

# The Crow and the Pitcher activity<sup>1</sup>

**Team members**

1. .... 2. ....  
 3. .... 4. ....  
 5. .... 6. ....

In this activity, you will simulate the story of "The Crow and the Pitcher" using a graduated cylinder and marbles.

**Experiment:** Fill your graduated cylinder with water, up to 100 mm height. You will be adding marbles (*one at a time*) until the water reaches a level of at least 120 mm—the level at which the crow can reach the water.

**Question 1:** Complete the first five rows of the table on the right. The water level has *not* raised enough, but can you predict how many marbles you will finally need to reach your goal of the 120mm height?

We believe that if we have a total amount of 11 marbles inside the graduated cylinder, then the height of the water level will be about 120mm.

Number of marbles n	Height of water level (mm) h
0	100
1	102
2	104
3	106
4	108
5	110
6	112
7	114
8	116
9	118
10	120
11	120

**Question 2:** Keep adding marbles, and complete the table above. Was your prediction correct?

Try to represent your inputs graphically. What do you notice?

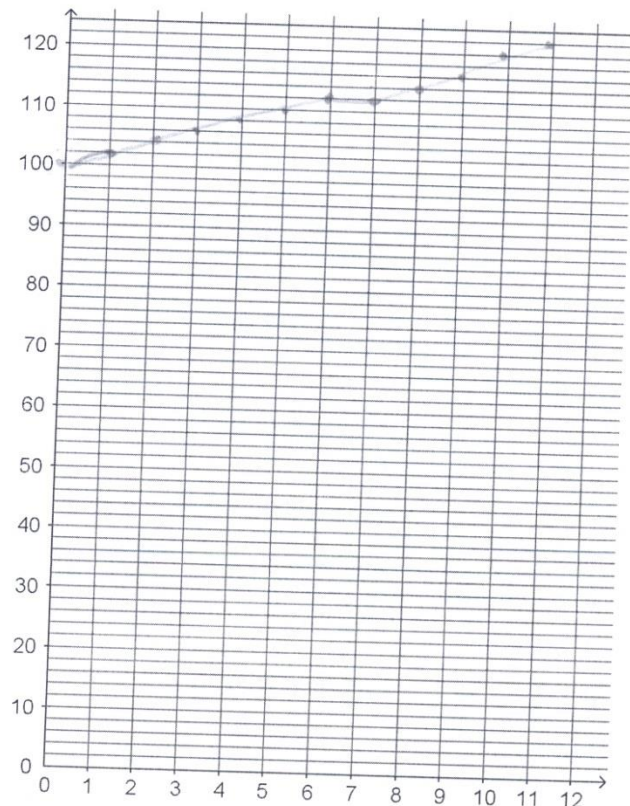
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**Question 3:** Can you find a rule that relates the variable "h" (height of water level) to the variable "n" (number of marbles)?

Write it in the space below:

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Figure out which of the two variables is dependent and which is independent.



<sup>1</sup> This activity is based on a lesson plan of National Council of Teachers of Mathematics (NCTM) published in "Illuminations": <http://illuminations.nctm.org/lesson.aspx?id=3667>