

ROCK and MINERAL IDENTIFICATION

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Name: _____

Period _____ Date: _____

Objective: To investigate the properties and characteristics by which rocks and minerals are identified, and to distinguish the difference between them.

MINERALS:

Minerals are formed naturally, inorganic, solids with definite chemical composition, molecular(crystalline) structure, and specific physical properties and are identified by their physical and chemical properties

IN ORDER TO IDENTIFY A MINERAL - YOU WILL USE THE BELOW PROPERTIES

Luster (metallic - shiny like tin foil or gold, or sparkles like glitter)

Hardness (clear glass plate hardness 5.5)

Cleavage (the way the mineral breaks - even: flat surfaces, or uneven fractures: rough surfaces)

Streak (the color of the mineral's powder streaked on a white ceramic plate)

Common colors (some minerals may have many different colors so other tests must also be performed)

<u>SAMPLE #</u>	<u>1.</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>
Luster (metallic, non-metallic)				
Hardness (scale 1-10, compared to glass 5.5)				
Cleavage (yes/no)				
Streak color				
Common colors (ESRT)				
Distinguishing characteristics (ESRT)				

<u>SAMPLE #</u>	<u>5.</u>	<u>6.</u>	<u>7.</u>	<u>8.</u>
Luster (metallic, non-metallic)				
Hardness (scale 1-10, compared to glass 5.5)				
Cleavage (yes/no)				
Streak color				
Common colors (ESRT)				
Distinguishing characteristics (ESRT)				

What are the properties that are most helpful in identifying minerals? _____

IGNEOUS ROCKS:

Volcanic rocks formed from melted minerals, identified by cooling rate, **crystal size**, texture

<u>SAMPLE #</u>	<u>1.</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>
Color (light/dark/intermediate)				
Texture (coarse/fine/glassy/vesicular)				
Crystal size (large/small/glassy)				
Cooling rate (slow/fast)				
Rock name				

Igneous rocks: List the observations necessary to identify an igneous rock? _____

SEDIMENTARY:

Rocks formed on Earth's surface from sediments by cementation/compaction, identified by **grain size**, layers, fossils

<u>SAMPLE #</u>	<u>1.</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>
Texture (clastic/non-clastic)				
Grain size (varied, <0.0004 cm, 0.006-0.0004 cm, 0.2-0.006 cm)				
Fragments (comments)				
Inorganic/chemical/organic				
Rock name				
ESRT map symbol				

Sedimentary rocks: List the observations necessary to identify an sedimentary rock? _____

METAMORPHIC:

Recrystallized rocks formed by intense heat/pressure deep underground, identified by distortion, **banding**, crystals

<u>SAMPLE #</u>	<u>1.</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>
Texture (foliated/non-foliated)				
If foliated: banding/mineral alignment				
If non-foliated: reacts with acid (yes/no)				
If non-foliated: scratches glass (yes/no)				
If non-foliated: distorted pebbles (yes/no)				
Rock composition				
Rock name				
ESRT map symbol				

Metamorphic rocks: List the observations necessary to identify a metamorphic rock? _____

What are the properties of a mineral that distinguish it from a rock? _____

Match the word or phrase with the rock or mineral pictured below. On the line provided, put the correct letter of the matching rock specimen pictured. You may use the pictures more than once.

_____ 1. organic

_____ 2. distorted

_____ 3. monomineralic

_____ 4. intrusive

_____ 5. glassy texture

_____ 6. polymineralic

_____ 7. slow cooling

_____ 8. range of sediment sizes of different rock types