name of the storm pictured above? _____ MID LATITUDE CYCLONE _____
2. Is Low pressure dry weather or wet weather? _____ WET _____
3. Draw in where the precipitation will be found for both the warm front and the cold front
4. Where does the mT airmass come from? _____ GULF OF MEXICO _____
5. Where does the cP airmass come from? _____ CANADA _____
6. In station model B, what does it mean when both the air temp and dew point temp are both 82° F?
_____ PRECIPITATION _____
7. What direction are the winds blowing around the low pressure? COUNTERCLOCKWISE /INWARD
8. What station model just experienced torrential rains and a tornado warning? _____ D _____
9. What station model has the driest air? _____ C _____
10. What station model is experiencing slow steady precipitation? _____ B _____
11. What station model has a slowly falling barometer? _____ B _____
12. What 2 station models have a flood warning with very dangerous lightning? _____ A _____
13. What happened the pressure of station model D over the past hour? _____ RISE _____
14. What direction will this low pressure center move over the next 24 hours? _____ NE _____

Moon Phases



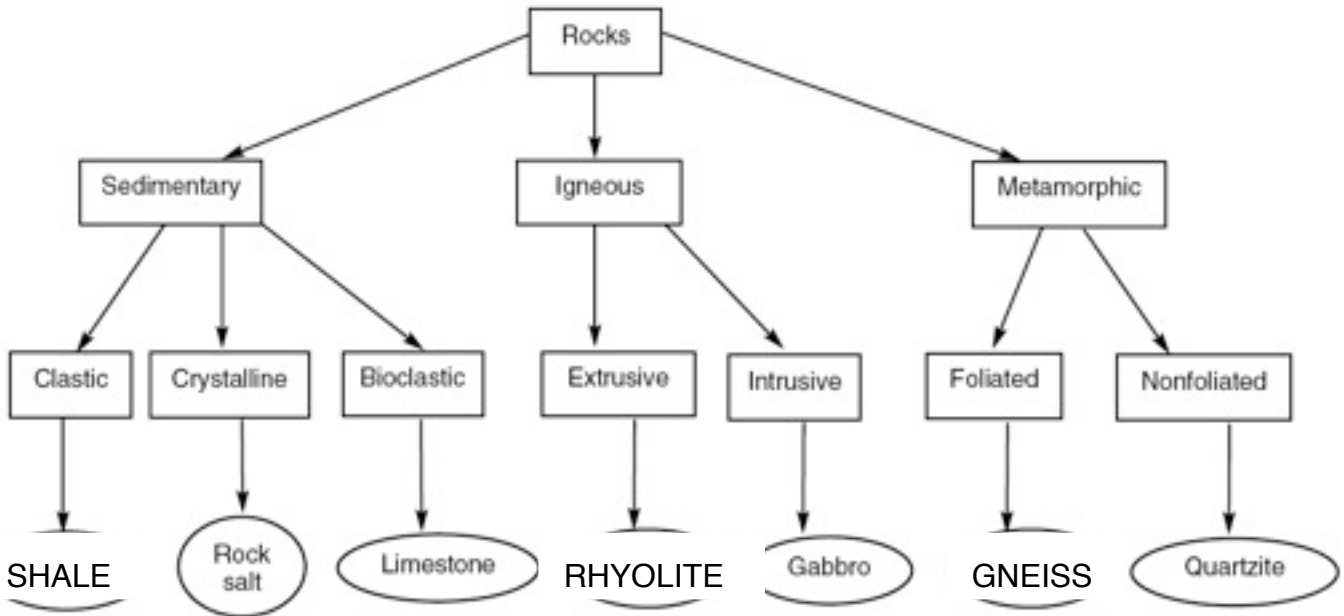
Draw the Phase

Moon Phase #	Name of the Phase
1	NEW MOON
2	WAXING CRESCENT
3	FIRST QUARTER
4	WAXING GIBBOUS
5	FULL MOON
6	WANING GIBBOUS
7	THIRD QUARTER
8	WANING CRESCENT

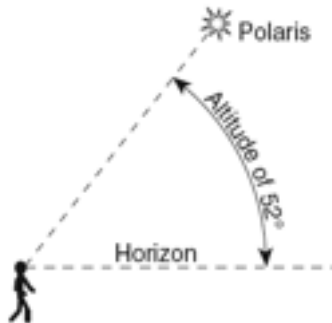


1. What 2 phases (name and number) provide a spring tide? _____ 1,5 _____
2. What 2 phases (name and number) provide a neap tide? _____ 3,7 _____
3. What phase (name and number) creates a solar eclipse? __NEW MOON 1__
4. What phase (name and number) creates a lunar eclipse? _FULL MOON 5_
5. Why do we see the same side of the moon every day?
 ___ROTATION=REVOLUTION_____
6. What motion causes the phases of the moon? ___REVOLUTION_____

Fill in the blanks from the flowcharts below.
Rock Classification Flowchart

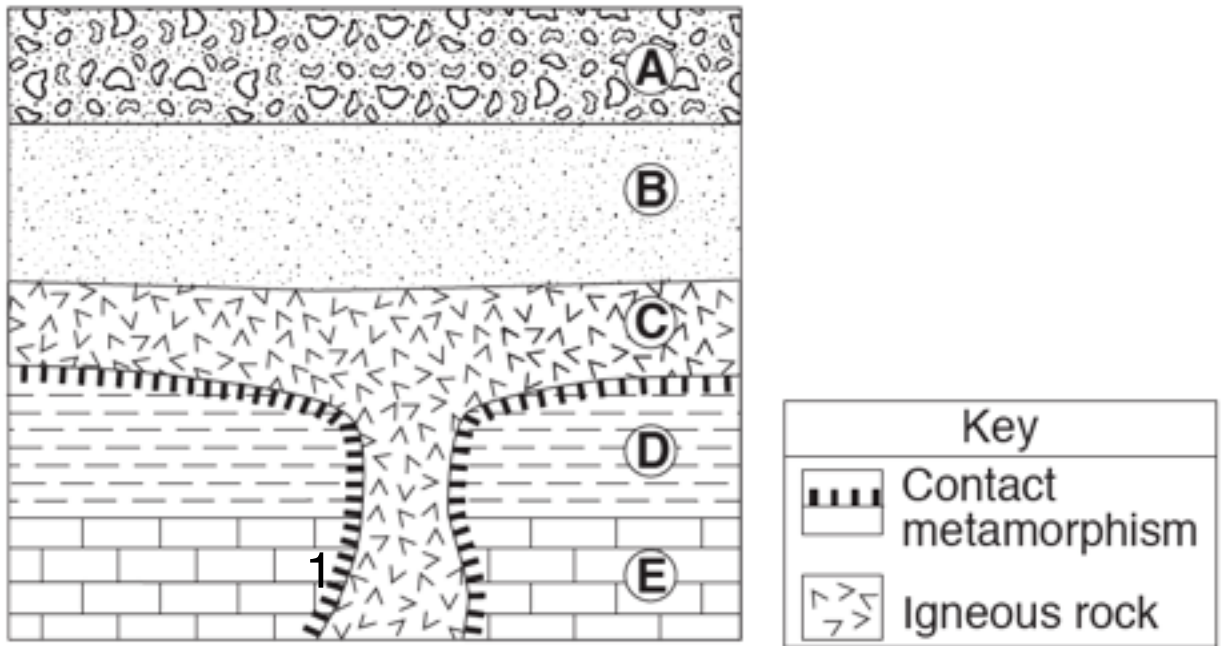


Altitude of Polaris



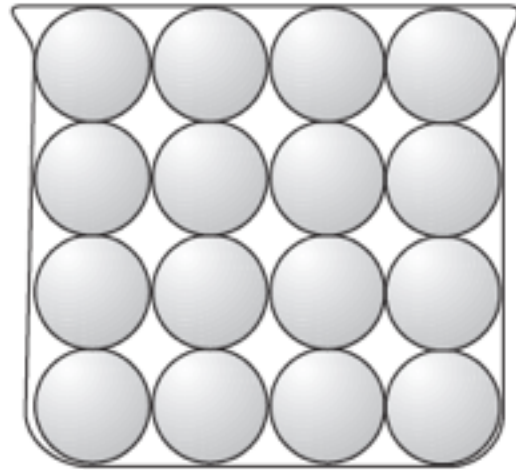
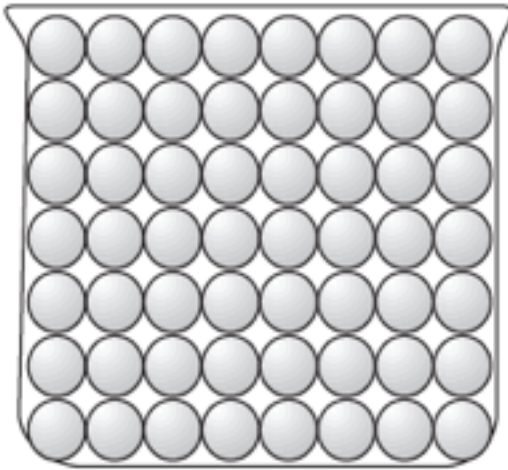
1. What is the latitude of the observer? _____ 52N _____
2. Can you see Polaris in the southern hemisphere? _____ NO _____
3. What is the point directly above the observer called? _____ ZENITH _____
4. As your latitude increases, what happens to your altitude of Polaris? _INCREASE_____
5. What type of relationship is that called? _____ DIRECT _____
6. If one travels from NY to Chicago, what happens to their altitude of Polaris? _SAME_____

Sequence of Events



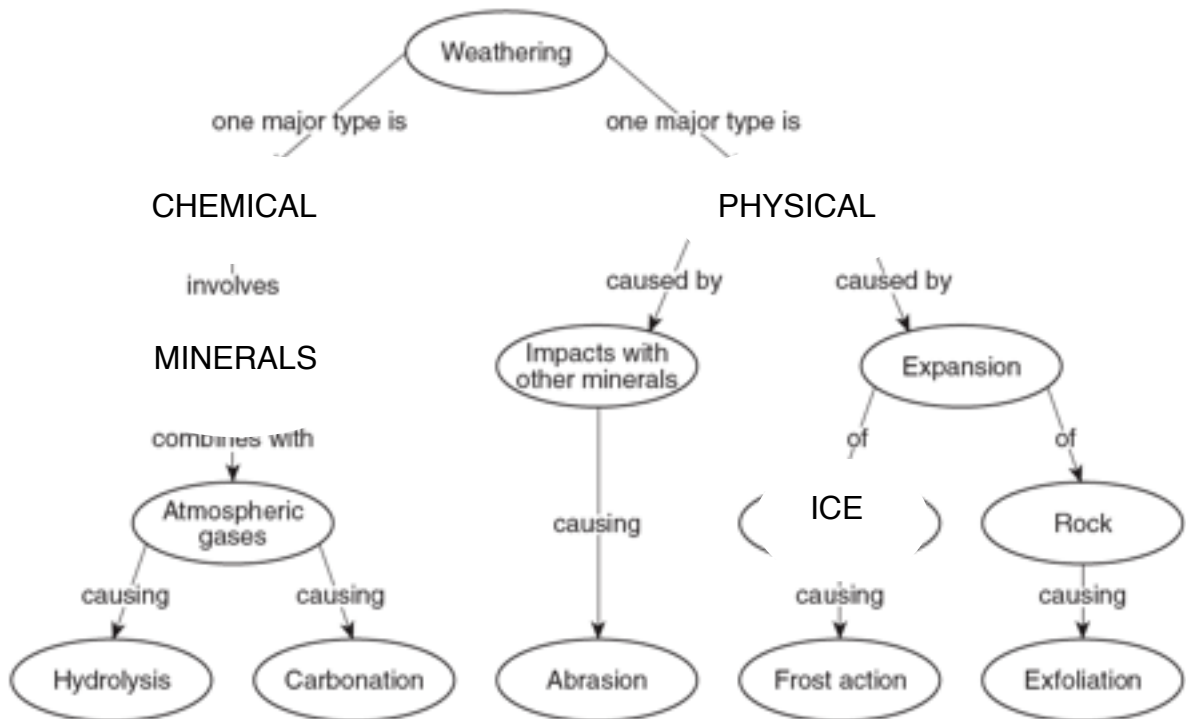
1. What layer of rock is the youngest? _____ A _____
2. What layer of rock happened most recently? _____ A _____
3. What layer of rock is the oldest? _____ E _____
4. Which is older...Shale or the Intrusion? _____ SHALE _____
5. Name the rock found at point 1? _____ MARBLE _____
6. Put the above sequence in order from oldest to youngest
 - a. _____ LIMESTONE _____
 - b. _____ SHALE _____
 - c. _____ INTRUSION _____
 - d. _____ EXTRUSION _____
 - e. _____ SANDSTONE _____
 - f. _____ CONGLOMERATE _____

Porosity, Permeability, Capillarity



1. Which sample has the greatest porosity? EQUAL
2. Which sample has the greatest permeability? LARGE
3. Which sample has the greatest capillarity? SMALL
4. Which sample will have the lowest permeability rate? SMALL
5. Which sample will have the fastest infiltration time? LARGE
6. Which sample has the greatest surface area? SMALL

Weathering Flow Chart



Earthquake Practice

A seismic station located at point A is 5400 kilometers away from the epicenter of the earthquake. If the arrival time for the *P*-wave at point A was 2:00 p.m., the arrival time for the *S*-wave at point A was approximately

- (1) 1:53 p.m. (3) 2:09 p.m.
(2) 2:07 p.m. (4) 2:16 p.m.

A seismograph station recorded the arrival of the first *P*-wave at 7:32 p.m. from an earthquake that occurred 4000 kilometers away. What time was it at the station when the earthquake occurred?

- (1) 7:20 p.m. (3) 7:32 p.m.
(2) 7:25 p.m. (4) 7:39 p.m.

A seismic station 4000 kilometers from the epicenter of an earthquake records the arrival time of the first *P*-wave at 10:00:00. At what time did the first *S*-wave arrive at this station?

- (1) 9:55:00 (3) 10:07:05
(2) 10:05:40 (4) 10:12:40

The first *S*-wave arrived at a seismograph station 11 minutes after an earthquake occurred. How long after the arrival of the first *P*-wave did this first *S*-wave arrive?

- (1) 3 min 15 s (3) 6 min 05 s
(2) 4 min 55 s (4) 9 min 00 s

A seismic station is recording the seismic waves produced by an earthquake that occurred 4200 kilometers away. Approximately how long after the arrival of the first *P*-wave will the first *S*-wave arrive?

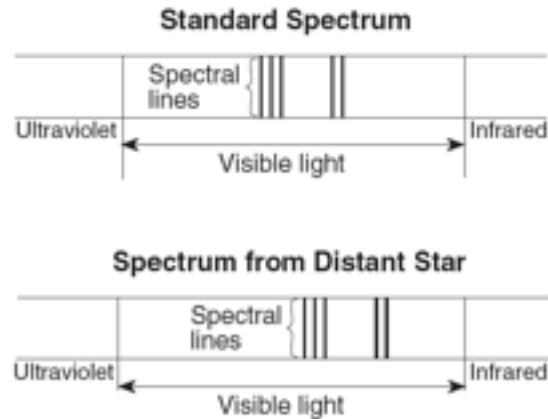
- (1) 1 min 05 sec (3) 7 min 20 sec
(2) 5 min 50 sec (4) 13 min 10 sec

An earthquake's first *P*-wave arrives at a seismic station at 12:00:00. This *P*-wave has traveled 6000 kilometers from the epicenter. At what time will the first *S*-wave from the same earthquake arrive at the seismic station?

- (1) 11:52:20 (3) 12:09:20
(2) 12:07:40 (4) 12:17:00

The distance from Albany, New York, to the epicenter of this earthquake is 5600 km. Approximately how much longer did it take for the *S*-wave to arrive at Albany than the *P*-wave?

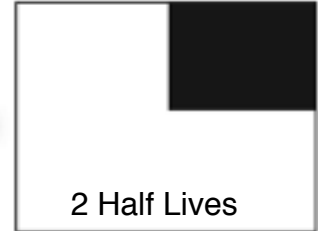
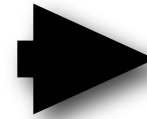
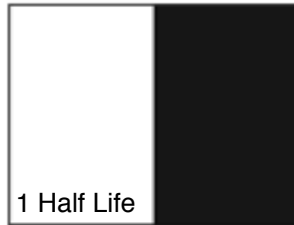
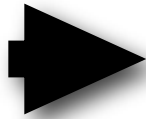
- (1) 4 minutes and 20 seconds (3) 9 minutes and 0 seconds
(2) 7 minutes and 10 seconds (4) 16 minutes and 10 seconds

Doppler Effect-Red Shift/Blue Shift

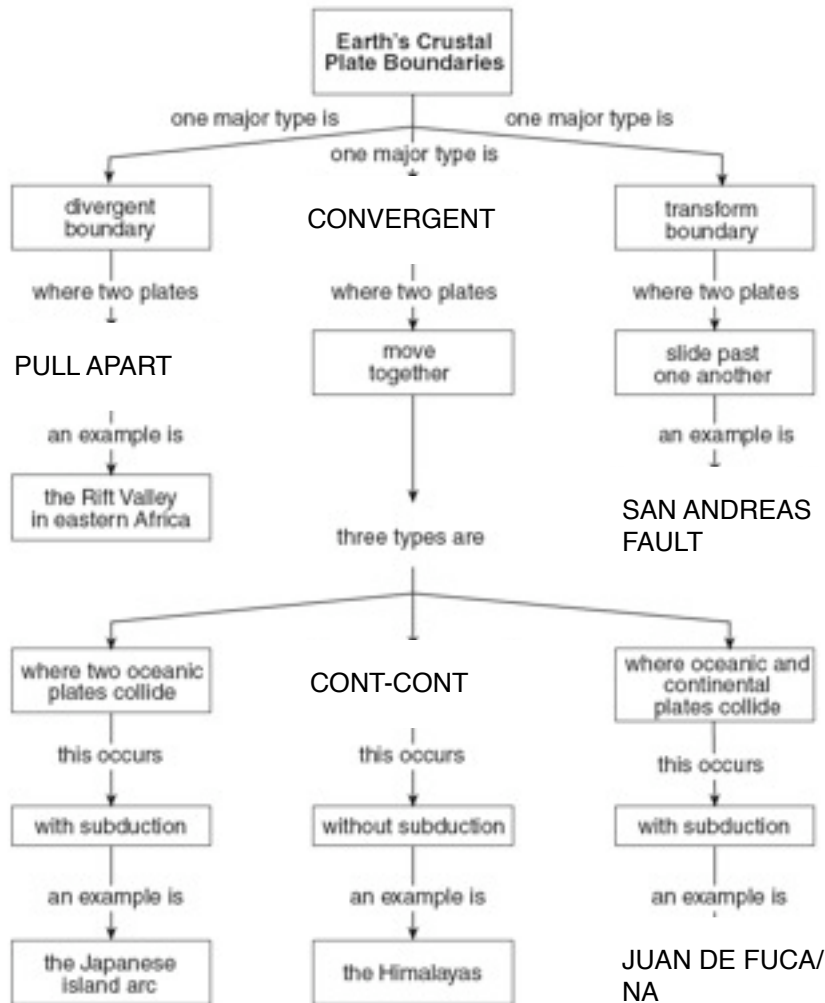
1. The doppler effect supports the idea that the universe is EXPANDING
2. Red shifts support the idea that objects are moving AWAY
3. Blue shifts support the idea that objects are moving TOWARDS
4. How long ago did the Big Bang occur? 13.7 BILLION YEARS
5. Infrared Radiation is on what side of the spectrum? RIGHT
6. Ultraviolet Radiation is on what side of the spectrum? LEFT
7. The Red end of the spectrum is (long or short) wavelength? LONG
8. The Blue end of the spectrum is (long or short) wavelength? SHORT
9. What is the name of the galaxy that we live in? MILK WAY
10. What type of galaxy do we live in? SPIRAL
11. The farther an object is red-shifted, what do we know about it's distance?
FARTHER AWAY
12. The farther an object is red-shifted, what do we know about it's speed?
TRAVELING FASTER

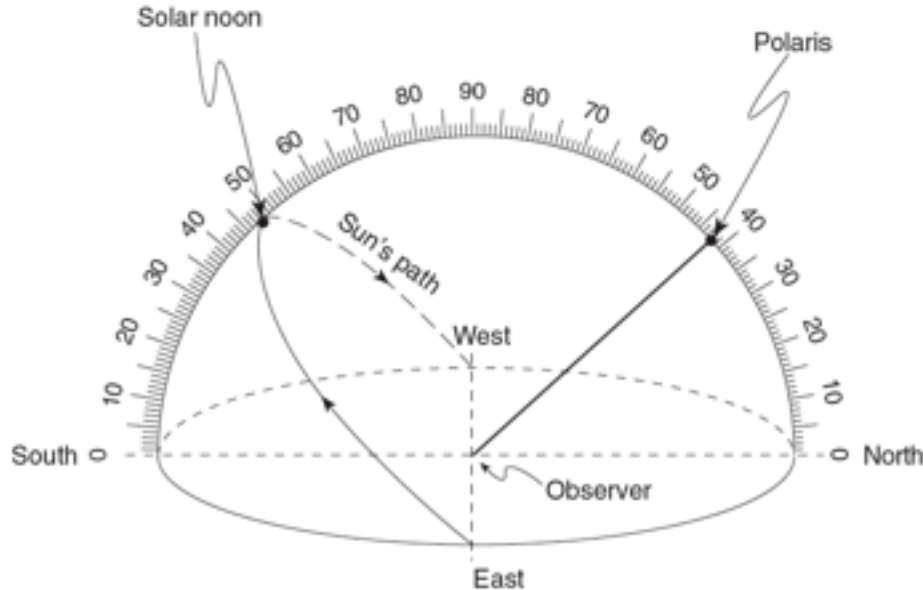
Radioactive Decay

Sample before decay

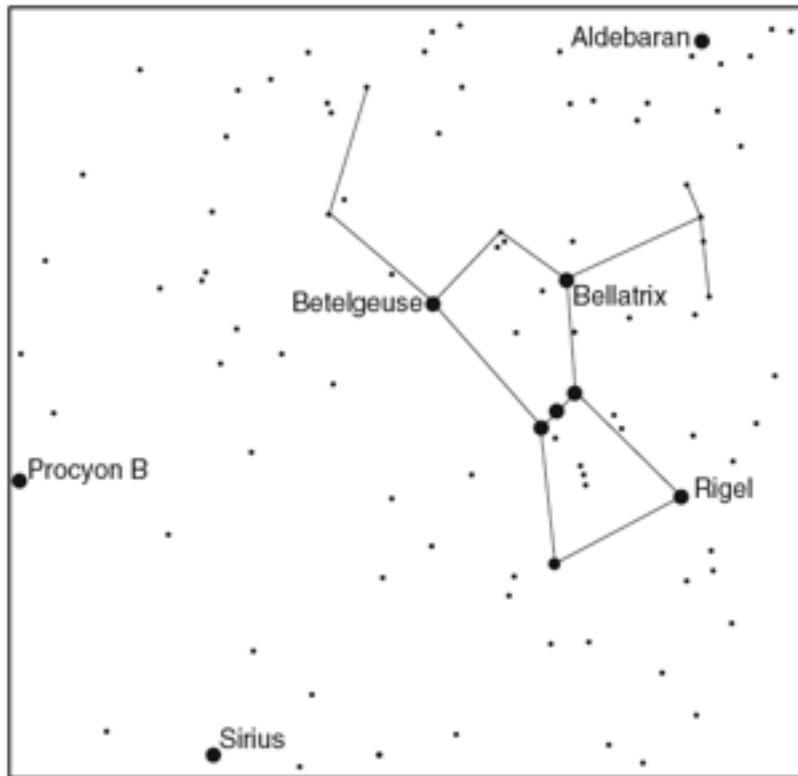


1. If the half life above is 5700 years, how many years have gone by? 11,400YRS
2. In the example above, what percentage of original sample is left? 25%
3. What isotope is used to date young, organic material? CARBON 14
4. Name an isotope used to date a trilobite fossil? POTASSIUM 40
5. In the above example, if you start out with 1000 g of K40, how much Ar40 is left after 2 half lives? 250G
6. In the previous example, how many years have passed over 2 half lives? 2.6 BY



Sun's Path and Altitude of Polaris

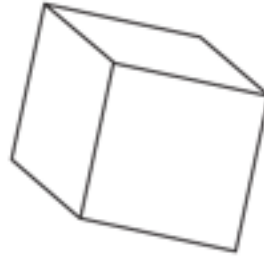
1. What season is shown in the diagram above? _____ FALL/SPRING _____
2. What is the altitude of the noon sun? _____ 48 _____
3. What direction would the noon shadow of the observer point? _____ NORTH _____
4. What is the altitude of Polaris? _____ 42 _____
5. Name a city in NYS that would see Polaris at this altitude? _____ ELMIRA _____
6. What would the altitude of the noon sun be in Summer? _____ 71.5 _____
7. What is the zenith? _____ POINT DIRECTLY ABOVE OBSERVER _____
8. Does the noon sun ever reach the zenith in NYS? _____ NO _____
9. Explain why the zenith is never reached in NYS. _____ NY NOT IN THE TROPICS _____
10. What happens to the length of the shadow from sunrise to noon? _____ DECREASES _____
11. What happens to the length of the shadow from noon to sunset? _____ INCREASES _____
12. What season has the longest noon shadow? _____ WINTER _____
13. What season has the greatest angle of insolation? _____ SUMMER _____
14. What season has the shortest noon shadow? _____ SUMMER _____
15. What season has the lowest angle of insolation? _____ WINTER _____

Stars

1. What is the luminosity and temperature of Betelgeuse?
500,000 X BRIGHTER/3500C
2. What is the temperature and luminosity of Rigel?
____400,000X BRIGHTER/12,000C_____
3. What is the name of the reaction that produces light within a star? __FUSION____
4. What is the "fuel" of the sun? _____HYDROGEN_____
5. The majority of stars fit into what category? __MAIN SEQUENCE_____
6. Our own sun is considered a (what group of star?) _MAIN SEQUENCE_____
7. In 5 billion years, our sun is going to turn into a ___RED GIANT_____
8. We can see Orion in December...why can't we see Orion in June?
_____EARTH REVOLVES AROUND THE SUN_____
9. What color star is Sirius? ___WHITE/BLUE-WHITE_____
10. What group of stars does Aldebaran belong to? ___GIANT_____

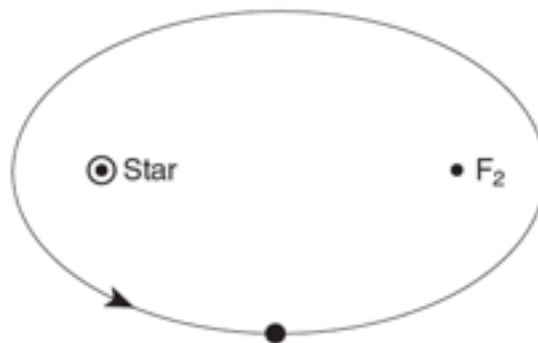
Minerals

Quartz

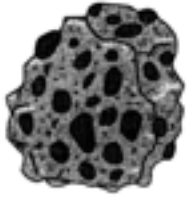


Halite

1. What is the hardness and composition of quartz? _____ 7/SIO₂_____
2. What is the luster and form of breakage of halite? ___NONMETALLIC/CLEAVAGE___
3. What makes quartz different from halite? _INTERNAL ARRANGEMENT OF ATOMS_
4. What mineral has a metallic luster, hardness of 6.5 and is a brassy yellow color?
_____PYRITE_____
5. What mineral has a non-metallic luster, has cleavage and bubbles with acid?
_____CALCITE_____
6. What mineral has a greasy feel and and is used in ceramics? ___TALC_____

Eccentricity

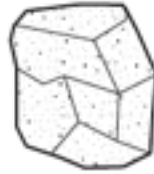
1. What is the eccentricity of this ellipse? _____0.672_____
2. When the planet gets close to the star, what happens to the velocity? _INCREASES_
3. The more elliptical this ellipse gets...what happens to eccentriciy? _GETS HIGHER_
4. Low eccentricity is what shape orbit....round or oval? ___ROUND___

Sedimentary Rocks**A**

Conglomerate

**B**

Breccia

**C**

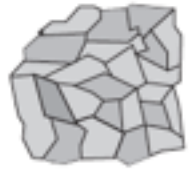
Sandstone

**D**

Shale

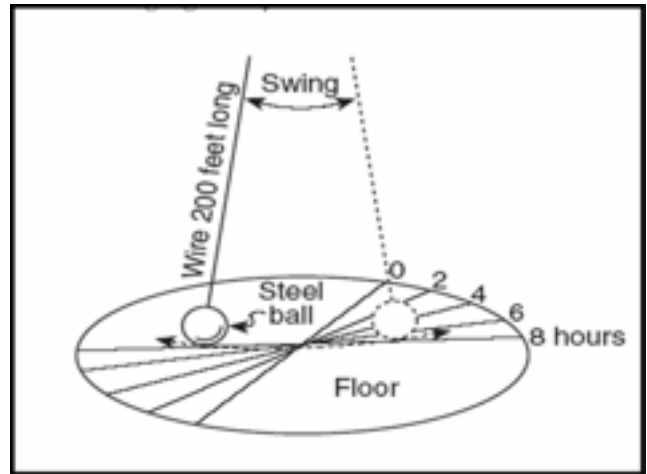
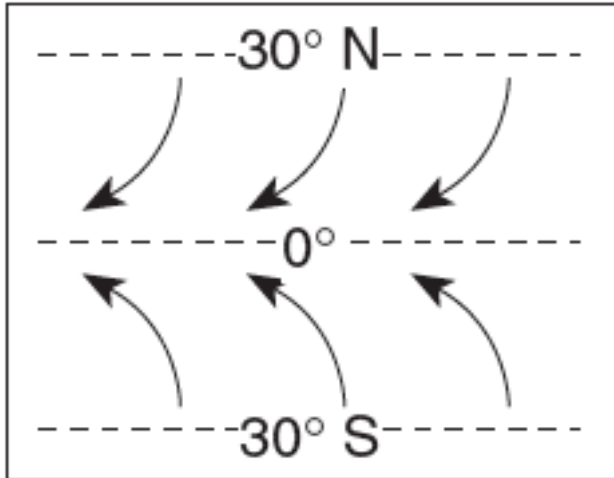
**E**

Limestone

**F**

Rock salt

- Which rocks above are clastic? _____A,B,C,D_____
- Which rock is organic? _____E-LIMESTONE_____
- Which rock is a chemical rock? _____F-ROCK SALT_____
- What are the 2 ways a chemical rock can form? _PRECIPITATION/EVAPORATION_
- Describe the process for the formation of a clastic rock?
WEATHERING/EROSION/DEPOSITION/COMPRESSION/COMPACTION/LITHIFICATION
- What is the particle size for a sandstone rock? _____0.006-0.2CM_____
- What is the difference between a conglomerate and breccia rock?
_____ANGLED/ROUNDED FRAGMENTS_____
- Which rock had particles that traveled further....conglomerate or breccia?
CONGLOMERATE-ROUNDED FRAGMENTS
- Which rock is made of particles with a diameter of 0.006-0.2cm? _SANDSTONE_
- Which bioclastic rock is made from dead plants? __BITUMINOUS COAL_____
- What is the composition of rock gypsum? _____GYPSUM_____
- How are clastic sedimentary rocks classified? _____GRAIN SIZE_____
- How are chemical rocks classified? _____COMPOSITION_____

Earth Rotation

1. The Earth rotates in what direction? _____ COUNTERCLOCKWISE _____
2. What direction do wind and water currents deflect towards in the northern hemisphere? _____ RIGHT _____
3. What direction do wind and water currents deflect towards in the southern hemisphere? _____ LEFT _____
4. The coriolis effect is caused by what? ___ EARTH ROTATION _____
5. The Foucault Pendulum supports the idea that the Earth does what? _ ROTATES _
6. The Earth rotates how many degrees per hour? _____ 15 DEGREES _____
7. What does rotation give us on the planet? _____ DAY/NIGHT _____
8. What does revolution give us on the planet? _____ SEASONS _____

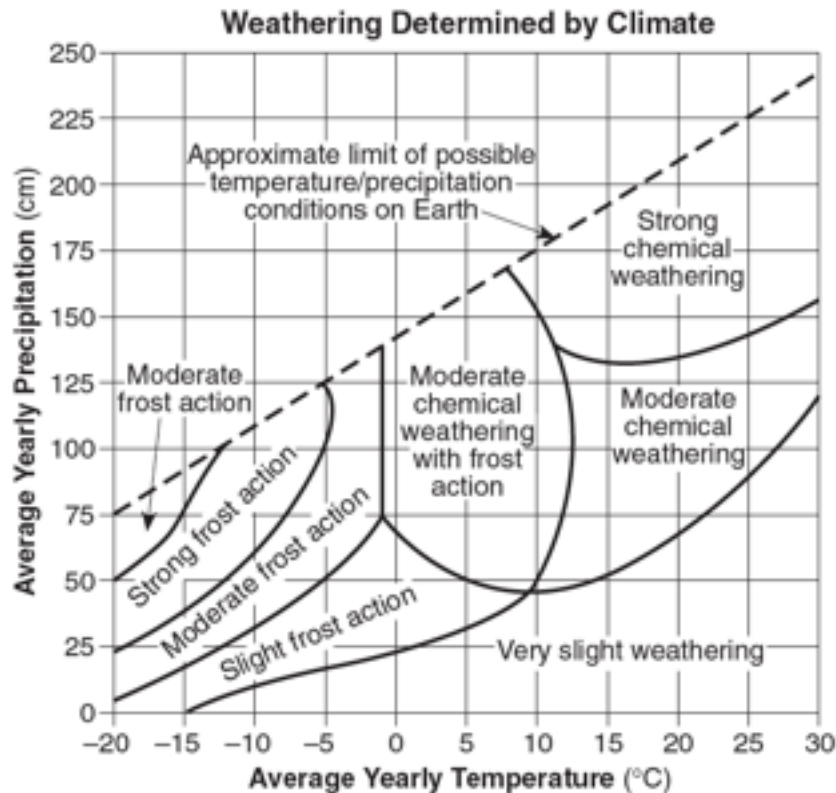
Metamorphic Rocks**Metamorphic**

1. What rock is shown in the picture above? _____ GNEISS _____
2. What 2 processes produce a metamorphic rock? _____ HEAT/PRESSURE _____
3. What does foliation mean? _____ MINERAL ALIGNMENT _____
4. What type of foliation does Gneiss show? _____ BANDING _____
5. What are the 2 types of metamorphism? _____ REGIONAL/CONTACT _____
6. What sedimentary rock forms into Anthracite Coal? _____ BITUMINOUS COAL _____
7. What sedimentary rock forms into Quartzite? _____ SANDSTONE _____
8. What sedimentary rock forms into Marble? _____ LIMESTONE _____
9. What metamorphic rock shows the lowest grade of metamorphism? _____ SLATE _____
10. What metamorphic rock shows the highest grade of metamorphism? _____ GNEISS _____
11. How are nonfoliated rocks classified? _____ COMPOSITION _____
12. What metamorphic rock is made of platy mica crystals? _____ SCHIST _____
13. What metamorphic rock can be made from various other rocks through the contact of magma? _____ HORNFELS _____
14. What metamorphic rock is made from shale? _____ SLATE _____

Igneous Rocks**Igneous**

1. What 2 processes produce an igneous rock? MELTING/SOLIDIFICATION
2. Rocks that form inside the earth are....intrusive or extrusive? INTRUSIVE
3. Rocks that form at or near the surface are...intrusive or extrusive? EXTRUSIVE
4. Igneous rocks are classified how? TEXTURE
5. Very coarse rocks are created where? INSIDE THE EARTH
6. What is the color, density and composition of Granite?
LIGHT/LOW AND FELSIC
7. What is the color, density and composition of Basalt?
DARK/HIGH AND MAFIC
8. Name a coarse grained rock that contains the mineral pyroxene? GABBRO
9. Name a vesicular rock that is glassy and floats in water? PUMICE
10. Name an igneous rock that contains a lot of quartz? GRANITE
11. Rocks that have large crystals formed....quickly or slowly? SLOW
12. Rocks that have very small crystals formed...quickly or slowly? QUICK
13. How are the crystals described with igneous rocks? INTERLOCKING

Weathering Conditions



1. Describe the climate needed for chemical weathering to be dominant.

_____WET AND HOT_____

2. Describe the climate needed for physical weathering to be dominant.

___WET AND TEMPS ABOVE/BELOW FREEZING_____

3. Provide a few examples of physical weathering. ___FROST ACTION_____

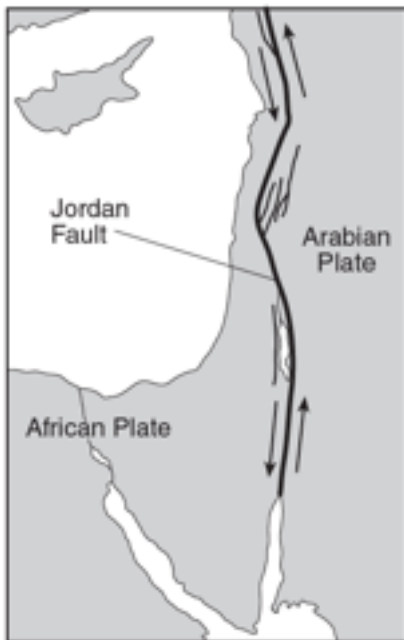
4. Provide a few examples of chemical weathering. ___CARBONATION_____

5. Describe what a chemical weathering landscape would look like.

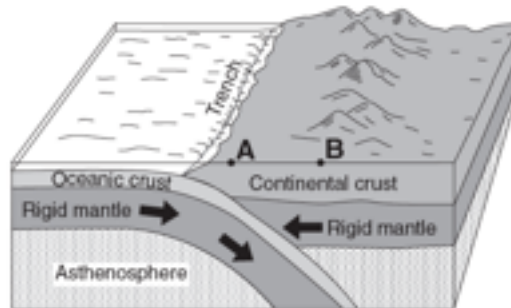
___ROUNDED HILLS, THICK VEGETATION, THICK SOIL_____

6. Describe what a physical weathering landscape would look like.

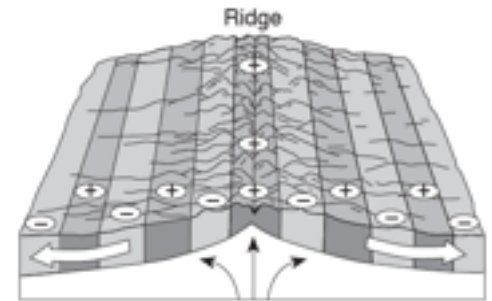
___STEEP, SHARP CLIFFS, THIN SOIL, NO VEGETATION_____

Plate Boundary Diagrams

A

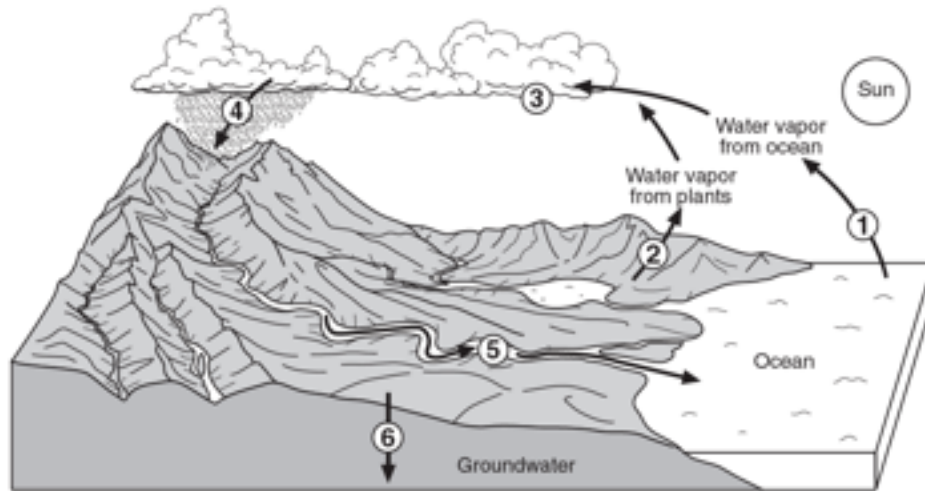


B



C

1. Name the type of plate boundary for diagram A TRANSFORM
2. Name the type of plate boundary for diagram B CONVERGENT
3. Name the type of plate boundary for diagram C DIVERGENT
4. Provide an example from your reference table where you would find diagram A.
SAN ANDREAS FAULT
5. Provide an example from your reference table where you would find diagram B.
NAZCA/SOUTH AMERICAN PLATES
6. Provide an example from your reference table where you would find diagram C.
MID ATLANTIC RIDGE
7. What is convection and what layer of Earth would you find it?
DENSITY CIRCULATION WITHIN THE ASTHENOSPHERE
8. Describe the geologic features that you would get with diagram A.
MASSIVE EARTHQUAKES
9. Describe what the + and - signs mean with diagram C.
REVERSAL OF MAGNETIC POLARITY

The Water Cycle

1. Label the processes from the diagram above....

- i. ___ EVAPORATION _____
- ii. ___ TRANSPORATION _____
- iii. ___ CONDENSATION _____
- iv. ___ PRECIPITATION _____
- v. ___ RUNOFF _____
- vi. ___ INFILTRATION _____

2. Provide the necessary ground conditions for runoff.

___ IMPERMEABLE SOIL THAT IS SATURATED _____

3. What does the term "saturated"? ___ FILLRD WITH WATER _____

4. Provide the necessary ground conditions for infiltration.

___ UNSATURATED SOIL THAT IS PERMEABLE _____

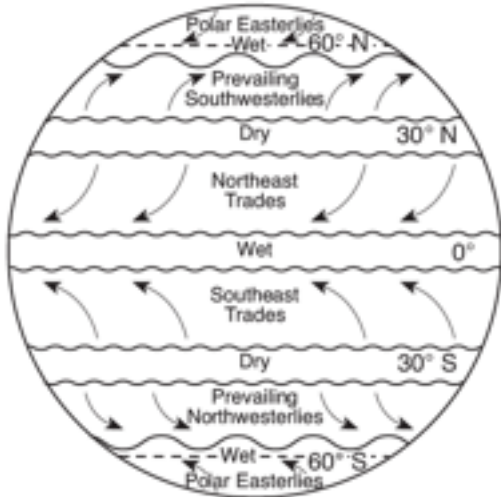
5. Clouds form from what process? ___ CONDENSATION _____

6. Water enters the atmosphere through 2 processes...what are the?

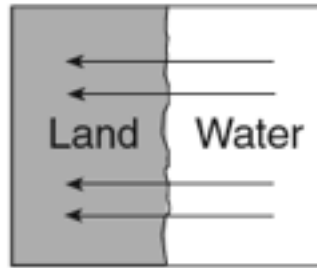
___ EVAPORATION/TRANSPORATION _____

7. What are the 2 groundwater zones?

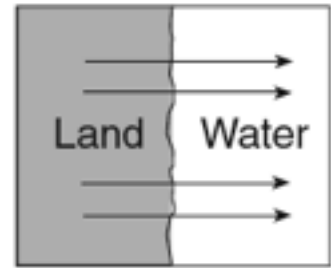
___ ZONES OF SATURATION AND AERATION _____



Winds



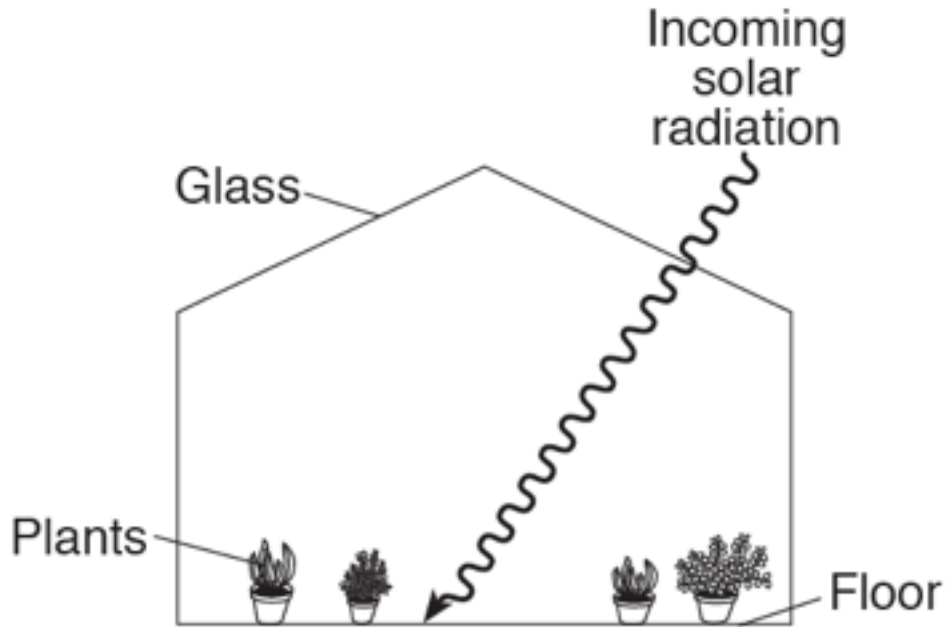
A



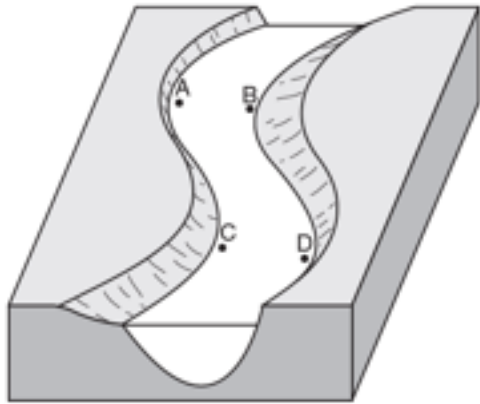
B

1. Winds in the northern hemisphere travel in what direction? RIGHT
2. Winds in the southern hemisphere travel in what direction? LEFT
3. Winds that converge at the surface do what? RISE AND COOL
4. Winds that diverge at the surface do what? SINK AND WARM
5. Which diagram shows a land breeze? B
6. What time of day does a land breeze occur? NIGHT TIME
7. Which diagram shows a sea breeze? A
8. What time of day does a sea breeze occur? AFTERNOON
9. Winds are caused by differences in what? PRESSURE DIFFERENCES
10. What are lines of equal pressure called? ISOBARS
11. How do you determine where the strongest winds are on a weather map?
ISOBARS CLOSE TOGETHER

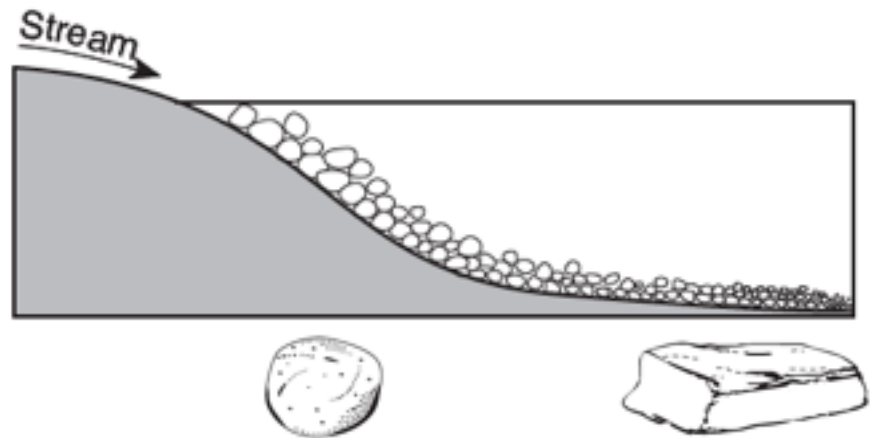
The Greenhouse Effect



1. What type of radiation enters the greenhouse (provide wavelength and names of waves) ___SHORT AND UV_____
2. What type of radiation tries to escape the greenhouse (provide wavelength and names of waves) ___LONG AND IR_____
3. Provide a few examples of greenhouse gases. ___CO₂, METHANE_____
4. The glass in the greenhouse is equivalent to which greenhouse gas? ___CO₂_____
5. What are some possible reasons for the increased amount of carbon dioxide in the atmosphere?
___BURNING OF FOSSIL FUELS, DEFORESTATION_____
6. Dark colors are good at doing what? ___ABSORBING/RADIATING_____
7. The electromagnetic spectrum is organized by what? ___WAVELENGTH_____

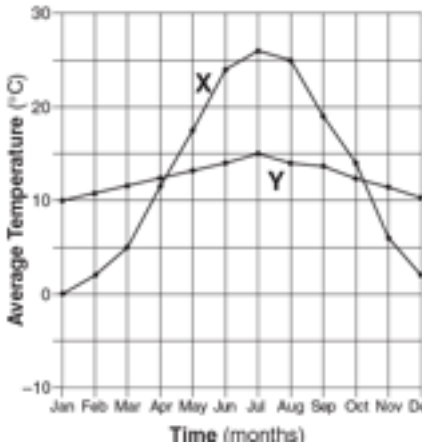


Deposition



1. What is deposition? _____ SEDIMENTS DROPPED OFF _____
2. What is erosion? _____ TRANSPORTATION OF SEDIMENTS _____
3. The diagram at the left, which positions will show erosion? ___ A/D _____
4. The diagram at the left, which positions will show deposition? ___ B/C _____
5. What is carrying power? _ ABILITY TO MOVE SEDIMENT _____
6. What is discharge? _____ VOLUME _____
7. What is velocity? _____ SPEED _____
8. What are meanders? _____ TURNS _____
9. The diagram on the right shows horizontal sorting...what are some of the factors that effect deposition? ___ SIZE, SHAPE, DENSITY _____
10. What is the relationship between velocity and slope? ___ DIRECT _____
11. In a straight channel stream, where does water travel the fastest? ___ CENTER _____
12. Why does water erode more on the outside of a meander? ___ FAST WATER _____
13. Why does water deposit more on the inside of a meander? ___ SLOW WATER _____

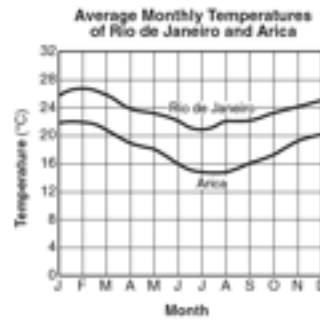
Climatic Conditions



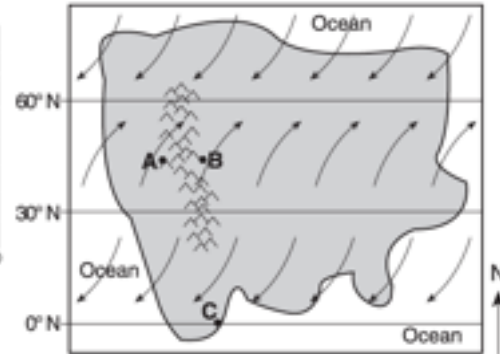
A



B



C



D

1. In diagram A, explain why the 2 cities have very different temperature curves?

___1 INLAND AND ONE COASTAL_____

2. Explain the summers and winters of an inland region.

___HOT SUMMERS/COLD WINTERS_____

3. Explain the summers and winters of a coastal region.

___COOL SUMMERS/WARM WINTERS_____

4. What substance has the highest specific heat on the planet? _WATER_____

5. Describe the differences in heating/cooling for substances that have high or low specific heats.

___HIGH-SLOW HEATING/COOLING....LOW-FAST HEATING/COOLING_____

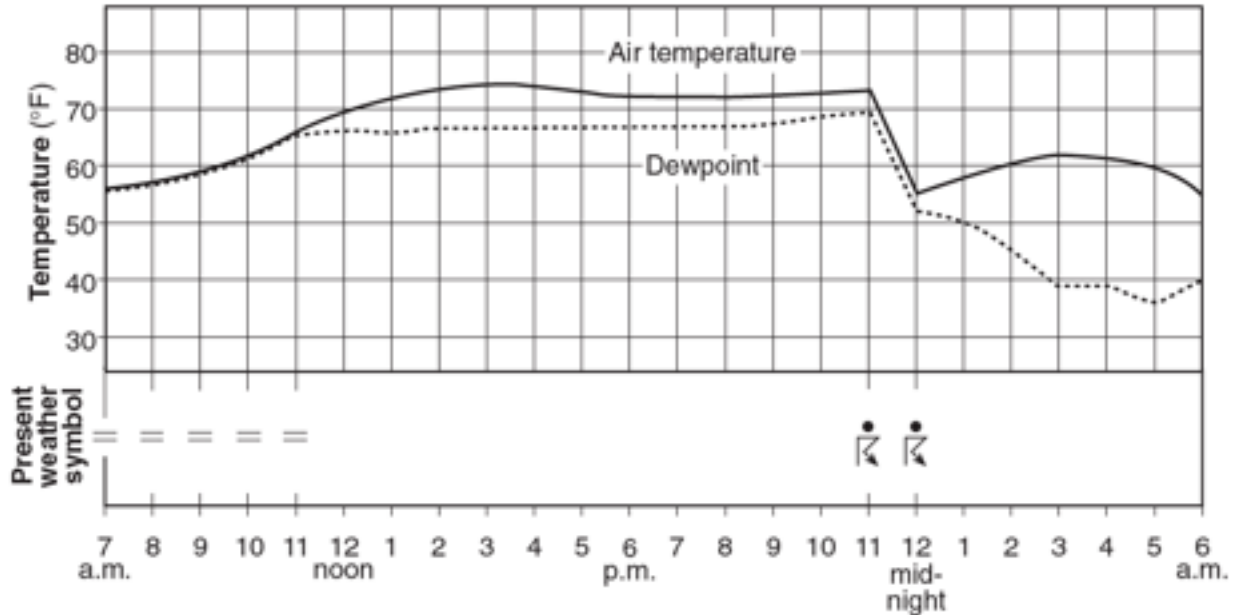
6. In diagrams B and C, explain the difference in temperature curves for Arica and Rio de Janeiro. Both cities are at the same latitude.

_____COLD CURRENT-COLD AIR...WARM CURRENT-WARM AIR_____

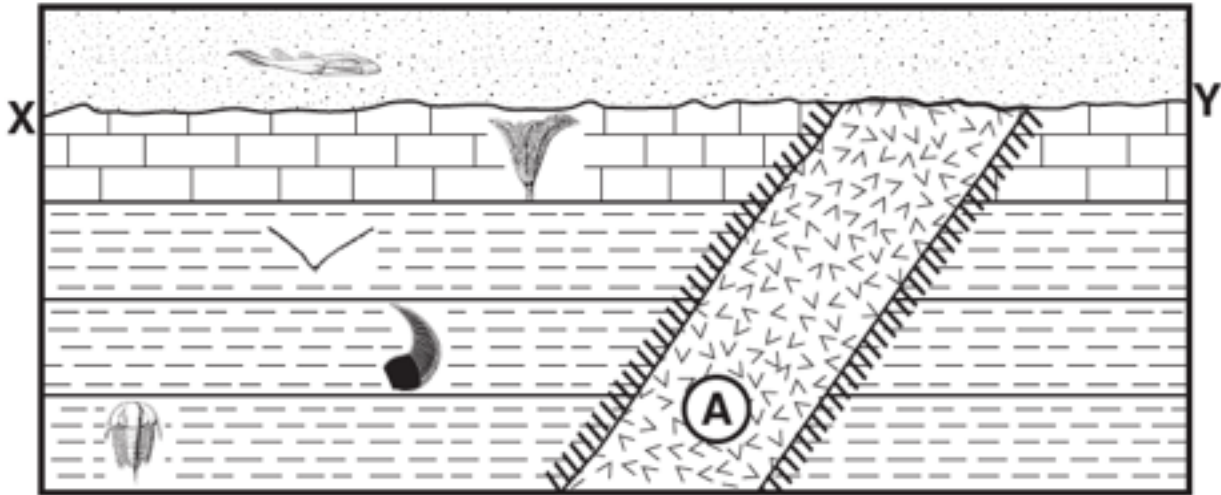
7. In diagram D, explain the difference in climate for positions A and B.

___A-WINDWARD...B-LEEWARD_____

Temperature and Dew Point



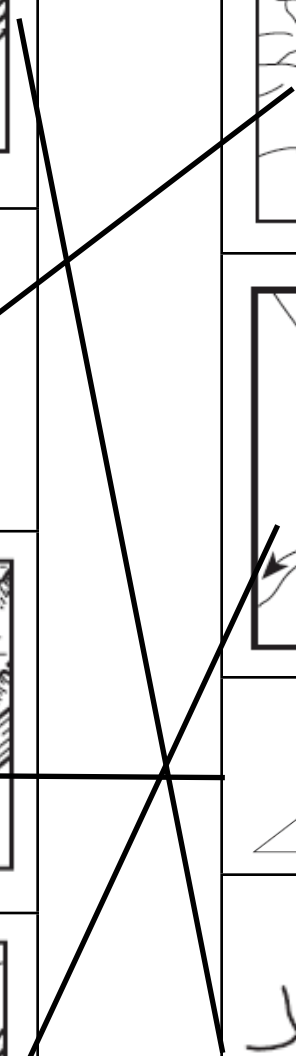
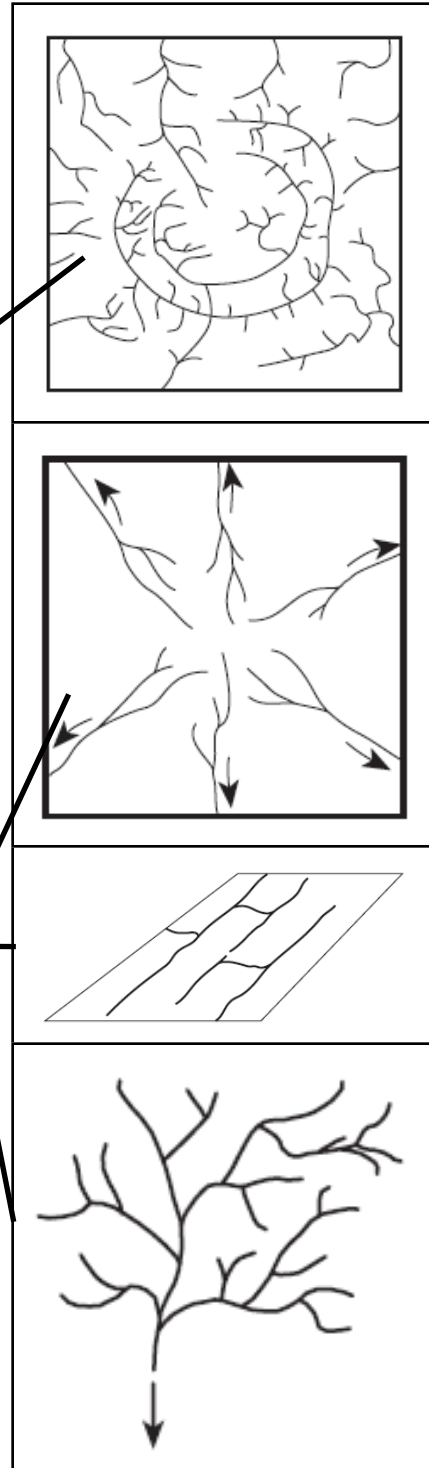
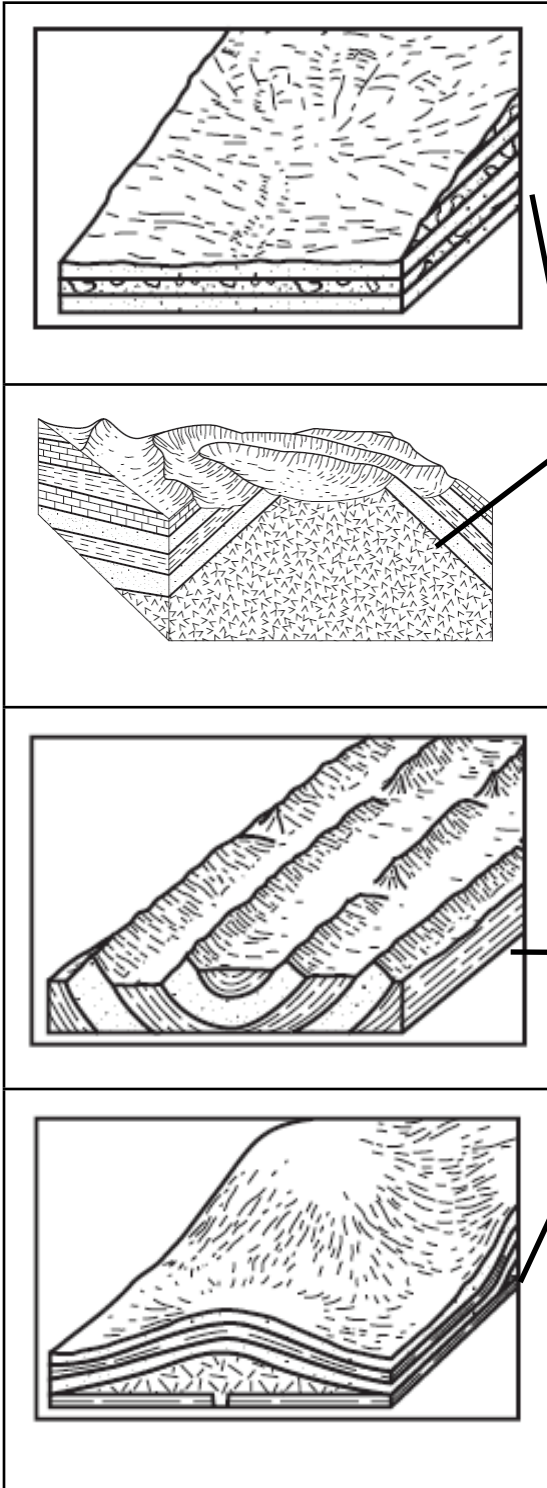
1. Low pressure is going to bring in what type of weather? RAINY
2. High pressure is going to bring in what type of weather? DRY
3. As the air temperature approaches the dew point, what happens outside?
PRECIPITATION
4. As the air temperature and dew point get farther apart, what happens to the weather outside? BEAUTIFUL WEATHER
5. Clouds form when warm air rises, expands, cools to the DEW POINT
6. In the diagram above, what 2 time blocks represent the best chance for precipitation? 7-11AM...11PM-12AM
7. As air temperature approaches the dew point, what happens to the relative humidity?
INCREASES
8. Air that is saturated is said to have what type of humidity? 100%

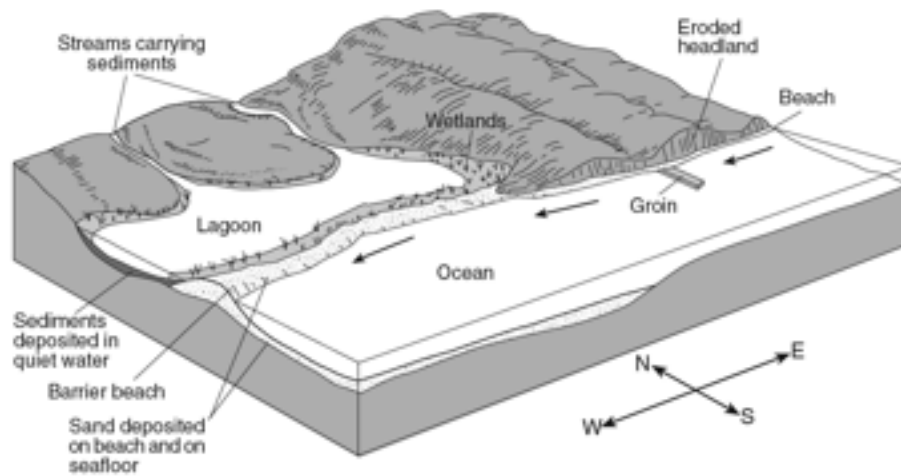
Index Fossils and Correlation

- What are the 2 criteria for a fossil to be considered an "index fossil"?
 ___ LIVED FOR SHORT PERIOD...OVER A HUGE AREA _____
- What is line XY called? ___ UNCONFORMITY _____
- What does line XY represent? ___ GAP IN GEOLOGIC ROCK RECORD _____
- Provide the steps needed to create line XY
 ___ UPLIFT, WEATHERING, EROSION, SUBSIDENCE _____
- What is rock layer A? ___ INTRUSION _____
- Why are these fossils useful in determining the relative age of these rocks?
 ___ AGE OF FOSSIL=AGE OF ROCK _____
- Put the sequence in order...
 - ___ SHALE _____
 - ___ SHALE _____
 - ___ SHALE _____
 - ___ LIMESTONE _____
 - ___ INTRUSION _____
 - ___ UPLIFT _____
 - ___ W + E _____
 - ___ SUBSIDENCE _____
 - ___ SANDSTONE _____

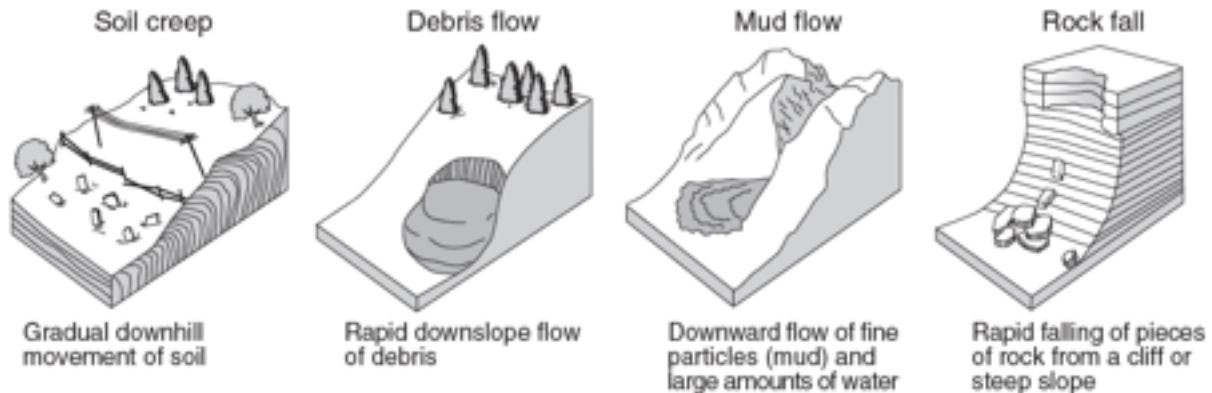
Landscapes

Match the landscapes on the left with the drainage patterns to the right



Oceans

1. When looking at the groin, what compass direction will the largest beach? _____E_____
2. Sediment is carried parallel to the shoreline by _____LONGSHORE CURRENTS_____
3. Ocean currents follow the same path as _____WIND CURRENTS_____
4. What direction is the current flowing? _____WEST_____

Mass Wasting

1. What is the major force behind all 4 types of erosion shown above? _GRAVITY_
2. Mass wasting produces what type of sediment? _____UNSORTED_____
3. Glaciers/gravity produce unsorted sediment, wind and water produce _____SORTED_____
4. Which one of the 4 diagrams above has the greatest velocity? _____ROCK FALL_____