

Name: _____

Rocks & Minerals

Notes

Minerals

KEY CONCEPT #1:

What is a mineral?

It is a _____, _____ substance which has a

What would be the opposite of this?

KEY CONCEPT #2:

What causes minerals to have different physical properties?

Give an example of two minerals which have the same chemical composition but different physical properties.

KEY CONCEPT #3:

The Main Physical Properties Used to Identify Minerals

1. Color _____

2. Streak _____

3. Luster _____

metallic: _____

nonmetallic: _____

4. Cleavage

5. Fracture

6. Hardness

MOH'S SCALE OF HARDNESS

<i>Hardness</i>	<i>Mineral</i>	<i>Hardness</i>	<i>Mineral</i>
1 (softest)		6	
2		7	
3		8	
4		9	
5		10 (hardest)	

Mineral Composition

KEY CONCEPT #4: *Minerals have a definite chemical composition*

What two elements, by mass, make up the greatest percentage of the Earth's crust?

a. _____

b. _____

These two elements combine to form compounds called _____.

They combine in a specific structure called a:

Draw this structure below.

Rocks

MONO-MINERALIC

POLY-MINERALIC

MOST ROCKS ARE _____ - MINERALIC

THREE CLASSIFICATIONS OF ROCKS ARE:

Draw the rock cycle below.

Sedimentary Rocks

Key Concept #1: Most sedimentary rocks are made of pieces () of other rocks.

Key Concept #2: Name two processes that form sedimentary rocks.

a. _____

b. _____

Key Concept #3: In what type of environment are most sedimentary rocks formed?

Key Concept #4: Key Identifying Features of Sedimentary Rocks

a. Strata _____

b. Clasts _____

c. Fossils _____

Sedimentary Rock ESRT Questions

1. _____ Name a non-clastic sedimentary rock which is composed of calcite.
2. _____ Name a clastic sedimentary rock which has mixed, angular particle sizes.
3. _____ Name a non-clastic sedimentary rock composed of marine shell fragments.
4. _____ Name a dark-colored, organically formed sedimentary rock composed mostly of carbon.
5. _____ Name the sedimentary rock formed by the process of evaporation and composed mostly of gypsum.

Sedimentary Rock Questions

1. According to the Earth Science Reference Tables, which characteristic determines whether a rock is classified as a shale, a siltstone, a sandstone, or a conglomerate?
 - (a) the mineral composition of the sediments within the rock
 - (b) the density of the sediments in the rock
 - (c) the absolute age of the sediments within the rock
 - (d) the particle size of the sediments within in the rock
2. According to the Earth Science Reference Tables, some sedimentary rocks form as the direct result of
 - (a) freezing of the material
 - (b) cementation of rock fragments
 - (c) melting of minerals
 - (d) solidification of molten magma
3. According to the Earth Science Reference Tables, which is a sedimentary rock that forms as a result of precipitation from seawater?
 - (a) shale
 - (b) basalt
 - (c) conglomerate
 - (d) gypsum
4. Which property best describes a rock which has formed from sediments?
 - (a) distorted structure
 - (b) crystalline structure
 - (c) banding or zoning of minerals
 - (d) fragmented particles arranged in layers
5. Which is most likely a nonsedimentary rock?
 - (a) a rock composed of layers of gravel cemented together
 - (b) a rock consisting of large intergrown crystals
 - (c) a rock containing fossil shells
 - (d) a rock showing ripple marks and mud cracks

Igneous Rocks

Key Concept #1: How are igneous rocks formed?

Key Concept #2: Name two places where igneous rocks form.

a. _____

b. _____

Key Concept #3: What determines the crystal size in igneous rocks? _____



Large crystals indicate a _____

Small crystals indicate a _____

Key Concept #4: What is the difference between extrusive and intrusive igneous rocks?

Key Concept #5: *Characteristics used to classify igneous rocks.*

a. **Texture**

_____ }
_____ }

_____ }
_____ }

b. **Color** _____ or _____

c. **Density** for its size, _____ or _____ mass

d. **Composition** _____ -----contains Fe and Mg

_____ -----contains Al

Key Concept #6: *Key Identifying Features of Igneous Rocks*

a. **Glassy texture:** _____

b. **Interlocked grains:** _____

Igneous Rock ESRT Questions

1. _____ An extrusive, dark-colored, glassy textured igneous rock composed mostly of pyroxene.
2. _____ A coarse-grained, felsic igneous rock, composed of 50% quartz, 25% potassium feldspar, and 25% plagioclase feldspar.
3. _____ A fine-grained igneous rock containing 25% olivine.

Igneous Rock Questions

1. What observation about an igneous rock would support the inference that the rock cooled slowly underground?
 - a. The rock is light in color and low in density
 - b. The rock is about 50% plagioclase feldspar.
 - c. The rock has large crystals.
 - d. The rock has fossils.

2. Which two igneous rocks could have the same mineral composition?
 - a. pumice and scoria
 - b. peridotite and andesite
 - c. rhyolite and diorite
 - d. gabbro and basalt

3. Rhyolite and granite are alike in that they both are:
 - a. fine grained
 - b. mafic
 - c. felsic
 - d. dark-colored

4. Most igneous rocks contain
 - a. fossils
 - b. sediments
 - c. intergrown crystals
 - d. recrystallized minerals

5. An igneous rock that has a glassy texture, mostly likely solidified
 - a. quickly on/near the Earth's surface
 - b. quickly deep under the Earth's surface
 - c. slowly on/near the Earth's surface
 - d. slowly deep under the Earth's surface

6. Most igneous rocks form by which processes?
 - a. heat and pressure
 - b. melting and solidification
 - c. erosion and deposition
 - d. compaction and cementation

Metamorphic Rocks

Key Concept #1: How are metamorphic rocks formed?

Key Concept #2: Melting **DOES NOT** occur.

If melting does occur, it is classified as a(n) _____ rock.

Key Concept #3: What is the difference between Regional and Contact Metamorphism?

REGIONAL:

CONTACT:

Key Concept #4: *Key Identifying Features of Metamorphic Rocks*

a. Foliation:

b. Distorted Structure:

c. Key Identifier Minerals:

_____ **Dark Red Color**

_____ **Shiny, flaky mineral**

Metamorphic Rock ESRT Questions

1. _____ A foliated, coarse-grained metamorphic rock with distinct banding.
2. _____ A non-foliated metamorphic rock formed from the metamorphism of quartz.
3. Identify the sedimentary rock each of the following metamorphic rocks started as:

Metamorphic Rock Name	Sedimentary Rock Formed From
Quartzite	
Slate	
Marble	