

ROCKS ROCK!!!

Name : _____

Percentage of Minerals in Igneous Rock Using the ESRT

HEY you - Yes YOO! - you need this stuff!

- **Make a scale THIS WAY...**
 - Use a thin strip of *any* blank paper about 6 inches long and 1 inch wide
 - GO TO ESRT page 6, graph at bottom of the page
 - SEE Scheme for Igneous Rock Identification
 - GO TO 'Mineral Composition' and copy the scale (0 -100%)
 - It's on the left hand side
 - Copy it **EXACTLY** onto your strip of paper
- **THEN...ESTIMATE** the percent (%) of each mineral in these ROCKS
 - HOW can I do this? – HERE'S HOW...
 - Find the rock that you want in the IGNEOUS ROCKS list (on the chart at the bottom of page 6)
 - Make a LIGHT pencil line straight down from the MIDDLE of the rock type through to the mineral composition chart
 - Estimate % of each mineral in the rock type USING
 - The scale you made
 - Line it up with the light pencil line you just drew
 - Put the 0% on the bottom edge of the range for each mineral (on the chart at the bottom of page 6)
 - READ off the % at the top edge of the mineral (on the chart at the bottom of page 6)
 - Write the % of each mineral on the igneous ID chart
- Or **ESTIMATE** the percentage by lining up the edge of a piece of paper and mark the top and bottom of each mineral section. Move the marked paper to the scale of percentages on the left side of the chart and read the number.

Name a rock made only of OLIVINE _____.

Igneous ID Chart

USE ESRT (page 6/16) – Scheme for Igneous Rock Identification chart

Rock	Extrusive or Intrusive	Grain Size	Texture	Mineral Composition *All minerals are → NOT in all rocks
Andesite				K Feldspar ____% Amphibole ____% Quartz ____% Pyroxene ____% Plagioclase ____% Olivine ____% Biotite ____%
Gabbro				K Feldspar ____% Amphibole ____% Quartz ____% Pyroxene ____% Plagioclase ____% Olivine ____% Biotite ____%
Peridotite				K Feldspar ____% Amphibole ____% Quartz ____% Pyroxene ____% Plagioclase ____% Olivine ____% Biotite ____%
Obsidian				K Feldspar ____% Amphibole ____% Quartz ____% Pyroxene ____% Plagioclase ____% Olivine ____% Biotite ____%
Granite				K Feldspar ____% Amphibole ____% Quartz ____% Pyroxene ____% Plagioclase ____% Olivine ____% Biotite ____%

Matching – Match word in Column A with most correct description from Column B - Write the correct letter from Column B in the Answer Column

	Answer Column	Column A	Column B
11.		Mafic	A. Crystals < 1 mm in size
12.		Glassy texture	B. Crystals = 1 to 10 mm in size
13.		Very coarse texture	C. rocks with gas pockets
14.		Intrusive rocks	D. high density & usually dark rock
15.		Fine texture	E. Very Mafic with coarse texture
16.		Felsic	F. lower density & usually light rock
17.		Extrusive rocks	G. large crystal size
18.		Coarse texture	H. Crystals > 10 mm in size
19.		Vesicular	I. no visible crystals
20.		Dunite	J. small crystals or no visible crystals

Scheme for Igneous Rock Identification

					GRAIN SIZE	TEXTURE		
IGNEOUS ROCKS	ENVIRONMENT OF FORMATION EXTRUSIVE (Volcanic)	Obsidian (usually appears black)		Basaltic Glass	Non-crystalline	Glassy	Non-vesicular	
		Pumice		Vesicular Basaltic Glass		less than 1 mm	Fine	Vesicular (gas pockets)
		Vesicular Rhyolite	Vesicular Andesite	Scoria / Vesicular Basalt				
		Rhyolite	Andesite	Basalt				
		ENVIRONMENT OF FORMATION INTRUSIVE (Plutonic)	Granite	Diorite	Gabbro	Peridotite	1 mm to 10 mm	Coarse
	Pegmatite				Dunite			
						10 mm or larger	Very Coarse	

