

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

Team members

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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?

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

We believe that if we have a total amount of 12 marbles inside the graduated cylinder, then the height of the water level will be about 120mm.

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

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

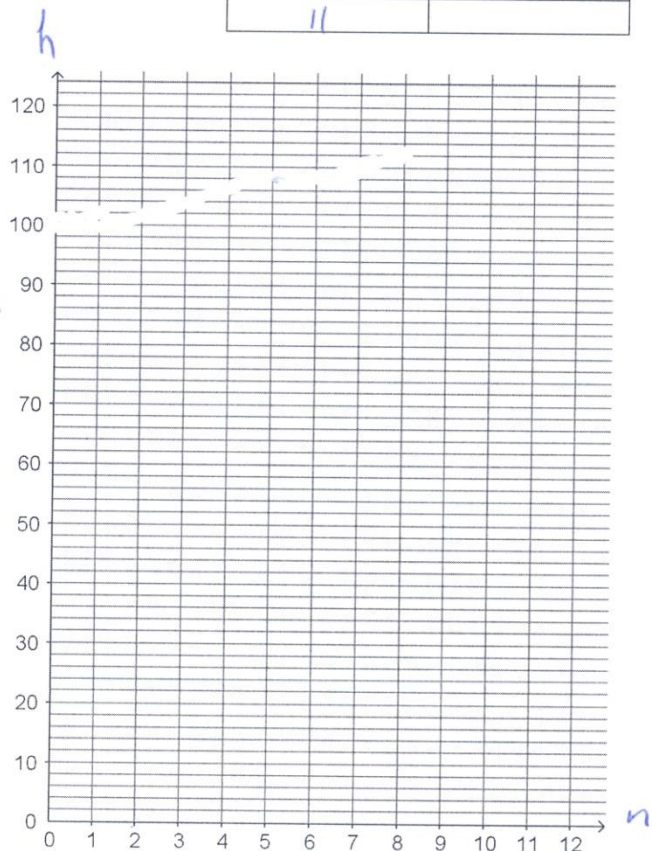
In each marble the water height level increases by 2 mm

**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>