Name: 1st

Unit 4: Energy & Resources + Midterm Review

Energy (50% of Midterm)

1. **Answer the following questions about renewable or nonrenewable resources.**
   a. A (renewable/ nonrenewable) resource can be replaced in a lifetime, whereas a (renewable/ nonrenewable) resource is used and cannot be replaced in a lifetime.
   b. **Check the box for renewable or nonrenewable**

	Renewable	Nonrenewable
Solar Energy	✓	
Coal		✓
Natural Gas		✓
Hydroelectric Power	✓	
Nuclear Power		✓
Wind Energy	✓	
Oil (Petroleum)	✗	✓
Biomass (Biofuel)	✓	
Geothermal	✓	

   c. **Which of the energy resources above is used the MOST in the United States?**
   Fossil Fuels (coal, natural gas, oil)

   d. **Which of the energy resources can we NOT find/use in North Carolina?**
   Geothermal → no volcanoes

   e. **Which energy sources require the use of a turbine?**
   wind, geothermal, hydroeletric

   f. **The sun is considered the "source" of all energy for all of the energy sources besides which TWO?**
   geothermal (volcano),

   g. **Fill out the compare/contrast chart for the following energy sources**

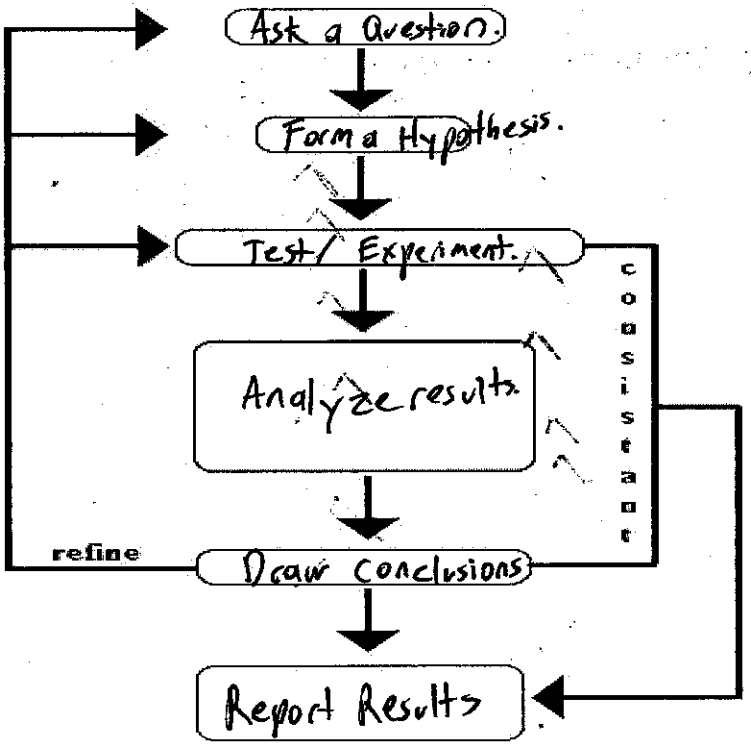
	Advantages	Disadvantages
Fossil Fuels	- widely available - cheap	- Air Pollution/Acid Rain Global warming - Non-renewable
Nuclear	- cheap once build - Not as much environmental impact	- Potentially dangerous (Nuclear Meltdown). - Expensive to build - thermal H2O pollution
Solar	- renewable - infite amount + storable	- Expensive - collect sunlight only in day.
Hydroelectric • Tidal • Dam	- potentially infinite - Store water	- Expensive - Flooding.
Wind	- renewable - potentially infinite	- kill/interept migration of birds - Expensive/Noisy
Geothermal	- potential energy.	- Has to be in volcanic regions.
Biomass • farm waste decaying plants.	- cheap - easy to find.	- Air Pollution. (Global warming).

Units 1-3 (50% of Midterm)

Unit 1: Intro to Earth Science

1. **Fill in the diagram using the word bank (each word will only be used once!)**

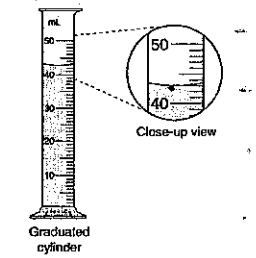
Report Results	Analyze results	Form Hypothesis
Ask A Question	Test/Experiment	Draw Conclusion



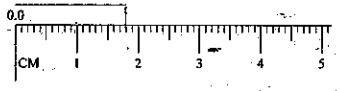
2. **Check the box of appropriate vocab word (an example has been done for you)**

	Independent Variable	Dependent Variable	Control Variable
This variable remains unchanged/constant			✓
This variable is graphed on the y axis		✓	
This variable is graphed on the x axis	✓		
This variable can be graphed against the dependent variable to see if change occurred			✓
The variable that is changed by the scientist	✓		
The variable that is being measured by the scientist		✓	

3. **Determine the following measurements**



43 mL



1.8 cm

4. **Use the metric conversion chart to convert the following:**

a. 238 mg = 0.238 g

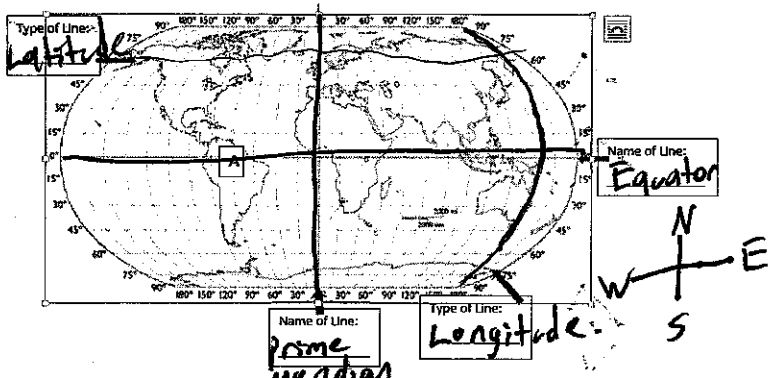
b. 0.3732 kL = 373200 mL

c. 8.21 m = 0.00821 km

238, 0.373200, 8.21

K H D b d c m

5. Label the following on the map: Latitude, Longitude, Equator, Prime Meridian

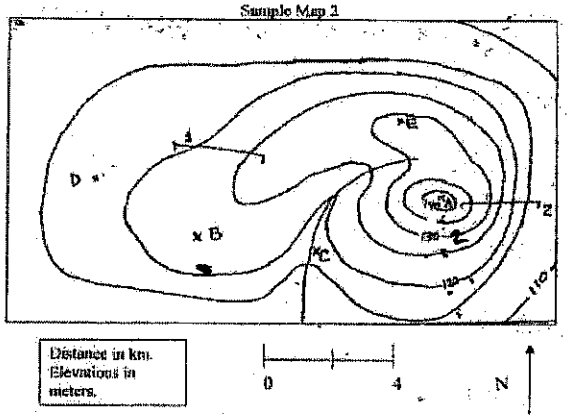


Circle the correct word in each sentence. Find the coordinates for location A on the Map above.

(a) When determining a location you find the (latitude, longitude) first followed by the (latitude, longitude) second.

(b) What is the location for point A? 0°, 60° W

6. Use the map below to answer the questions



a. What is the contour interval?

130 - 120 = 10/2 = 5

b. What is the elevation of A? 140

c. What is the elevation of B? 123

d. Which line represents the steeper slope--1 or 2? 2 (closer together)

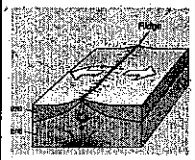
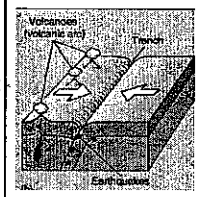
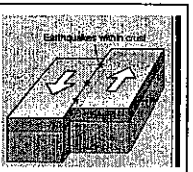
e. How far is it from D to E? 130 - 115 = 15

f. What is the relief between point A and point B? 140 - 123 = 17

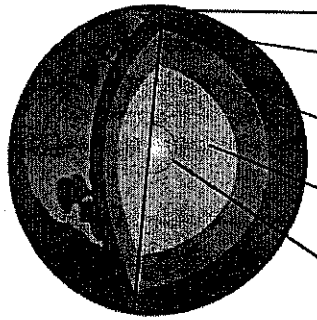
7. Check the box of appropriate vocab word (an example has been done for you)

	Oceanic Crust	Continental Crust
Generally thinner		✓
Generally thicker	✓	
Denser (sinks)	✓	
Less Dense (floats)		✓

8. Fill out the chart on plate boundaries.

			
Type of Boundary	Divergent	Convergent	transform
Movement	-apart	-subduction (moving together)	*sideways.
Land formations	-sea floor spreading -rift continent.	-Trench -Mountain -Volcano	*Faults
Real-world example	*Mid-Altanic Ridge.	*Himalyas	*San Andreas Fault.

10. Label the parts of the Earth using the following terms. Inner core, Outer core, Crust, asthenosphere, inner mantle



- N - Crust
- E - asthenosphere (mantle).
- M - inner mantle
- X - outer core
- T - inner core.

a. **What drives the movement of the mantle or asthenosphere?**

* Convection currents not (?) rock.

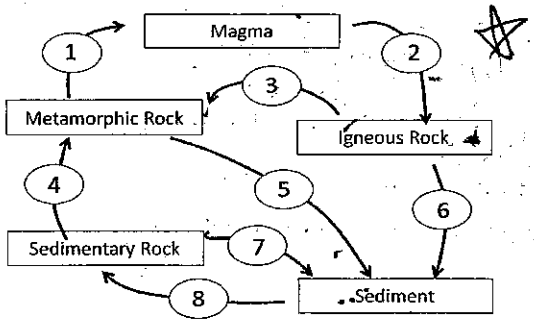
b. **How do scientist know about the Earth's mantle and core?**

* seismograph → seismic waves.

11. Determine if the scenario is chemical or mechanical weathering. Check the correct box.

	Chemical weathering	Physical Mechanical Weathering
The oxidation of iron creates rust.	✓	
Water freezing in a rock and breaking it apart (frost wedging).		✓
Water dissolving limestone creating a cave.	✓	
Plant roots cracking rocks open.		✓
Wind blows sand on a rock and causes abrasion.		✓

12. Fill out the chart on the rock cycle.



1. melting
2. cooling / crystallization
3. heat / pressure
4. heat / pressure
5. weathering / erosion
6. weathering / erosion
7. weathering / erosion
8. cementation / compaction.

13. Identify how each rock is classified.

Metamorphic rocks	Foilated (layers) or Non-foilated (no layers).
Igneous rocks	Intrusive (inside Earth w/ magma) Extrusive (on surface of Earth w/ lava).

14. Match the correct term with each mineral classification.

1. Appearance or quality of light reflected from the surface of a mineral	C	a. Magnetism
2. Scratching a mineral sample across an unglazed, porcelain tile	B	b. Streak
3. Uneven breaking of a mineral	D	c. Luster
4. Even breaking of a mineral	E	d. Fracture
5. Ability to stick to a magnet	A	e. Cleavage

particle size.

15. Answer the following questions about soil.

a. Rank each soil type from highest leaching to lowest leaching ability. (Silt, Clay, Sand)

Sand, silt, clay ~~particle~~.

b. Name the four components that make up soil.

* Air, water, weathered rocks, organic matter.

c. Write the soil horizons in order from the top of the soil to the bottom and write what each horizon contains. (Horizons A, C, B, O, R)

O - organic (humus)
A - topsoil (clay, sand, silt)
B - subsoil (clay + rocks)
C - parent rock (clay + rocks)
R - bedrock (rocks).

16. Fill in the chart on agriculture practices.

Type of Agriculture	What is it?	Advantages	Disadvantages
Organic Farming	farming w/ chemicals	* Better for the environment	* Food more expensive
Crop Rotation	* Rotate crops each year.	* Prevents soil nutrient depletion	* planning b/c some crops need different nutrients.
Terracing /Contour	* farming on a slope	soil erosion	* time consuming