Name_____ Period _____ Date _____

Αθηνά
Rosetta Phone

STEM Sims

Lesson 1: What's That Say?
Imagine that you're stuck in a foreign land, without a translator and you are lost. There are signs around you that can direct you to safety, yet you're unable to read the language on the signs. What if you could take a picture of a sign with your cell phone and the phone would be able to translate the image into your native language? How can an image be converted to a digital format?

Doing the Science
1.   Start the Rosetta Phone Simulation.
2.   Think of a five-letter word.
3.   Select the "Code" button at the bottom-left of the screen. Use the 25 black boxes in the upper left-hand corner of the screen to make an image of the first letter. Select a box to change its color to white to form the letter. Make sure the height and width of the letter fills the entire box area and that your letter is centered in the middle of the boxed area.
4.   Note that as you select a box a numeric code is generated in the middle of the screen, which is titled, "Build Code Here." This is where your image of the letter is being "converted" to a digital code. When you have the first letter created, record the code for the letter in Table 1 below.

Table 1. Code for Letters

Letter	Numeric Code
1st	
2nd	
3rd	
4th	
5th	

5.   Select the "Done" button when you complete building your first letter. Create your code for the second, third, fourth, and fifth letters of your word as you did in steps 3 and 4. Make sure to record in Table 1 the numeric code for each letter.
6.   You can also use the "Output Code" button to send the information you recorded in Table 1 to a file for saving or to a printer.

What Do You Understand?
1.   The image of each letter you chose was "stored" in a binary code. What does the phrase "binary code" mean?

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1

2. How was the conversion of letters to binary code accomplished?

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3. Name one benefit of converting letters to a numeric code.

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4. Name one limitation of converting letters to a numeric code.

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5. Does a standard light switch operate on a binary principle? Support your response with a reason.

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6.   Does a dimmer light switch operate on a binary principle? Support your response with a reason.

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