

Name _____

Date _____

Midterm Review

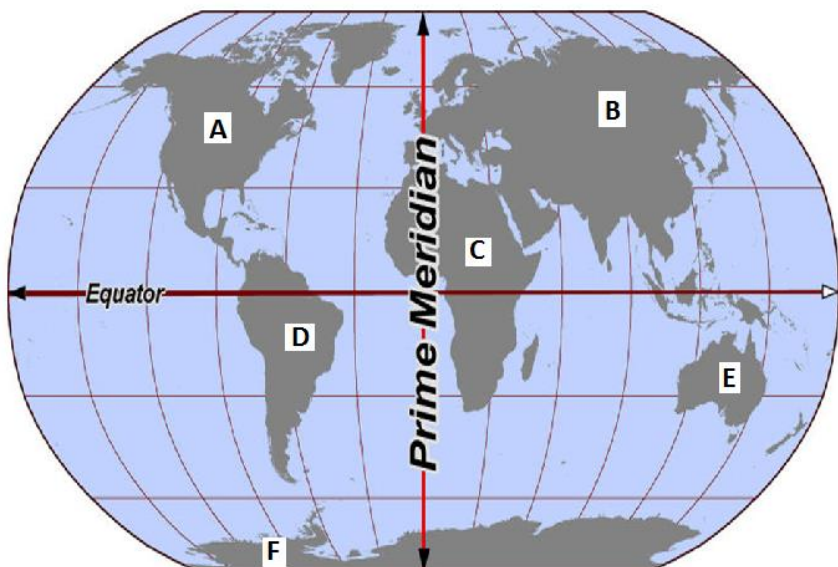
Block _____

Scientific Method

1. Write out the steps of the Scientific Method (in order)
2. What is the difference between an Independent variable and a Dependent variable?
3. How many Independent variables can a VALID experiment have? _____
4. Why does an experiment have to be CONTROLLED?
5. What is a hypothesis?
6. What are the two types of data? And what is each type based on?
7. If an experiment does NOT support your hypothesis what is your next step?
8. If an experiment DOES support your hypothesis what is your next step?

Latitude and Longitude

1. What are the two measurements used to determine location?
2. What does latitude measure?
3. What is the main line of latitude? _____
4. What does longitude measure? _____
5. What is the main line of longitude? _____
6. For each of the letters in the diagram below, give the TWO hemispheres it is located in.



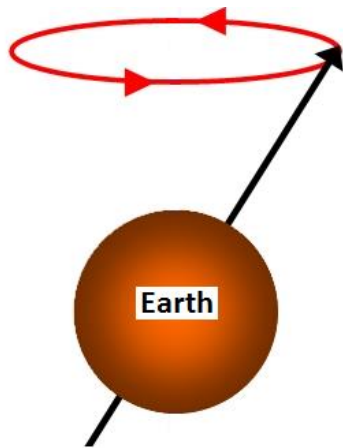
- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____

1. What are the 4 sub divisions of Earth Science? **What does EACH one study?**
2. What are the 4 major spheres? **What does EACH one contain?**
3. What are the 4 layers of the geosphere **IN ORDER** from the **OUTER EDGE** to the **INNER CENTER**?
4. For the following situations, identify which 2 spheres are interacting.
 - a. Humidity in the air on a hot day
 - b. Cars releasing carbon monoxide into the air
 - c. Plants filtering pollution out of water in swamps
 - d. A volcano spewing ashes into the air
 - e. Wind blowing sand to form sand dunes
 - f. Clearing trees to build houses causes soil erosion
 - g. Plant roots growing into rocks breaking them down into pieces
 - h. Water vapor condensing to form clouds

Astronomy

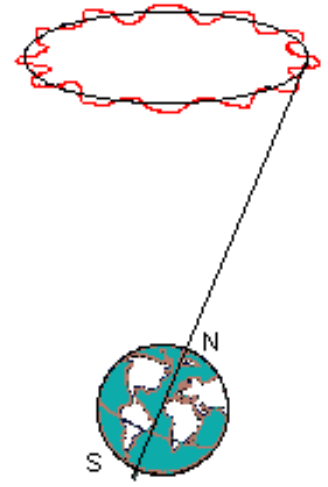
1. The theory of how the Universe was formed is called _____.
2. The Universe was formed about _____ years ago.
3. The best form of evidence to support the Big Bang Theory is known as _____.
4. Explain what a red shift means.
5. Objects that are moving AWAY from us give off a _____ light, and objects that are moving TOWARD us give off a _____ light.
6. The Earth is part of what galaxy? _____
7. How did our solar system form? (HINT- it was NOT the Big bang Theory)
8. What are Kepler's three Laws of Planetary Motion? Explain them in YOUR OWN WORDS!!
 - 1.)
 - 2.)
 - 3.)
9. List the following three terms in order from LARGEST to SMALLEST – galaxy, universe, solar system

10. When the Earth is closer to the Sun it moves _____, and when the Earth is farther from the Sun it moves _____.
11. Why? (refer to question #10) _____
12. How does the Sun (and all other stars) produce their energy? _____
13. What are the 3 ways the Earth moves?
 1. _____ 2. _____ 3. _____
14. List the planets IN ORDER starting at the Sun
15. The Earth _____ on it's axis, which is tilted at an angle of _____.
16. We have _____ and _____ because of the Earth's rotation.
17. The Earth takes _____ days to revolve around the Sun.



18. The picture to the left represents _____.

Explain what precession means.

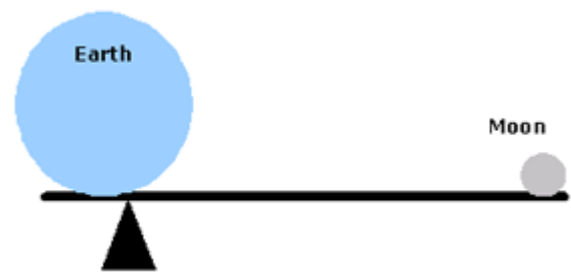


19. _____.

Explain what nutation means.

20. The triangle in the picture below shows the _____, the place between two objects where they balance each other out.

Explain what barycenter means.

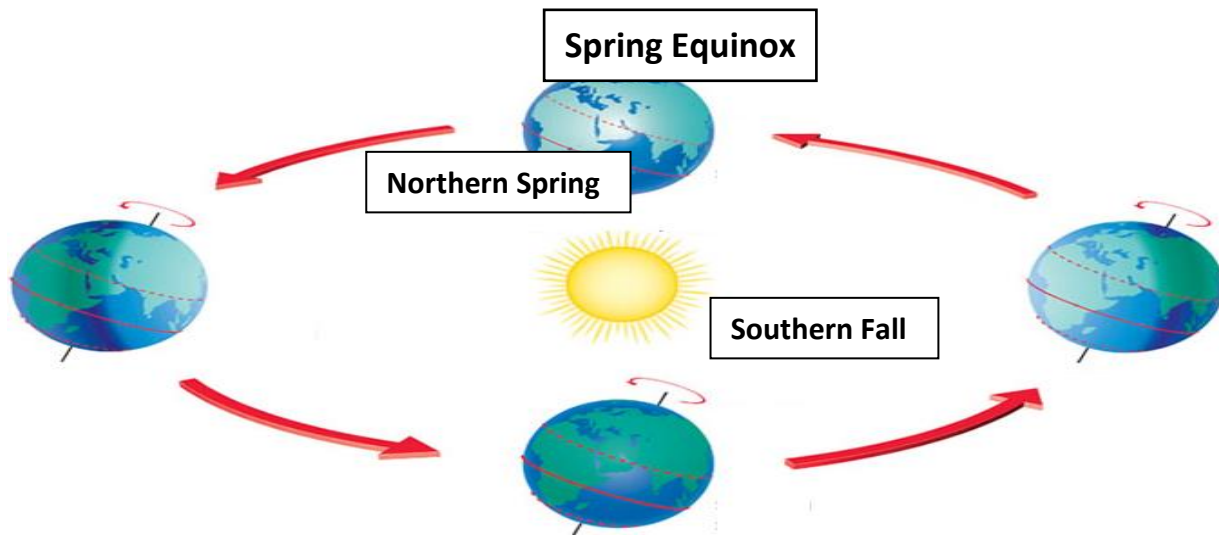


21. _____ puts things TOGETHER APART.

_____ asks things

Reasons for the Seasons

1. Does the distance from the Sun determine the season? _____
2. In the space below draw and label the Earth and Sun in **APHELION** and **PERIHELION**
3. What are the 2 reasons for the seasons? _____ and _____
4. On the diagram of the Earth in orbit label EACH globe with its season title AND tell the season in the northern hemisphere AND the southern hemisphere. **The top globe is done for you AS AN EXAMPLE!!**



The Sun

1. The _____ of the Sun's rays determine their intensity.
2. The closer to the EQUATOR the more _____ the heat, the closer to the POLES the less _____ the heat.
3. What are the 3 global climate zones?
4. What two things does the climate of the region determine about it?
5. What two things determine what kinds of crops will grow in an area?
6. What two parts of the water cycle would stop without the Sun?
7. What are the two steps in how ozone is created?

1. _____

2. _____

8. Without an ozone layer we are more likely to suffer from what three things?

9. What is photosynthesis?

10. What two things does photosynthesis provide for us? _____ and _____

11. Every living thing needs _____ to survive.

13. The Sun contains _____ of all matter in our solar system.

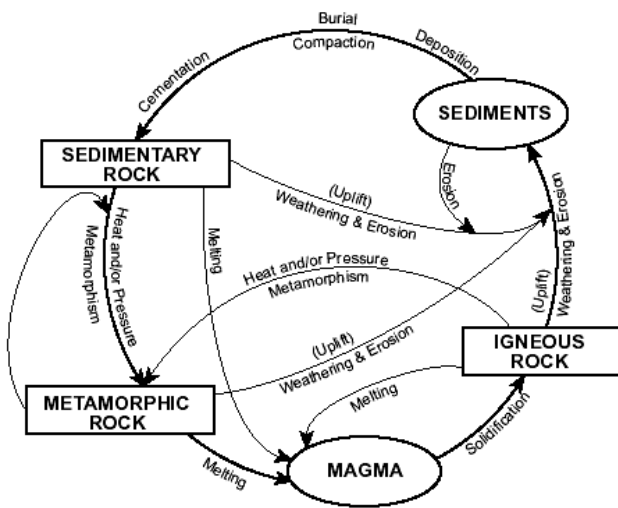
14. What is the relationship between an objects size and its gravitational pull?

Rock Cycle and Rock Types

1. What is the difference between a monomineralic rock and a polymineralic rock?

2. Make sure you understand how to read the rock cycle chart seen below

Rock Cycle in Earth's Crust



3. How are igneous rocks formed?

4. What is the difference between intrusive igneous rocks and extrusive igneous rocks?

5. Crystal size is determined by _____.

6. Glassy texture and fine texture igneous rocks are usually **intrusive/extrusive**. (CIRCLE the correct choice)

7. Coarse texture and very coarse texture igneous rocks are usually **intrusive/extrusive**. (CIRCLE the correct choice)

8. How is sedimentary rock formed?

10. What are the 5 steps in the formation of sedimentary rock?
List them in order **AND** explain what is happening during each step.

11. Sedimentary rocks are the **ONLY** rocks that contain _____.

12. What are the 3 types of sedimentary rocks? List them **AND** give some characteristics about EACH type.

13. Know how to read the chart below

Scheme for Sedimentary Rock Identification

INORGANIC LAND-DERIVED SEDIMENTARY ROCKS					
TEXTURE	GRAIN SIZE	COMPOSITION	COMMENTS	ROCK NAME	MAP SYMBOL
Clastic (fragmental)	Pebbles, cobbles, and/or boulders embedded in sand, silt, and/or clay	Mostly quartz, feldspar, and clay minerals; may contain fragments of other rocks and minerals	Rounded fragments	Conglomerate	
			Angular fragments	Breccia	
	Sand (0.2 to 0.006 cm)		Fine to coarse	Sandstone	
	Silt (0.006 to 0.0004 cm)		Very fine grain	Siltstone	
Clay (less than 0.0004 cm)	Compact; may split easily	Shale			
CHEMICALLY AND/OR ORGANICALLY FORMED SEDIMENTARY ROCKS					
TEXTURE	GRAIN SIZE	COMPOSITION	COMMENTS	ROCK NAME	MAP SYMBOL
Crystalline	Varied	Halite	Crystals from chemical precipitates and evaporites	Rock Salt	
	Varied	Gypsum		Rock Gypsum	
	Varied	Dolomite		Dolostone	
Bioclastic	Microscopic to coarse	Calcite	Cemented shell fragments or precipitates of biologic origin	Limestone	
	Varied	Carbon	From plant remains	Coal	

- How are metamorphic rocks formed?
- Where does the heat come from to make metamorphic rocks?
- Where does the pressure come from to make metamorphic rocks?
- What is the difference between regional metamorphism and contact metamorphism?
- What are the two types of metamorphic rock? What does EACH type look like?
- Make sure you know how to read the chart below

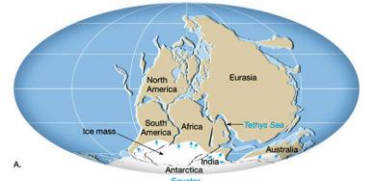
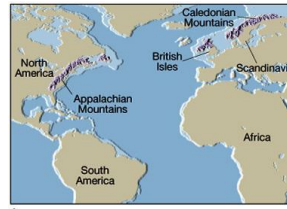
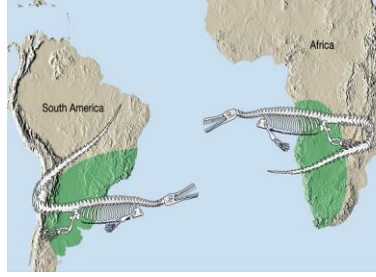
Scheme for Metamorphic Rock Identification

TEXTURE	GRAIN SIZE	COMPOSITION	TYPE OF METAMORPHISM	COMMENTS	ROCK NAME	MAP SYMBOL
FOLIATED MINERAL ALIGNMENT	Fine	MICA QUARTZ FELDSPAR AMPHIBOLE GARNET PYROXENE	Regional (Heat and pressure increase with depth)	Low-grade metamorphism of shale	Slate	
	Fine to medium			Foliation surfaces shiny from microscopic mica crystals	Phyllite	
	Medium to coarse			Platy mica crystals visible from metamorphism of clay or feldspars	Schist	
BANDING	Medium to coarse			High-grade metamorphism; some mica changed to feldspar; segregated by mineral type into bands	Gneiss	
NON-FOLIATED	Fine	Variable	Contact (Heat)	Various rocks changed by heat from nearby magma/lava	Hornfels	
	Fine to coarse	Quartz	Regional or Contact	Metamorphism of quartz sandstone	Quartzite	
		Calcite and/or dolomite		Metamorphism of limestone or dolostone	Marble	
	Coarse	Various minerals in particles and matrix		Pebbles may be distorted or stretched	Metaconglomerate	

Plate Tectonics

- The supercontinent was called _____
- Pangaea means _____
- Who came up with the Theory of Continental Drift? _____
- What were his 4 forms of evidence for Continental Drift?

5. Under each picture below, write down which form of evidence the picture represent



6. For **EACH** of the following types of evidence, explain **HOW** it was used to support the Theory of Continental Drift:

a. **Continental Puzzle Pieces** - _____

b. **Matching Fossils** - _____

c. **Matching Rock Types** - _____

d. **Ancient Climates** - _____

7. Why was Wegener's Theory **NOT** accepted?

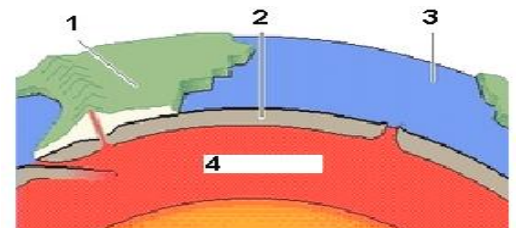
8. Make sure you know the relationship between heating up magma, its density, and whether it rises or sinks.

9. What is the Lithosphere? Describe it.

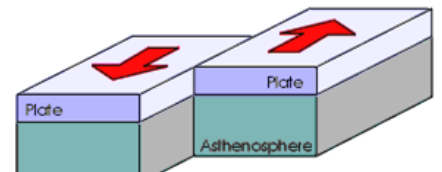
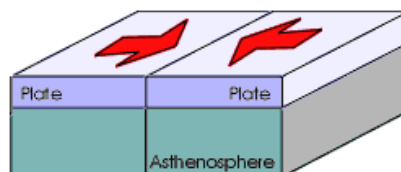
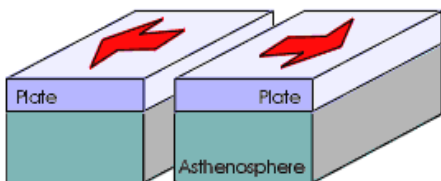
10. What is the Asthenosphere? Describe it.

11. Label the picture **to the right** with the following words:

asthenosphere continent
lithosphere ocean



12. Label the 3 pictures below with the **TYPE** of plate boundary they represent:



13. What type of movement is occurring at each of the following types of plate boundaries?

- a. Convergent - _____
- b. Divergent - _____
- c. Transform - _____

14. Plate Tectonics cause what landforms or processes? (List at least 5)

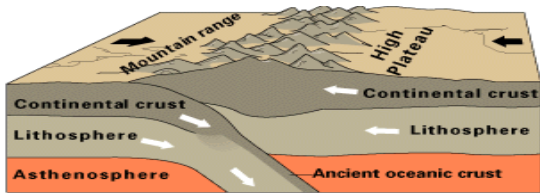
15. Divergent boundaries cause _____

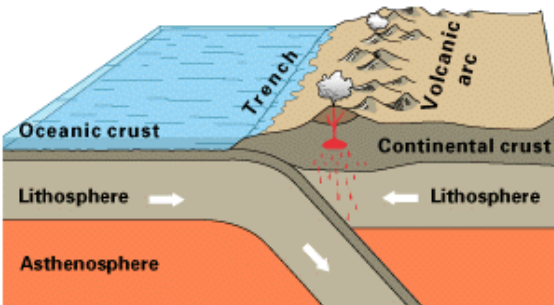
16. Convergent boundaries cause _____ AND _____

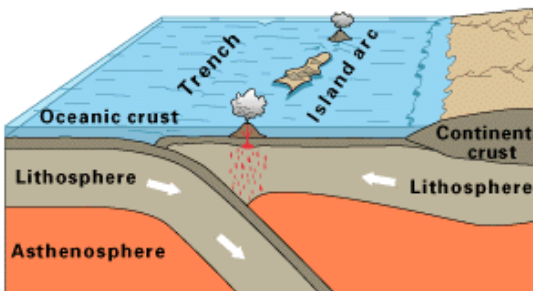
17. Transform boundaries cause _____

18. What are the 3 types of **CONVERGENT** boundaries?

19. Under **EACH** picture below, identify which type of convergent boundary the picture represents AND describe what is happening there



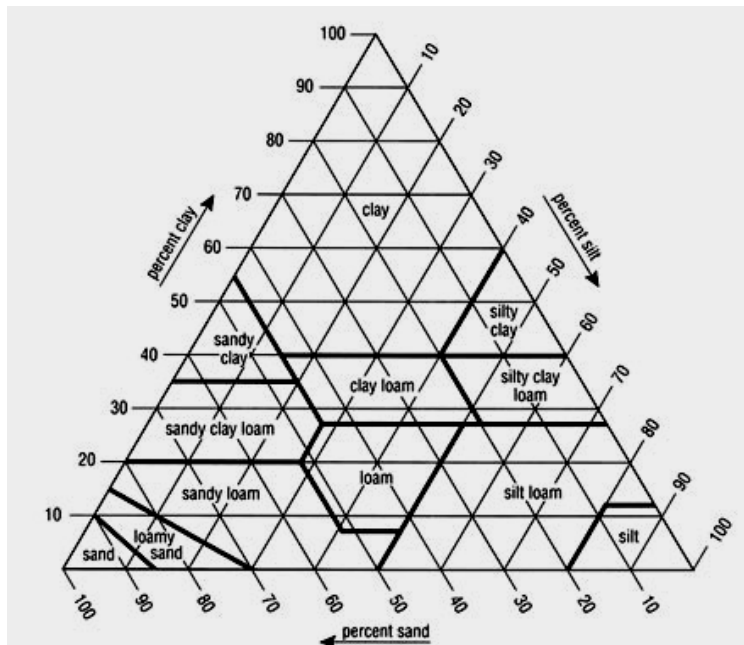




What is the driving force behind plate tectonics? _____

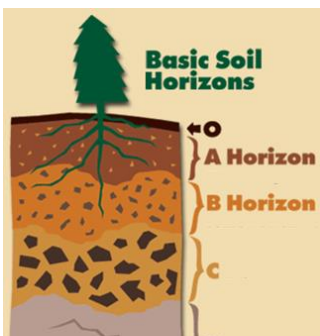
Weathering and soil

1. What is the difference between mechanical and chemical weathering?
2. What are the 4 types of mechanical weathering? (List the 4 types AND define what is happening in EACH type)
3. What are the 4 types of chemical weathering? (List the 4 types AND define what is happening in EACH type)
4. What are the 3 factors that affect the rate of weathering?
5. What is the difference between regolith and soil?
6. What are the 4 major components of soil?
7. The texture of soil is determined by its _____ size.
8. Make sure you know how to read the soil triangle



9. What type of soil is made up of 20% clay, 30% silt and 50% sand? _____
10. What type of soil is made up of 60% clay, 30% silt and 10% sand? _____
11. What type of soil is made up of 30% clay, 40% silt and 30% sand? _____
12. What type of soil is made up of 20% clay, 50% silt and 30% sand? _____

9. What are the 5 factors in soil formation? (List them and DEFINE each of the 5)
10. What is the difference between a soil PROFILE and a soil HORIZON?
11. For the soil profile **below**, complete the picture by listing what is found in EACH of the horizons



11. How do humans contribute to soil erosion?