

Metamorphic Rock Lab

Names \_\_\_\_\_ and \_\_\_\_\_

FOLIATED/NON-FOLIATED	QUICK DESCRIPTION (MORE DETAIL ON BACK OF THIS SHEET)	ROCK NAME
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

**The List - Make Corrections as Announced**  
*anthracite / gneiss / hornfels / jasper / marble / phyllite / quartzite / schist / slate*

**\*Texture**  
A) *foliated ( slaty-fine / schistose-medium / gneissic-coarse )*  
B) *non-foliated or massive*

*Hint: Quartzite is harder than the other rocks.*

**Part 2 - Using the stereoscope, touch, smell and ???, describe each rock in at least 6 words. You could look this up. Don't. Observe. Sketch each rock, too.**

gneiss

marble

schist

phyllite

slate

quartzite

**Part 3 - On the web, read how each rock formed, record below, and add this formation info to the PARENT ROCK column in Part 1 of this lab.**

gneiss

marble

schist

phyllite





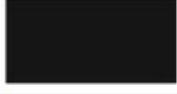
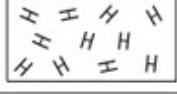


slate

quartzite

#### **Part 4**

1. Two samples with a sedimentary source/parent rock (protolith) were \_\_\_\_\_ & \_\_\_\_\_.
2. The rock that is made of the mineral calcite is \_\_\_\_\_. How can you *prove* this is true? \_\_\_\_\_
3. Which sample would be best for sculpting (carving statues out of it) & why? \_\_\_\_\_
4. Which sample(s) would be good for floor or roof tiles and why? \_\_\_\_\_
5. Why does quartzite scratch marble? (Consider what they're made of.) \_\_\_\_\_
6. Would you expect to find air bubbles in these rocks as you would in pumice or scoria? YES/NO Why? \_\_\_\_\_
7. Would you expect to find fossils in these samples? YES/NO Why? \_\_\_\_\_

## Scheme for Metamorphic Rock Identification

TEXTURE		GRAIN SIZE	COMPOSITION	TYPE OF METAMORPHISM	COMMENTS	ROCK NAME	MAP SYMBOL
FOLIATED	MINERAL ALIGNMENT	Fine	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="width: 10px; height: 100px; background-color: #cccccc; margin: 2px;"></div> <div style="width: 10px; height: 100px; background-color: #cccccc; margin: 2px;"></div> <div style="width: 10px; height: 100px; background-color: #cccccc; margin: 2px;"></div> <div style="width: 10px; height: 100px; background-color: #cccccc; margin: 2px;"></div> <div style="width: 10px; height: 100px; background-color: #cccccc; margin: 2px;"></div> <div style="width: 10px; height: 100px; background-color: #cccccc; margin: 2px;"></div> </div> <p style="font-size: 8px; margin: 0;">MICA QUARTZ FELDSPAR AMPHIBOLE GARNET PYROXENE</p>	Regional (Heat and pressure increases) ↓	Low-grade metamorphism of shale	<b>Slate</b>	
		Fine to medium			Foliation surfaces shiny from microscopic mica crystals	<b>Phyllite</b>	
		Medium to coarse			Platy mica crystals visible from metamorphism of clay or feldspars	<b>Schist</b>	
	BANDING	Medium to coarse			High-grade metamorphism; mineral types segregated into bands	<b>Gneiss</b>	
NONFOLIATED		Fine	Carbon	Regional	Metamorphism of bituminous coal	<b>Anthracite coal</b>	
	Fine	Various minerals	Contact (heat)	Various rocks changed by heat from nearby magma/lava	<b>Hornfels</b>		
	Fine to coarse	Quartz	Regional or contact	Metamorphism of quartz sandstone	<b>Quartzite</b>		
		Calcite and/or dolomite		Metamorphism of limestone or dolostone	<b>Marble</b>		
	Coarse	Various minerals		Pebbles may be distorted or stretched	<b>Metaconglomerate</b>	