Introduction to Minerals
November 10, 2014

Matter
- Matter
- Three Main Types:
  - Solid
  - Liquid
  - Gas

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

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

Properties of a Peach
- Color:
- Feel:
- Volume:
- Taste:
- Size/Shape:
- Mass:
- Smell:

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

- Hydrogen
  - 1.00794
Elements
- The most common elements in Earth’s crust are:

<table>
<thead>
<tr>
<th>Element</th>
<th>Symbol</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td>O</td>
<td>46.6%</td>
</tr>
<tr>
<td>Silicon</td>
<td>Si</td>
<td>27.7%</td>
</tr>
<tr>
<td>Aluminum</td>
<td>Al</td>
<td>8.1%</td>
</tr>
<tr>
<td>Iron</td>
<td>Fe</td>
<td>5.0%</td>
</tr>
<tr>
<td>Calcium</td>
<td>Ca</td>
<td>3.6%</td>
</tr>
<tr>
<td>Sodium</td>
<td>Na</td>
<td>2.8%</td>
</tr>
<tr>
<td>Potassium</td>
<td>K</td>
<td>2.6%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Mg</td>
<td>2.1%</td>
</tr>
<tr>
<td>All others</td>
<td></td>
<td>1.5%</td>
</tr>
</tbody>
</table>

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

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

Today’s Main Idea
- Minerals are naturally occurring, inorganic solids with a specific chemical composition and crystalline structure.

Explore Question
1. Give three examples of where you come across minerals in your everyday life.

Vocabulary
- Luster
- Streak
- Density