

Periodic Table

Atom

smallest part of an element

Element

atoms join together to form an element

all atoms share the same properties

Periodic Table

table that groups elements according to the atomic mass

each element is assigned an atomic number to represent it

may look different from another periodic table - look in planner

elements group into

families/group = columns

periods = rows

Look at the Periodic Table

Symbol

Name

Number

Mass

Find

Lithium

Potassium

Mercury

Tin

Boron

What do you notice about the symbols of each element?

some match the name

no relationship with name

all capital

first letter capital, second letter lower case

the letter I or L

How many elements are in these compounds?

H₂O

CHO

NaCl

2

3

2

How many atoms are in the above compounds?

H₂O

CHO

NaCl

3

3

2

Chapter 3-Minerals in the Earth's Crust

This chapter will help you learn about the minerals found in the Earth's crust. The chapter describes the structure of minerals, mineral identification, environments that minerals form, the mining of minerals, and mineral uses.

Video - Minerals

Mineral Characteristics

Mineral

naturally occurring, nonliving solid, with a definite structure and composition

Characteristics

formed by natural processes by the Earth, not made in a lab

minerals inorganic

not made of living matter

coal--made from living plants and animals

wood--made of trees

solid

definite shape

definite chemical composition

elements

quartz--silicon and oxygen

atoms arranged in a pattern

form a geometric shape = **crystal**

crystal = atoms arranged in a repeating pattern

Element

can not be broken down into simpler substances

Atom

smallest part of an element

Compound

made of two or more elements

Mineral Compositions

*98% of the Earth's crust is made of 8 elements:

oxygen, silicon, aluminum, iron, calcium, sodium, potassium, magnesium

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Major groups of Minerals

Silicates

largest group

contains silicon and oxygen (most abundant in the Earth's crust)

Non-silicates

1. **Carbonates-- (CO₃)**

carbon and oxygen

2. **Oxides**

compounds of elements and oxygen

3. **Sulfides**

compounds of elements and sulfur

4. **Sulfates-- (SO₄)**

compounds of elements with sulfur and oxygen

5. **Halide**

compounds of elements and chlorine, fluorine, iodine, bromine

6. **Native Element**

one element

Composition is not the only way to identify a mineral.

Physical Properties

*properties you can observe without changing a substance into a new substance

Mineral Identification

1. **Color**

2. **Hardness**

how easy is it scratch

talc is the softest

diamond is the hardest

Moh's scale of hardness

list of the 10 most common minerals from 1-10

1 = softest

10 = hardest

3. **Luster**

shiny or dull
metallic--shines like metal
nonmetallic-- dull

4. **Streak**

color of a mineral when broken up and powdered

5. **Cleavage**

minerals break along smooth flat surfaces

6. **Fracture**

minerals break with a rough or jagged edge

7. **HCL**

hydrochloric acid

Formation of Minerals

cooling of magma

cools--atoms line up until no more atoms are present

evaporation

minerals in a liquid, water evaporates leaving
behind atoms of a mineral

salt water evaporates leaving behind halite--rock salt