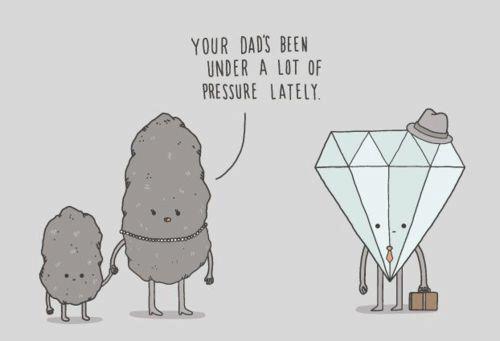
**Earth Science 11: Earth Materials**



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

**Earth Science 11: Earth Materials: Minerals**

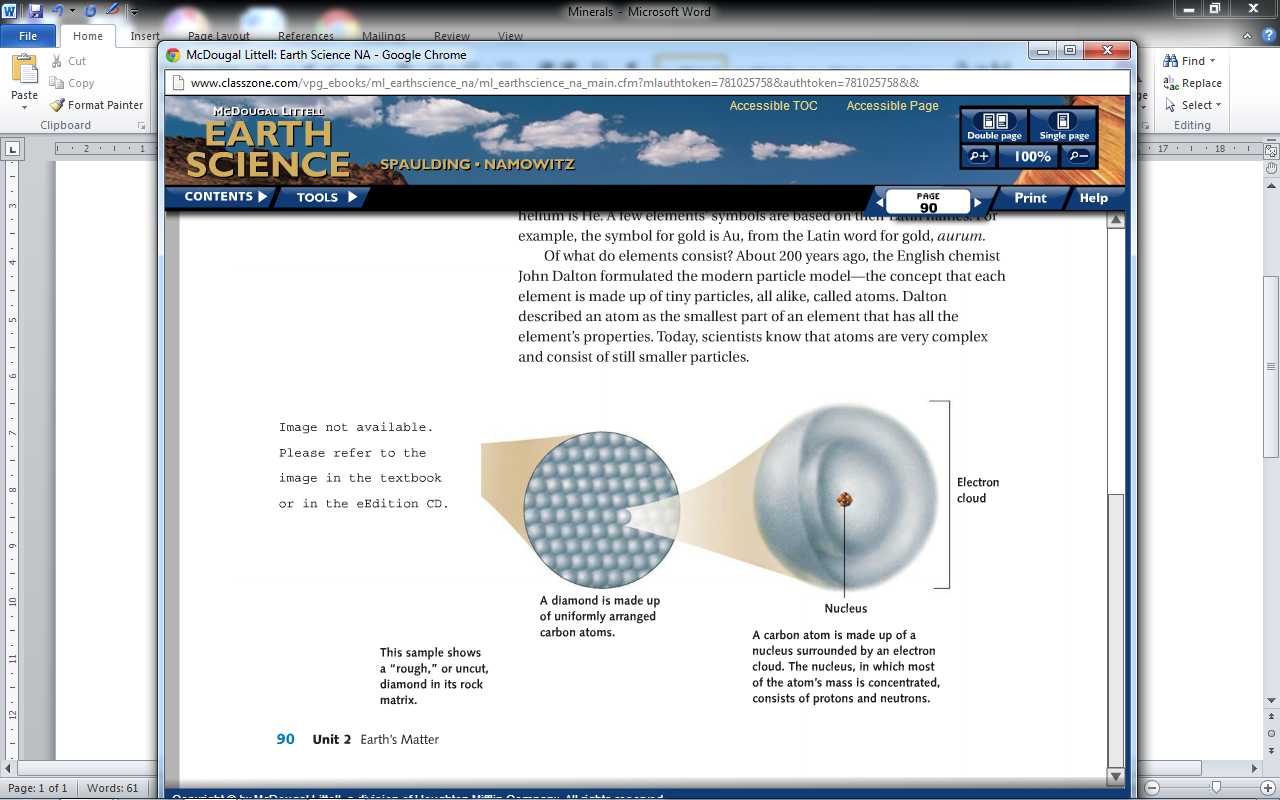
**Textbook: Chapter 1**

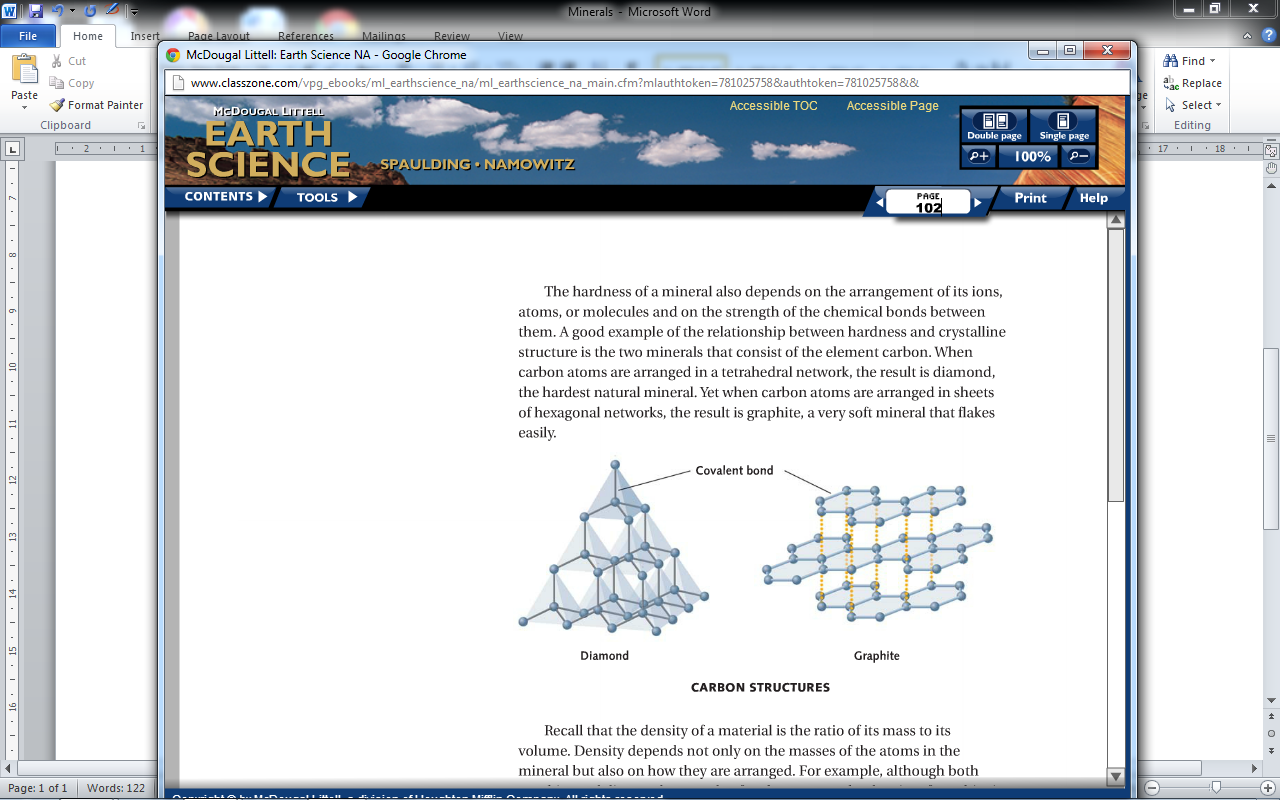
|  |
| --- |
| **1.1: Matter and Atoms** |

* Everything with mass and volume is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which is made up of

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Elements are made up of particles called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



*  the internal arrangement of atoms in a substance as this determines its properties.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is a Mineral?**

Minerals have the following characteristics:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

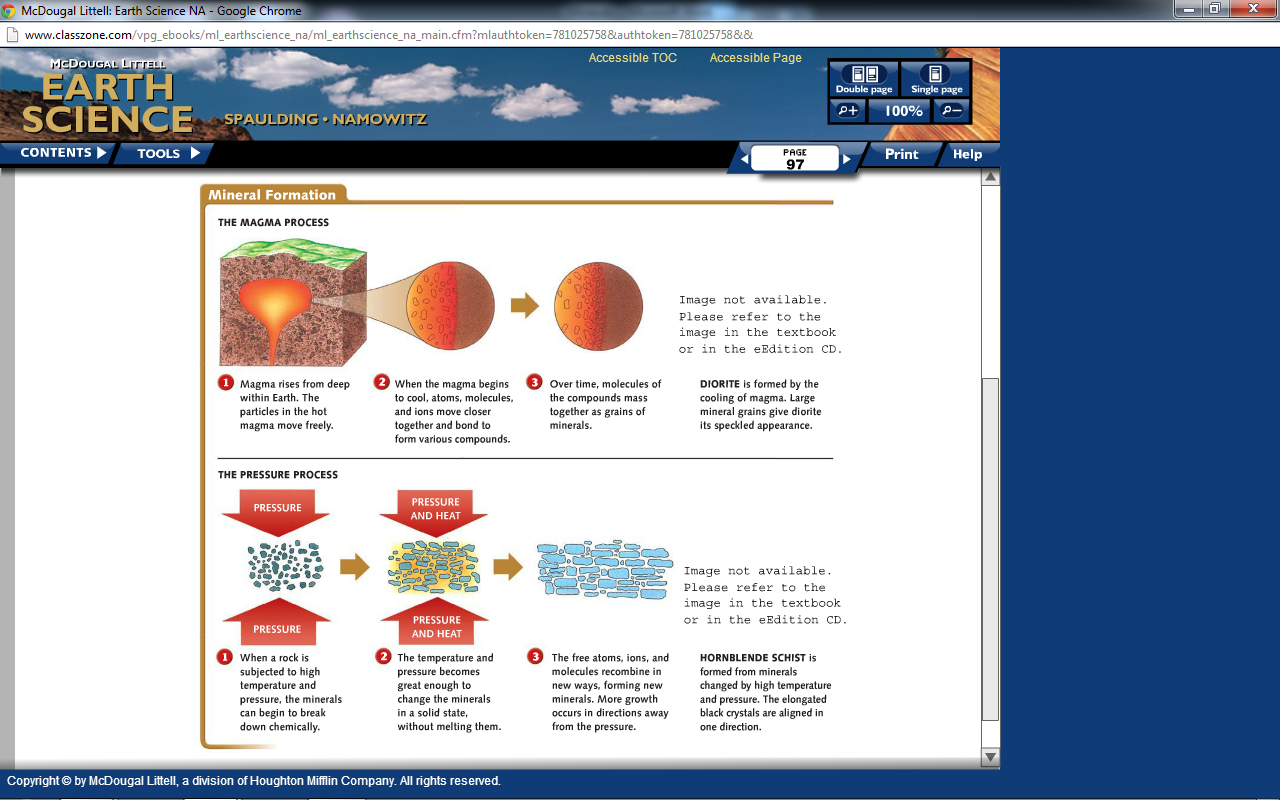
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *Mexico’s Cueva de los Cristale*

**How do Minerals Form?**

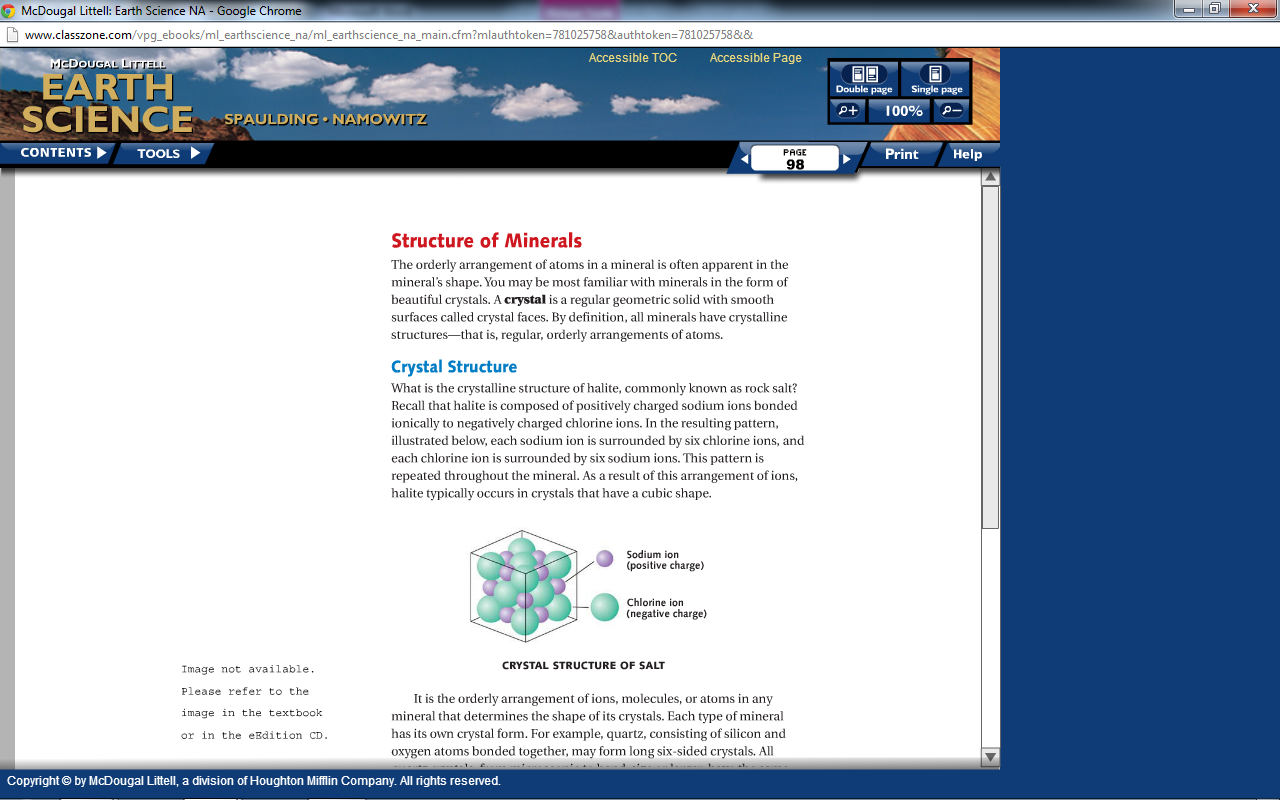


|  |
| --- |
| **1.4: Properties of Minerals** |

*\*Use workbook activities 1.1 – 1.5 (pg. 2 – 8) to investigate the properties used in mineral identification.\**

**Structure of Minerals: Crystal Faces**

* A crystal is a geometric solid with smooth surfaces called crystal faces.



* Ionic bonding between Na+ and Cl- ions results in a repeating pattern of each sodium ion being surrounded by six chlorine ions and each chlorine ion being surrounded by six sodium ions. Produces a cubic crystal (all Sodium Chloride crystals will have this shape!).
* Each mineral crystal has a unique shape that can be used to identify it.

Are crystal faces always present?

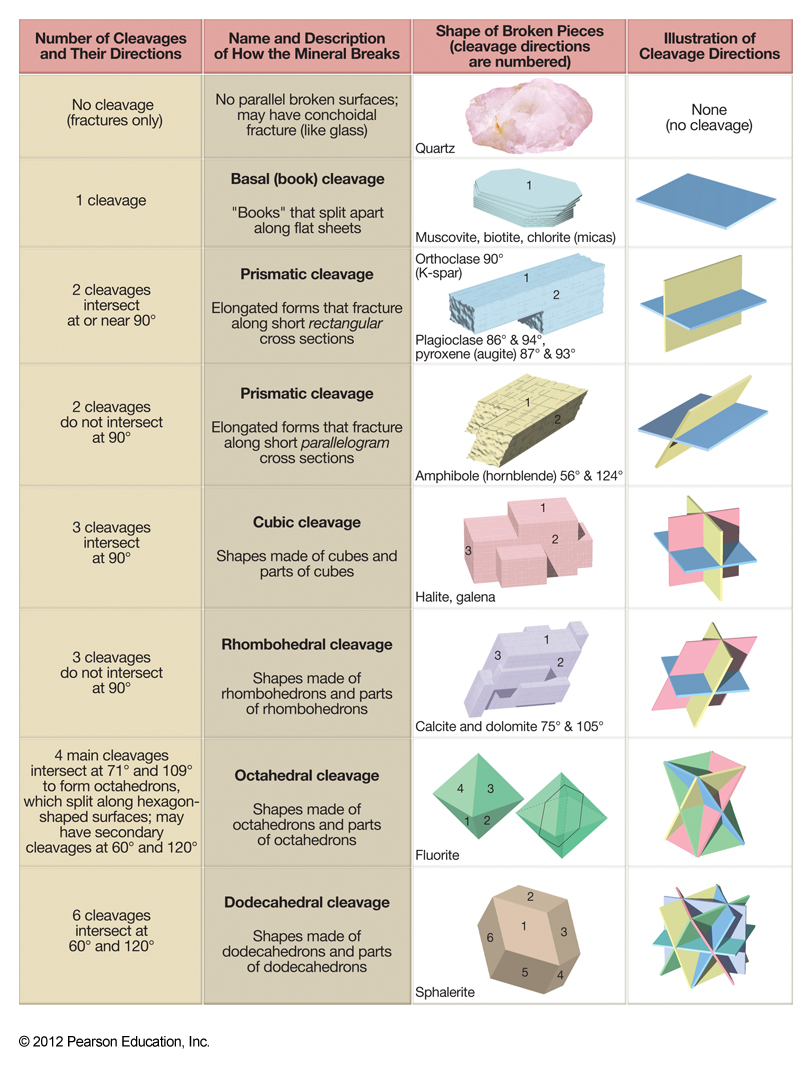
**Structure of Minerals: Mineral Cleavage**

* Cleavage: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

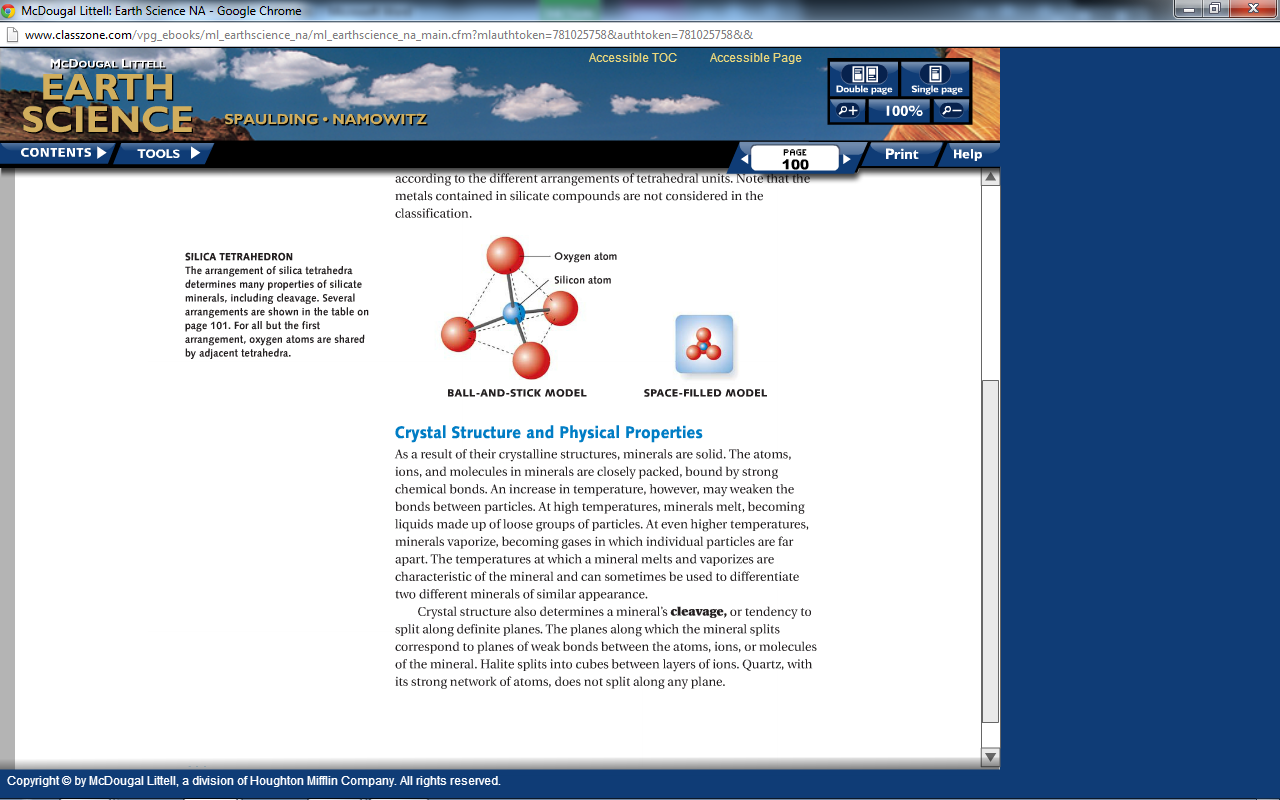
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

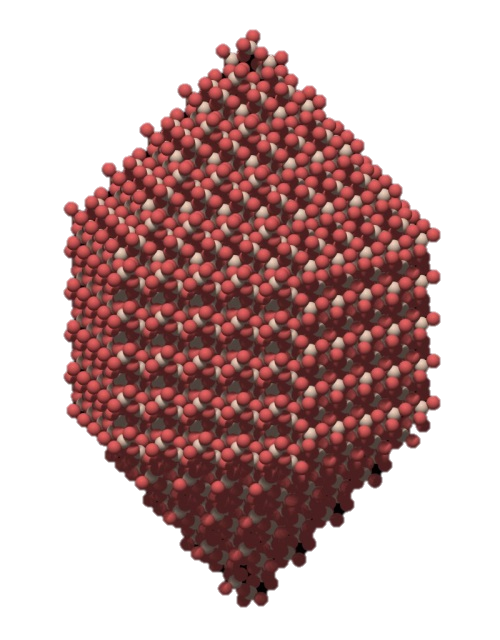
Halite (NaCl): Cubic cleavage Calcite (CaCO3): Rhombohedral cleavage.

***\*Complete Activity 1.6 (pg. 10 – 11) in your workbook***

*9 and 12 Mineral Structure: Silicates*

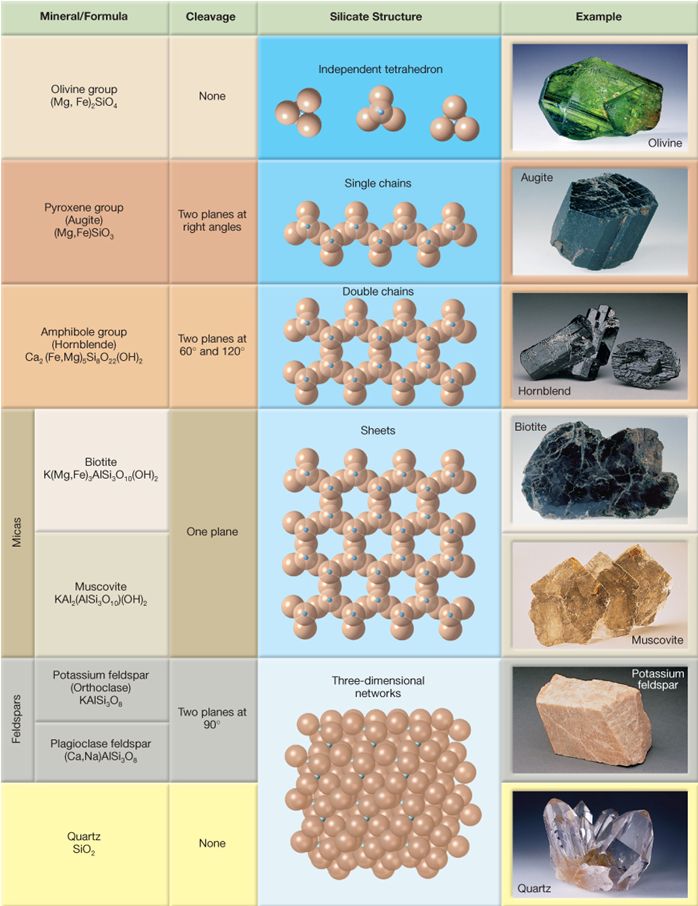
|  |
| --- |
| **1.5 Mineral Groups** |

* Minerals composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are called silicates.
  + More than \_\_\_\_\_% of Earth’s crust are silicates
* Silica tetrahedrons are the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ of silicates.





* Arrangement of silica tetrahedrons in a silicate determines many minerals characteristics such as melting point, cleavage, hardness and density.

***\*Complete Mineral ID Lab (Activity 1.9 pg.13)***