Name_____ Period _____ Date _____

Bot Miner   STEM Sims

Lesson 3: Spectroscopy Reading
Each element has a unique emission spectrum, much like a fingerprint. Spectroscopy allows scientists to identify elements from a random sample by identifying the levels of electromagnetic radiation that is emitted. Imagine finding gold on an asteroid!

Doing the Science
1.   Start the Bot Miner Simulation by clicking on the "Sim" tab.
2.   Select the Calculation option on the main screen.
3.   Calculate the delay in hours you need for the rocket to reach asteroid alpha as you learned in Lesson 2.
4.   Once you have landed on asteroid alpha, click the collect button on the bot miner to collect your data from each sample quadrant (1-4) and location (A-B).
5.   Click on the Reference button to bring up the table that will help you match emission line data of different elements to your readings. Record the element that best matches the visual data in Table 1 below.

Table 1.

	αA	αB	αC	αD	βA	βB	βC	βD
1								
2								
3								
4								
	γA	γB	γC	γD	ΔA	ΔB	ΔC	ΔD
1								
2								
3								
4								

Do You Understand?
1. What element occurred most frequently in your data set?

2. Did you find any precious metals (gold, silver, platinum, iridium)? If so, where?