

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Life Science

Period: \_\_\_\_\_

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### Classifying Metamorphic Rocks

Metamorphic rocks may be formed by different processes. Generally they are re-crystallized in the solid state by pressure and heat and may be influenced by the introduction of chemically active solutions. Igneous, sedimentary and pre-existing metamorphic rocks may become new metamorphic rocks. The change may be partial and some of the original characteristics retained, or it may be so complete that new minerals are formed and the texture altered.

In this activity, you will identify and examine the foliation of metamorphic rocks. **Foliated** rocks show flat texture and layering. **Non-foliated** rocks are homogeneous or massively crystalline and exhibit no layering.

#### Procedures:

Using the descriptions for each rock in the five groups, identify the names of each one, placing the number in the correct column, and identify it as foliated or non-foliated.

GROUP A			
Rock Number	Description	Name	Foliated or Non-Foliated?
	Composed primarily of small flakes of shiny mica with larger crystals of yellow-brown staurolite.	Staurolite mica schist	
	Metamorphosed sandstone which is partially recrystallized.	Quartzite	
	Metamorphosed from shale. It has extremely fine texture and splits cleanly along its rock planes.	Slate	

<b>GROUP B</b>			
<b>Rock Number</b>	<b>Description</b>	<b>Name</b>	<b>Foliated or Non-Foliated?</b>
	May be formed from granites or sedimentary rocks and typically shows layering of black mica, quartz and pink feldspar.	Biotite gneiss	
	Composed primarily of the minerals gray epidote and white quartz.	Epidosite	
	Dull rock composed almost completely of the black mineral chlorite. Layered in texture.	Chlorite schist	

<b>GROUP C</b>			
<b>Rock Number</b>	<b>Description</b>	<b>Name</b>	<b>Foliated or Non-Foliated?</b>
	Formed with a parallel orientation of dark gray graphite flakes.	Graphite schist	
	Consists of shiny black amphiboles and white plagioclase feldspar.	Amphibolite	
	Fine grained rock that may retain some of its sedimentary structure. Usually formed from clays or shales.	Hornfels	

<b>GROUP D</b>			
<b>Rock Number</b>	<b>Description</b>	<b>Name</b>	<b>Foliated or Non-Foliated?</b>
	Composed primarily of flakes of gray-black mica with larger crystals of garnet.	Garnet mica schist	
	Recrystallized limestone containing some impurities.	Serpentine marble	
	Transition rock between slate and schist. Glossy sheen with chlorite crystals.	Phyllite	

<b>GROUP E</b>			
<b>Rock Number</b>	<b>Description</b>	<b>Name</b>	<b>Foliated or Non-Foliated?</b>
	Talc in rock gives it a smooth texture.	Soapstone	
	Metamorphosed serpentine rock derived from the alteration of greenish olivine and impure limestone.	Serpentinite	
	Recrystallized limestone. Very strong and can be polished to a beautiful luster. Sparkly luster.	Marble	