**The Raven and the Jug**

This experiment is based on Aesop’s Fable: The Crow and the Pitcher.

A Crow, half-dead with thirst, came upon a Pitcher which had once been full of water; but when the Crow put its beak into the mouth of the Pitcher he found that only very little water was left in it, and that he could not reach far enough down to get at it. He tried, and he tried, but at last had to give up in despair. Then a thought came to him, and he took a pebble and dropped it into the Pitcher. Then he took another pebble and dropped it into the Pitcher. Then he took another pebble and dropped that into the Pitcher. Then he took another pebble and dropped that into the Pitcher. Then he took another pebble and dropped that into the Pitcher. Then he took another pebble and dropped that into the Pitcher. At last, at last, he saw the water mount up near him, and after casting in a few more pebbles he was able to quench his thirst and save his life.

Source: <http://ancienthistory.about.com/library/bl/bl_aesop_crow_pitcher.htm>.

1. You will be given a jar half filled with water, a set of marbles, and a ruler. You will study what happens to the water level as you add marbles to the jar. Record your data in the table below.

Your group should decide how many marbles to add each time in order to make the change in the water level noticeable.

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| **# of Marbles** | **Water Level** |
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2. Identify the independent variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Identify the dependent variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Make a graph of the data. Label and scale the axes accordingly.



1. Describe any trends you see in the graph.
2. Is the relationship between the number of marbles and the height of the water a function? Explain.

Note: This activity is adapted from one found in *Algebra Experiments I: Exploring Linear Functions* by Mary Jean Winter and Ronald J. Carlson, Menlo Park, CA: Addison-Wesley, 1993.