

4) Hardness - The mineral's ability to resist being scratched or to scratch another mineral

Test: TAKE THE MINERAL DRAG IT ACROSS THE GLASS IF IT SCRATCHES THE GLASS IT IS HARDER THAN 5.5

Moh's hardness scale - a set of 10 minerals with known hardnesses

A sample mineral is compared to the MOH'S SCALE TO SEE WHAT HARDNESS THE SAMPLE MINERAL HAS.

Moh's hardness scale:

1. Talc
2. Gypsum
3. Calcite - 2.5 finger nail
4. Fluorite
5. Apatite - glass
6. Feldspar - 5.5
7. Quartz
8. Topaz
9. Corundum
10. Diamond

5.5 - approximate hardness of a glass plate

Breakage

5) Cleavage - When you break the mineral and it breaks with flat side(s)

Test: look for flat surfaces that reflect the light back to you.

6) Fracture - When you break the mineral and it breaks with uneven surfaces. The light will shine in all different directions.

7) Composition - The elemental formula of the mineral. ex: Quartz is made of Silicon & Oxygen SiO_2 ON PAGE 16 OF THE ESRT THE COMPOSITION IS LISTED FOR EACH MINERAL.

8) Special Properties - Specific properties that only that mineral has that can be used to identify a mineral easily

Examples - Halite - TASTE like salt.
Calcite - bubbles with acid
Uranium - radioactive

Fact(s) to memorize: 7 & 8



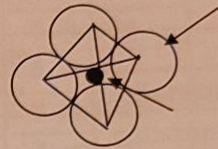
B. Minerals are grouped according to their Chemical Composition

1. The elements Silicon and Oxygen combine to form tetrahedral units.

Together, the mass of these two elements are most abundant in the Earth's crust. *

Silicates - any mineral composed of silicon and oxygen

Tetrahedral
units



2. The physical properties of minerals depend upon the INTERNAL *

Arrangements of Atoms *

Example:

Diamond
Hard

100 %
Carbon

Graphite
soft

Both made of the same element
atoms arranged differently

3. Of the thousands of known minerals, only a few are found almost everywhere
4. If you know how to identify about a 8 of the most common minerals you will be able to identify minerals in most rocks you are likely to find.
5. Nearly all rocks are composed of one or more MINERALS
6. Minerals are the building blocks of ~~most~~ rocks.

~~Some exceptions include:~~

and:

Fill in the missing information in the chart below by using the "Properties of Common Minerals" in the *Earth Science Reference Tables* page 16

Luster	Hardness	Composition	Color	Mineral Name
Nonmetallic	6	$KAlSi_3O_8$	white to pink	Potassium Feldspar
NM	2	S	Yellow to Amber	Sulfur
	4		colorless/variable	
Metallic	2.5		metallic silver	
		$Mg_3Si_4O_{10}(OH)_2$		Talc
	1-6.5	Fe_2O_3		
Nonmetallic	2	$CaSO_4 \cdot 2H_2O$	white to pink	
Nonmetallic		CaF_2		
			brassy yellow	
		$Fe_3Al_2Si_3O_{12}$	dark red	
		C		
Nonmetallic	3		colorless/variable	
Metallic	5.5-6.5		black to silver	
	6.5	$(Fe, Mg)_2SiO_4$		

Which mineral has the following characteristics?

Mineral Characteristics	Mineral Name
Bubbles with acid when powdered	
Cleaves at 56° and 124°	
Food additive and melts ice	
Easily scratched by a fingernail	
Red-brown streak	
Feels greasy	
Used in glass, jewelry and electronics	
NYS Gemstone	