FLINN SCIENTIFIC

Name_____

Minerals, Metals, and Mining Worksheet

Data Table 1

Mining Site	A			B		
Sample	**1**	**2**	**3**	**1**	**2**	**3**
Mass of ore and dish, g						
Mass of dish, g						
Mass of ore, g						
Mass of gold and dish, g						
Mass of dish, g						
Mass of gold, g						
Mass of silver and dish, g						
Mass of dish, g						
Mass of silver, g						

Data Table 2

Mining Site	A				B			
Sample	**1**	**2**	**3**	**Avg.**	**1**	**2**	**3**	**Avg.**
Percent concentration, gold								
Percent concentration, silver								

Data Table 3

Mining Site	A	B
Average gold mass/kg ore, g		
Gold Profit/kg ore		
Average silver mass/kg ore, g		
Silver Profit/kg ore		
Total Profit/kg ore		

Name_____

Post-Lab Calculations

1. Calculate the mass of ore in each sample from each mining site by subtracting the mass of the large weighing dish from the mass of the ore and dish. Record the mass of each ore sample in Data Table 1.
2. Calculate the mass of gold and silver in each sample in the same way you calculated the mass of the ore sample. Record in Data Table 1.
3. Calculate the percent concentration of gold and silver, respectively, in each sample of ore by using Equation 1 from the *Introduction*. Record in Data Table 2.
4. Calculate the average percent concentration of gold and silver for each mining site. Record in Data Table 2.

Post-Lab Analysis

5. Calculate the profit per kilogram of ore mined at Site A using the same procedure from the *Pre-Activity Questions*. First determine the average mass of each metal per kilogram of ore and record in Data Table 4. Then use the profit value for gold from the *Activity Overview* to determine the gold profit per kilogram of ore mined at Site A. Do the same for silver. Record these values in Data Table 3.
6. Determine the gold and silver profit per kilogram of ore mined at Site B, respectively. Record in Data Table 3.
7. Calculate and record the total gold and silver profit per kilogram of ore mined at each site in Data Table 3.
8. Based on your calculations, which site would you recommend as the more profitable to mine?

9. Most ores are heterogeneous mixtures. Define this term and explain why several different samples of ore from each site were investigated.