



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Group: \_\_\_\_\_

# MATH CONNECTIONS

Rocks are classified based on their formation processes and their mineral compositions. Most rocks contain some minerals. Nine families of rocks are classified by the minerals found in them. The table below shows some of those rock families, the minerals found in them, and the mineral's chemical makeup.

**Rock Families and Minerals**

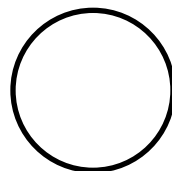
Rock Family	Minerals	Chemical Makeup
Elements	Gold	100% Gold
	Silver	100% Silver
	Copper	100% Copper
	Carbon	100% Carbon
	Sulfur	100% Sulfur
Sulfides	Cinnabar	86% Mercury 14% Sulfur
	Galena	86% Lead 14% Sulfur
	Pyrite	47% Iron 53 % Sulfur
Halides	Fluorite	51% Calcium 49% Fluorine
	Halite	40% Sodium 60% Chlorine
Oxides	Corundum	53% Aluminum 47% Oxygen
	Cuprite	90% Copper 10% Oxygen
	Hematite	70% Iron 30% Oxygen

Use the table to answer the questions below:

1. What element do the minerals found in sulfide rocks have in common?

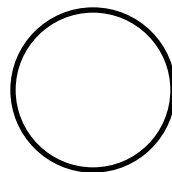
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2. Sketch three pie charts to represent the chemical makeup of the minerals that comprise the sulfide family.



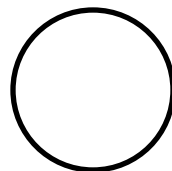
**Cinnabar**

- ☐ Mercury  
☐ Sulfur



**Galena**

- ☐ Lead  
☐ Sulfur



**Pyrite**

- ☐ Iron  
☐ Sulfur

3. What do rocks in the oxide group have in common?

\_\_\_\_\_

4. If a rock in the oxide family was found to contain 260 grams of cuprite in it, what percent of the cuprite would be copper?

\_\_\_\_\_ percent

# MATH CONNECTIONS

## Rock Families and Minerals

Rock Family	Minerals	Chemical Makeup
Carbonates	Calcite	40% Calcium 12% Carbon 48% Oxygen
	Dolomite	22% Calcium 13% Magnesium 13% Carbon 52% Oxygen
	Malachite	57% Copper 1% Hydrogen 6% Carbon 36% Oxygen
Sulfates	Anhydrite	29% Calcium 24% Sulfur 47% Oxygen
	Gypsum	23% Calcium 2% Hydrogen 19% Sulfur 56% Oxygen
Phosphates	Apatite	40% Calcium 18% Phosphorus 38% Oxygen 4% Fluorine
Silicates (SiO <sub>2</sub> )	Beryl	5% Beryllium 10% Aluminum 31% Silicon 53% Oxygen
	Muscovite	10% Potassium 20.5% Aluminum 21% Silicon 0.5% Hydrogen 47% Oxygen 1% Fluorine
	Orthoclase	14% Potassium 10% Aluminum 30% Silicon 46% Oxygen
	Quartz	47% Silicon 53% Oxygen
Organics	Amber	11% Hydrogen 80% Carbon 9% Oxygen

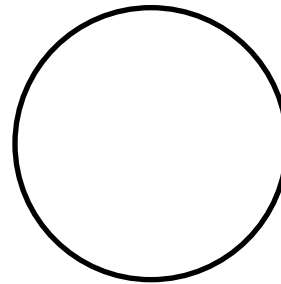
5. Which two elements do all of the minerals in the carbonate family have in their chemical makeup?

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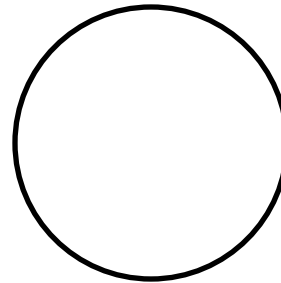
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6. Create two pie charts to represent the chemical makeup of the minerals found in rocks in the sulfate family.



### Anhydrite

- ☐ Calcium  
☐ Sulfur  
☐ Oxygen



### Gypsum

- ☐ Calcium  
☐ Sulfur  
☐ Oxygen

7. If a rock in the silicate family was found to contain 150 grams of quartz in it, what percent of the quartz would be silicon?

\_\_\_\_\_ percent