

Name:	Date:
11411101	

UNIT SIX

Product of Earth's Interior Fire

*Dedicated to:



Name:	Date:	

ABSTRACT AND RATIONALE

Tombstones and gravestones are important pieces of history that serve as markers and memorials for the loved ones. Geological observations in cemeteries have a long history. Cemetery has an incredible wealth of geological features (Hannibal and Schmidt, 1988a, 1988b). Gravestones and monuments can be made of sandstone, limestone, marble, and granite, as well as other intrusive rocks. In addition, shale, siltstone, and sandstone which were once quarried on the cemetery grounds can also be used as memorials.

TASK STATEMENT/PROBLEM BASED LEARNING/REAL WORLD PROBLEM:

You are the funeral home director of a NYC funeral home. You are in charge of everything that goes on in a funeral home. Funeral directors help their clients in their time of need. In this task, your job is to introduce and sell the type of tombstones available to your client. There are many Tombstone manufacturers; all of them are selling tombstones. Are your tombstones the same as everybody else's? How will your products stand out? You are going to write a letter to your client explaining the type of tombstones that are available in your funeral home. You are going to make recommendations to the type of tombstone your client should purchase.

List some of the questions necessary for completing this task.



For each of the statements, circle $\underline{\mathbf{R}}$ for Rock only, $\underline{\mathbf{M}}$ for Mineral only, $\underline{\mathbf{both}}$ if it applies to both Rocks and Minerals, $\underline{\mathbf{N}}$ if neither rock of mineral are appropriate:

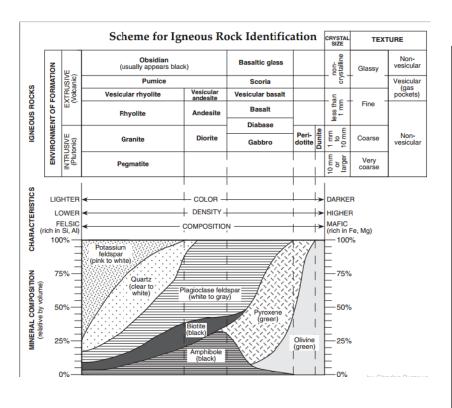
1.	It is natural part of the earth's crust	R	М	N
2.	It can have an organic composition	R	М	N
3.	It is homogeneous (for the most part)	R	М	N
4.	lce	R	М	N
5.	Coal	R	М	N
6.	They are classified by their chemical composition	R	M	N
7.	Belongs to families (oxides, halides, carbonates)	R	М	N
8.	Can be formed by cooling magma, evaporating sea water, or extreme heat and pressure	R	M	N
9.	They can be in liquid form	R	М	N
10.	Show metallic luster, cleavage, can be identified by hardness test	R	М	N



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ck formation. Label the ure.	process of cooling (Fast, Slow)
tures?	
	ek formation. Label the ure.

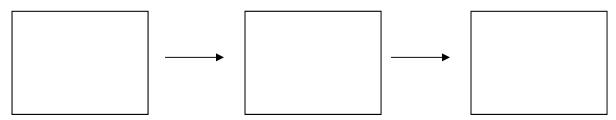


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Environment#1



Evironment#2



What characteristics provide evidence about the environment? ______



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Anticipation Guideline (Igneous Rock)

Read page#121-125 in your Earth Science Textbook. Base on the reading; **decide** whether or not each statement below is true (yes) or False (no). If the statement is no, please **indicate** the page# and line# where the correct answer is located in the text. In addition, be sure to **correct** the wrong word in the statement with the correct vocabulary. You may only fill out yes or no on one side of the table. The other side of the table will be done by you after hurricane topics.

Your hypothesis

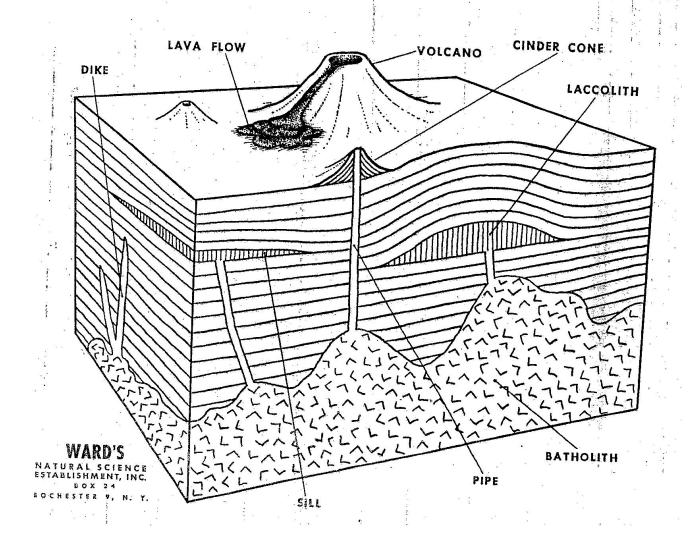
correct answer after reading

Yes	No	Statements	Yes	No	Page# Line#
		Igneous rock are classified by			
		fragment size and shape			
		Felsic magma is dark colored			
		Felsic magma is rich in iron and magnesium			
		Mafic magma is light colored			
		Underground magma hardens faster			
		When magma pour into Earth's surface it is known as volcanic rocks			
		Extrusive rocks hardens rapidly			
		Igneous rocks are grouped into			
		families according to mineral			
		composition			
		When lava is squeezed between			
		rock layers, it is called an			
		igneous intrusion			
		A dyke is an example of an			
		igneous intrusion			



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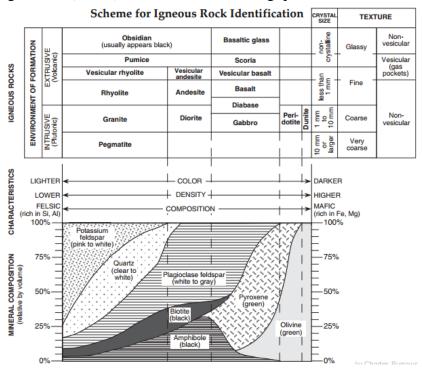
DIAGRAM SHOWING FORMS OF IGNEOUS ROCKS





Name:	Date:

Homework: Use the image below (ESRT) to answer the following questions



- 1. Name one intrusive environment
- 2. Name one type of intrusive rock
- 3. Which type of igneous rock has a grain size of 1mm to 10mm? What is the name of that texture?
- 4. Basalt and gabbro contain which four minerals?
- 5. Rhyolite, granite, and pegmatite contain which five minerals? Are these rocks felsic or mafic?
- 6. What does felsic and mafic suggest about the igneous rock?
- 7. Which type of extrusive igneous rock has a composition that is neither felsic nor mafic?
- 8. Which is the texture of pumice?
- 9. Which mineral is found almost exclusively in felsic igneous rock?
- 10. Which type of rock is mostly olivine?

Name				
Using the ruler in your ESRT, ide the igneous rock based on textur and mineral composition	entify			
Texture				yroxene
Minerals Present-)	C)(ivine
Name of Facts)uartz
Name Of Rock			F	otassium Feldspar
				Plagieclase Feldspar
Texture Minerals Present				Biotite Mica
Name Of Rock				Amphibole
			•	
Texture-				
Minerals Present- <u>Quartz,</u> <u>Potassium Feldspar, Biotie</u> <u>Mica, Plagioclase, Amphibole</u>			- ini	
Name Of Rock				

Texture-_

Name Of Rock-_

Minerals Present- <u>Biotite</u> <u>Mica, Amphibole, Plagioclase</u>

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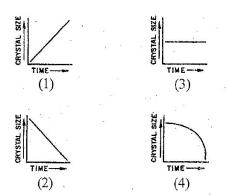
Name:	Date:

- 1. Which statement best describes a general property of rocks?
 - a) Most rocks have a number of minerals in common
 - b) Most rocks are composed of a single mineral
 - c) All rocks contain fossils
 - d) All rocks contain minerals formed by compression and cementation
- 2. A coarse grained igneous rock contains plagioclase feldspar and pyroxenes, but no quartz. This rock is most likely
 - a) basalt

c) granite

b) rhyolite

- d) gabbro
- 3. Which is usually a characteristic of igneous rocks with a high density?
 - a) They are light in color
 - b) They are felsic
 - c) They have a high aluminum content
 - d) They contain iron
- 4. Which graph best shows the relationship between the size of the crystals in an igneous rock and the length of time it has taken the rock to solidify?



- 5. Which rock is of felsic composition, low in density, light in color and coarse grained?
 - a) rhyolite

c) granite

b) basalt

- d) gabbro
- 6. Gabbro is composed mainly of
 - a) Plagioclase feldspar and pyroxene
 - b) Hornblende and quartz
 - c) Biotite and olivine
 - d) Potassium feldspar and quartz
- 7. Most igneous rocks form by which process?
 - a) melting and solidification
- c) erosion and deposition

b) heat and pressure

d) compaction and cementation



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- 8. Which is a fine-grained igneous rock made up primarily of pyroxene and plagioclase feldspar?
 - a) Gabbro

c) basalt

b) granite

d) rhyolite

- 9. Compared to basalt, granite is
 - a) lighter in color

c) more mafic in composition

b) greater in density

- d) more fined grained in texture
- 10. Which property would be most useful in identifying igneous rocks?
 - a) kind of cement

c) number of minerals present

b) mineral composition

d) types of fossil present

- 11. Rhyolite and granite are alike in that they are both
 - a) fine grained

c) mafic

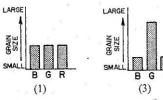
b) dark colored

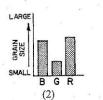
- d) felsic
- 12. Large crystals in igneous rock most likely form as a result of
 - a) mineral composition of the magma
- c) cooling rate of magma

b) fossil content of the rock

- d) color of the rock
- 13. Which graph best represent the comparison of the average grain size in basalt, granite and rhyolite?









- 14. Which characteristic provides the best evidence about the environment in which a rock was formed?
 - a) The color of the rock
- c)The size of the rock
- b) The texture of the rock
- d) The thickness of the rock



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15. Which diagram below shows an area in which fined grained igneous rocks are mostly likely to be found?









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Using the ruler in your ESRT, id the igneous rock based on text and mineral composition	lentify ure		Por	oxene
Texture			Eril Fyi	UXCHC
Minerals Present-			O(i	vine
			Qua	artz
Name Of Rock		,	Pot	assium Feldspar
				gioclase dspar
Texture Minerals Present			Bio	otite Mica
Name Of Rock			Am	nphibole
Texture-				
Minerals Present- <u>Quartz,</u> <u>Potassium Feldspar, Biotie</u> Mica, Plagioclase, Amphibol	<u>e</u>			
Name Of Rock			·	

Texture-_

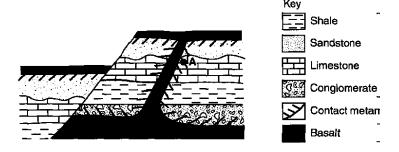
Name Of Rock-_

Minerals Present- <u>Biotite</u> <u>Mica, Amphibole, Plagioclase</u>

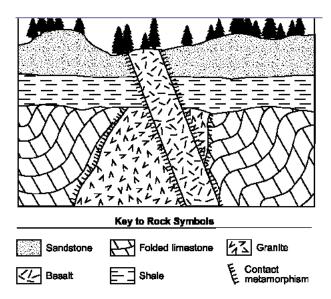


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The diagram below shows magma rising from the ground through layers of rocks to the surface



- 1. As magma cools, what process changes into basalt?
- 2. If the hot magma contacts the other layer of the rock, what do you predict will happen to the other rocks?
- 3. Base your answer to the following question on the information and diagram below. The diagram represents a cliff of exposed bedrock that was investigated by an Earth Science class.



Students compared samples of the granite and basalt. State one observable characteristic other than crystal size that makes granite different from basalt.