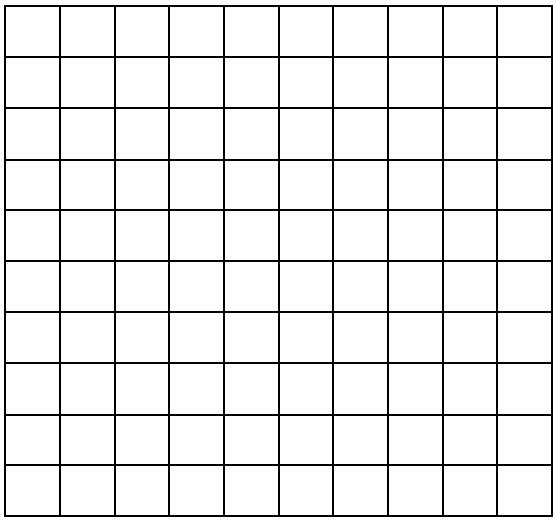
Name _____ Date _____ Class _____

Analog vs. Digital: Graphing Part One

1. Draw a diagram of a river from a top view (how a satellite will see it from above) on the graph below. Use simple wavy lines to represent your river and try to use as much of the graphing space as possible.
   - Add whole numbers (0-10) to the x- and y-axes.
   - Label the x- and y-axes.



2. Now switch worksheets with a partner. Write their name here: _____

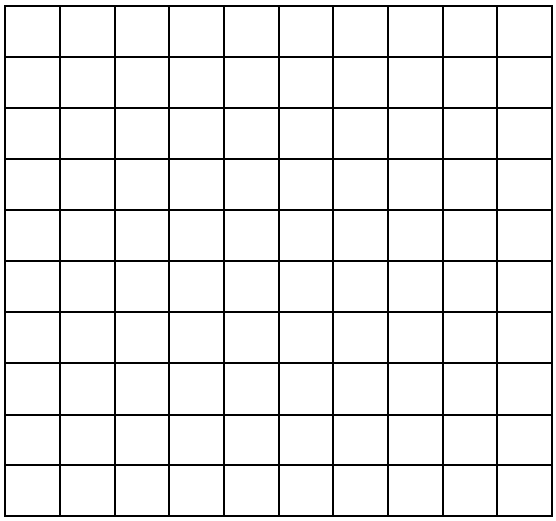
Name _____ Date _____ Class _____

Analog vs. Digital: Graphing Part Two

1. Use the analog diagram your partner created and encode it in a digital form. Pick one line (on side of the "river") to record the data points on the y-axis that correspond with the below x-axis values.

   0, __ 4, __ 8, __
   2, __ 6, __ 0, __

2. Graph those data points.



3. Compare the graph you just recreated to the original one your partner created. How are the two graphs similar? How are they different?

   _____

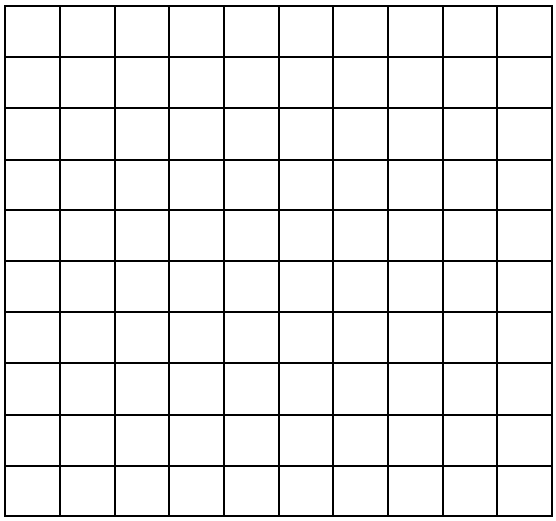
   _____

   _____

4. Increase the sampling rate (x4) of your partner's analog diagram. Record the data points below based on the x-axis of your partner's graph.

0, __	2, __	4, __	6, __	8, __	10, __
.5, __	2.5 __	4.5, __	6.5__	8.5, __	
1, __	3, __	5, __	7, __	9, ___	
1.5, __	3.5, __	5.5, __	7.5, __	9.5, __	

5. Graph and connect the data points from question #4.



6. Look at the graph you created on the previous page and compare it to the one above. How are the two graphs similar? How are they different?

_____

_____

_____

7. How could your graphs be used to argue that analog signals are more accurate than digital signals?

_____

_____

_____

8. How could your graphs be used to argue that digital signals are more accurate than analog signals?

_____

_____

_____