Lesson – Igneous Rocks

THE FOLLOWING **VIDEO** HAS BEEN APPROVED FOR
ALL AUDIENCES
BY THE EARTH SCIENCE TEACHERS ASSOCIATION OF AMERICA , INC

THE VIDEO HAS BEEN RATED

I	**INTELIGENT**
	UNDER 15 REQUIRES TEACHER ASSISTANCE
STRONG EARTH SCIENCE LANGUAGE, DETAILED DIAGRAMS, AND SUPER AWESOMENESS	

- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures

Rocks…Wahoo

1. Igneous 
2. Sedimentary 
3. Metamorphic 

- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures

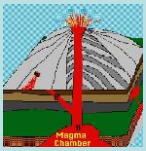
What is a ROCK?

Rocks are
- Composed of one or more **MINERALS**

CLASSIFIED by:
1) How they FORM (ORIGIN)
2) Texture
3) Mineral Content

- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures

IGNEOUS ROCKS



Formed by **MELTING** & **SOLIDIFICATION** of hot molten rock

LAVA - on the surface of Earth, reaches surface through volcanic eruptions

MAGMA - deep beneath the Earth's crust

DON'T WRITE! # IGNEOUS ROCKS

TWO CLASSES:

1. Intrusive (Plutonic)
2. Extrusive (Volcanic)

INTRUSIVE (Plutonic)

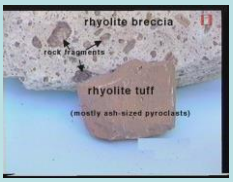
- Formed **INSIDE** Earth
- Cooled **VERY SLOWLY**

LARGE CRYSTAL STRUCTURES

Extrusive (Volcanic)

- Forms **ON THE SURFACE**
- Cools **FASTER**

SMALL CRYSTAL STRUCTURES

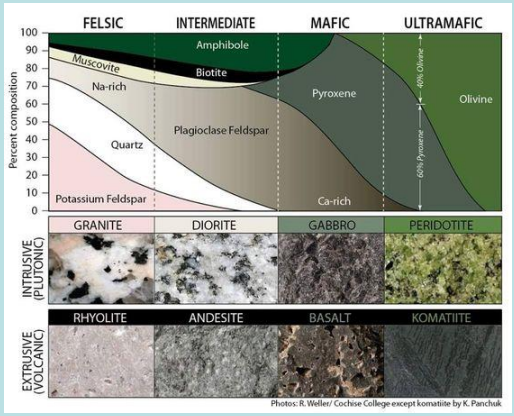


- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures

MAFIC
-Dark in color
-HIGHER Density

VS.

FELSIC
-Light in color
- LOWER Density



- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures

5 TYPES of TEXTURE:

1. **VERY COARSE**
   - -VERY LARGE CRYSTALS
   - -Cooled slowly, deep underground

   Ex: Pegmatite

2. **COARSE**
   - Large crystals
   - Cooled slowly deep under ground

   Ex: Granite (Felsic)
   Gabbro (Mafic)

3. **FINE**
   - -Very small crystals
   - -Cooled rapidly on the surface

   Ex: Rhyolite (Felsic)
   Basalt (Mafic)

4. **VESICULAR**
   - -Characterized by holes created by gas pockets
   - -Very small crystals – not visible to naked eye

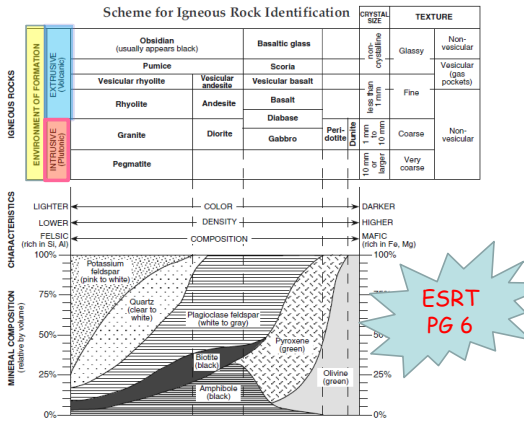
   Ex: Pumice (Felsic)
   Scoria (Mafic)

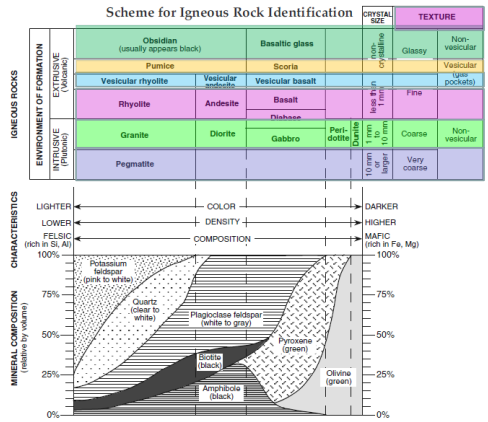
5. **GLASSY**
   - EXTREMELY small crystals
   - Formed from lava that is blown UPWARDS during an explosion
   - Smooth & Shiny (LOOKS JUST LIKE GLASS)

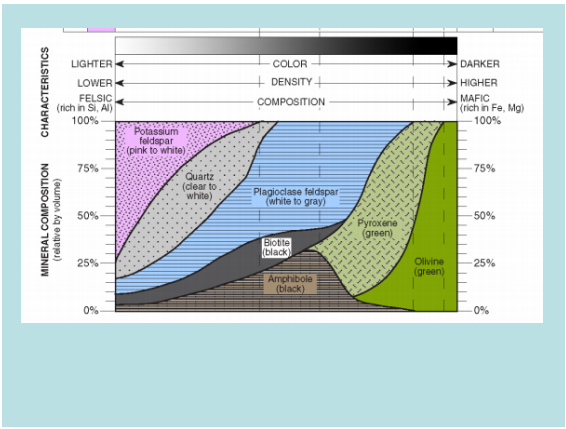
   Ex: Obsidian (Felsic)
   Basaltic glass (Mafic)

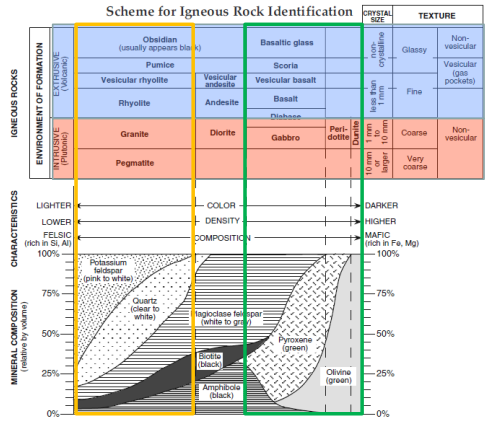
WHICH ONE IS OBSIDIAN?

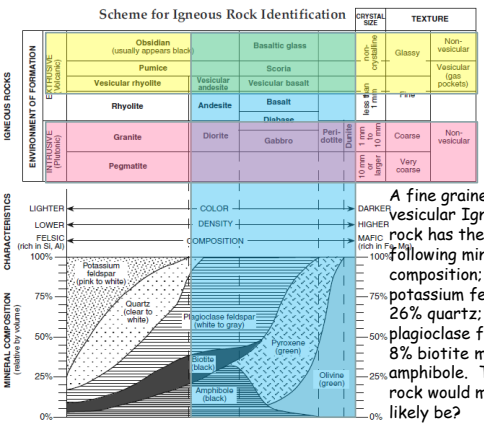
- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures



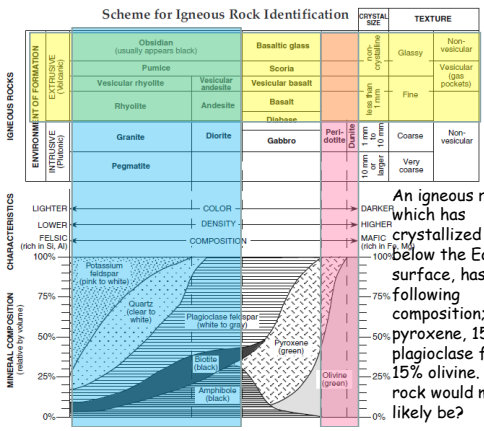




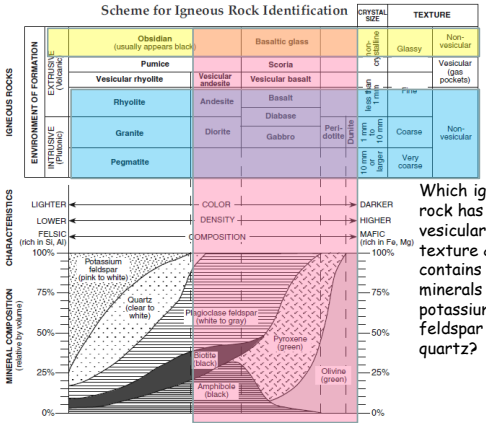




A fine grained non-vesicular Igneous rock has the following mineral composition; 50% potassium feldspar, 26% quartz; 13% plagioclase feldspar, 8% biotite mica, 3% amphibole. This rock would most likely be?



An igneous rock, which has crystallized deep below the Earth's surface, has the following composition; 70% pyroxene, 15% plagioclase feldspar, 15% olivine. This rock would most likely be?



Which igneous rock has a vesicular texture & contains the minerals potassium feldspar & quartz?

- I can name the three different types of rocks
- I can explain how rocks are classified
- I can name how an Igneous rock formed
- I can explain the difference between intrusive & extrusive
- I can explain the difference between mafic & felsic
- I can describe the different textures
- I can use the Igneous Rock Chart