


# Introduction to Minerals

November 10, 2014


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## Matter


- Matter
  - Three Main Types:



Solid



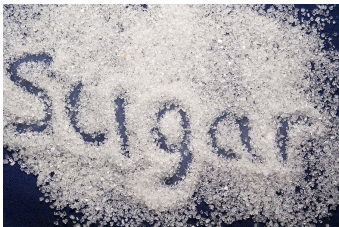
Liquid



Gas

## Describing Matter

- From the warm-up:  
How would you describe sugar?




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## Properties of Matter

- A property is any characteristic that helps identify and object
- What are some properties of Mrs. Feldmann?
- Sometimes descriptive properties are not enough to identify and object or substance

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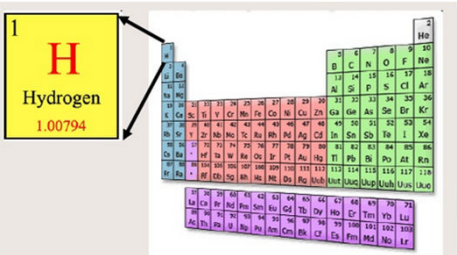
## Properties of a Peach

Color:		Size/Shape:
Feel:		Mass:
Volume:		Smell:
Taste:		

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## Periodic Table

- On the periodic table what does each box with a letter(s) stand for?



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## Elements

- The most common elements in Earth's crust are:

Oxygen	O	46.6%
Silicon	Si	27.7%
Aluminum	Al	8.1%
Iron	Fe	5.0%
Calcium	Ca	3.6%
Sodium	Na	2.8%
Potassium	K	2.6%
Magnesium	Mg	2.1%
All others		1.5%

## Minerals

- Minerals** – Naturally occurring, inorganic solid with a specific chemical composition and a definite crystalline structure.
- Inorganic = The substance was not formed by or from living things such as plants or animals.
- Chemical elements or compounds.
- Minerals can be identified by their physical and chemical properties:**
  - Crystal Structure
  - Color
  - Luster
  - Streak
  - Hardness
  - Cleavage/Fracture
  - Density

## Crystal Structure of Minerals

- Crystal Structure has an ordered pattern of atoms.**
  - Examples: Cubic, Tetragonal, Hexagonal, Orthorhombic, Monoclinic, and Triclinic

<b>Pyrite</b> (Iron & Sulfur) Cubic Structure 	<b>Pyromorphite</b> (Lead & Chlorophosphate) Hexagonal Structure 
<b>Wulfenite</b> (Lead, Molybdenum, & Oxygen) Tetragonal Structure 	<b>Topaz</b> (Aluminum, Silicon, Oxygen, & Fluorine) Orthorhombic Structure 

## Silicates

- Silicates are Minerals that contain silicon and oxygen**
- Make up 96% of the minerals found in Earth's crust**

Helpful Textbook Pages: 84-91; Glossary

### Today's Main Idea

- Minerals are naturally occurring, inorganic solids with a specific chemical composition and crystalline structure.**

### Explore Question

2. Explore today's main idea with this question:  
Give three examples of where you come across minerals in your everyday life.

### Vocabulary

- Luster
- Streak
- Density