Outline Section 3.1 Glencoe Earth science Text Name: _____ # ____

Pages 62-66

1. What is a mineral?

2. How many different minerals are found on the Earth? _____

3. List the five characteristics that all minerals share (page 62)
   A.
   B.
   C.
   D.
   E.

4. What does it mean to be "inorganic"?

5. All solids have a definite _____ and _____.

6. Use the glossary to define element and compound

   Elements-

   Compound-

7. Why is opal classified as a mineraloid?

8. Each little grain of salt in a salt shaker is a _____.

9. What is a crystal?

10. Why can you not see the crystal structure on the outside of the quartz in figure 3-2B on page 63?

11. Why can you see the crystals structure on the outside of the quartz in figure 3-2A on page 63?

12. One way crystals form is from the cooling of hot melted material called _____.

13. As it cools, its _____ lose energy, move _____ _____ and begin to combine into _____.

14. Molecules of different compounds that are forming begin to arrange themselves into _____ _____.

15. What two things in magma determine what minerals will form?

    A.

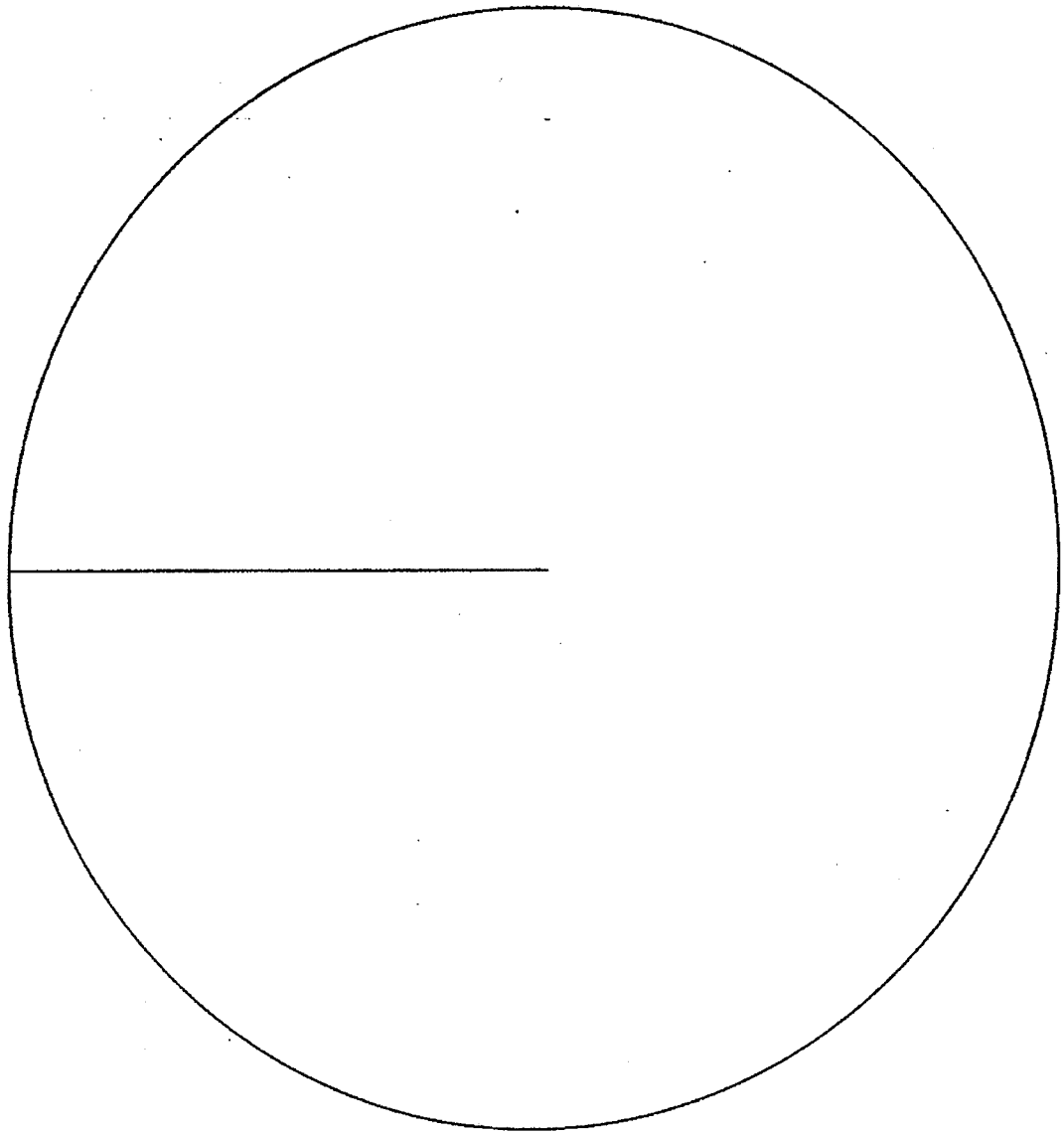
    B.

16. What happens when molten rock material cools rapidly?

Skill Application 5 Period _____ Name: _____ # _____

Graph of the Most Common Elements in the Earth's Crust

Use you protractor and the following information to construct a circle graph of the elements in the earth's crust by weight. Angles you will measure are: Oxygen = 168°, Silicon = 100°, Aluminum = 29°, Iron = 18°, Calcium = 13° Sodium = 10°, Potassium = 9° Magnesium = 5°, other = 8° (label graph with element symbols)



1. What is the most abundant and very important metal found in the Earth's crust? _____
2. What is the most common element in the crust of the Earth? _____.
3. List in order the six most common elements in the crust: _____
4. Where on the graph would you find gold, silver, and carbon? _____
5. What element makes up about 25% of the crust? _____
6. What element makes up a little less than 50% of the crust? _____.

Mineral Groups

Minerals are grouped according to their composition. Most rock forming minerals belong to the silicates group because silicon and oxygen are the two most abundant elements in the Earth's crust.

Mineral Group	Elements must contain	Elements may contain
Silicates	Si and O	Ca, Al, Mg, Fe, Na, K, others
Carbonates	C and O	Ca, Mg, others
Oxides and Hydroxides	O (no C, P, S)	H, Fe, Al, others
Phosphates	P and O	
Sulfides	S (no O)	Fe, Pb, others
Sulfates	S and O	Ca, others
Halides	metal element chemically combined with F, Cl, Br, or I	
Native Elements	one element only	

Complete the following table using information in Appendix M and N p.723-725.

Mineral	Elements it contains	Mineral Group
quartz		
corundum		
biotite		
graphite		
sphalerite		
copper		
magnetite		
bornite		
talc		
garnet		
olivine		
sulfur		
dolomite		
fluorite		
calcite		
augite		
halite		
topaz		
orthoclase feldspar		
gypsum		