Name:_____

Date:_____ Period:_____

Earth Science 8
"Igneous Rock ID" Virtual Lab

In this lab, you will be investigating the properties of igneous rocks that geologists use to identify them. While this procedure is more useful if done with **actual** rocks, due to lack of materials, this cannot be done in class. Luckily I've found a website that allows us to get a feel of how the procedure is done.

First, go to my Earth Science website. From there, at the bottom of the page, click the link to get to the virtual lab website, and answer the following questions.

Part 1: "Composition"

The website uses a few terms that are new to us. For example they use the terms "plutonic" to describe igneous rock that has cooled beneath the surface, and "volcanic" to describe igneous rock that has cooled at the surface. What are the two terms we learned instead, that mean exactly the same thing?

_____

What are the two characteristics we use to identify igneous rocks?

_____

What simple visual characteristic is often used to help identify the composition of an igneous rock when chemicals and expensive equipment aren't an option?

_____

Describe what felsic igneous rocks look like.

_____

What elements commonly make up felsic igneous rocks rocks?

_____

Describe what mafic igneous rocks look like.

_____

What elements commonly make up mafic igneous rocks?

_____

List the 2 additional compositions that the website includes that were not included in our notes and describe what they would look like.

_____

_____

What two igneous rocks are not able to be identified using the "color index"?

_____

Part 2: “Texture” (Use the Properties Chart)

The texture of an igneous rock is primarily based on what?

_____

Name and describe the 7 types of texture that the website lists.

1._____

2._____

3._____

4._____

5. _____

6. _____

7. _____

Use these 7 types of texture when identifying the 12 rocks you will be given in the lab.

Part III: Identify the samples

For each of the 12 samples, fill out the data chart below, and take a guess as to what that mineral is!

Sample 1

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Sample 2

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Sample 3

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 4

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 5

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 6

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 7

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 8

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 9

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 10

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 11

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Sample 12

Igneous Rocks ID Lab				
Composition **Texture**	**Felsic**	**Intermediate**	**Mafic**	**Ultramafic**
Pegmatitic	**Granite Pegmatite**	**Diorite Pegmatite**	**Gabbro Pegmatite**	
Phaneritic	**Granite**	**Diorite**	**Gabbro**	**Dunite**
Aphanitic	**Rhyolite**	**Andesite**	**Basalt**	
Porphyritic	**Rhyolite**	**Andesite**	**Basalt**	
Glassy	**Obsidian**		**Basaltic Glass**	
Vesicular	**Pumice**		**Scoria**	
Pyroclastic	**Volcanic Tuff**			

Your guess: _____

Part V: Conclusion questions

Was it easier for you to determine the composition or the texture?

_____

_____

_____

When an igneous rock is forming what determines the type of texture it will have?

_____

_____

_____

What did you learn from this activity? List 2 things!