

ACTIVITY TITLE:

Crack the Code!

TECH_WEEK

BOOT UP:

Some space explorers landed on an empty planet. From their ship they could see a maze with an unknown golden object in it.

The explorers dropped their robot into the maze hoping it could take a closer look at the unknown object.

Unfortunately the robot broke during the fall and can now only send and receive garbled instructions about where to go.



The robot suggests four possible directions it can go. Even though the words in the instructions are garbled, there are still only four different words, each indicating north, west, east or south. When following the instructions the robot will move into an adjacent square as instructed.

Which instructions should the explorers send the robot in order for it to reach the golden object?

A. Ha' poS poS Ha' Ha' nH	B. Ha' Ha' poS Ha'
C. Ha' poS poS Ha' nH Ha'	D. Ha' poS nH vl'ogh Ha' poS

LOADING...

The correct answer is: A. Ha' poS poS Ha' Ha' nH



Explanation:

Ha' is Up, v'ogh is Down, poS is Left, and nIH is Right. Sequence C is too short. Sequence B must be wrong. If Ha' means West, then poS must be South – and the robot bumps into the wall at the third move. The first four steps of sequence D move the robot in each direction once (in an unknown order), thus after the first four commands the robot is back where it started. It cannot reach the artefact in the remaining two steps.

It's Computational Thinking!

Cryptanalysis is the science of reading hidden messages. From ancient times, experts called cryptanalysts have been trying to decipher messages sent by enemies. In doing so, they may also use their knowledge about the words that may possibly constitute the hidden message. For instance, in reading the messages enciphered by the famous Enigma machine in the 2nd World War, the English searched for names of German cities and words related to weather reports. In this task, you were working like a cryptanalyst, except that the message was not hidden by intent: you helped to read an ancient text in the language that nobody understands anymore.

ACTIVITY HOSTS

Objective: Use computational thinking techniques to solve real-world challenges. (In this case working like a cryptanalyst to decode a hidden message.)



Bebras (www.bebbras.org) is an international online motivational challenge aimed at introducing students of all ages to computational thinking and computer science. The challenge consists of fun and engaging short questions called Bebras tasks. These tasks can be answered without prior knowledge of informatics concepts. Bebras teaches schoolchildren that computational thinking is an integral part of solving problems in daily life. This taster-challenge is an example of a typical Bebras task for secondary school students.



The ICS Foundation ran a national Bebras challenge during November 2018. The ICS Foundation ran a national Bebras challenge during November 2018. The top 200 students from the November 2018 challenge have been invited to attend the National finals, taking place in Maynooth University during tech week on May 11th. To find out more, take a mini challenge or register your interest please visit: <http://bebras.techweek.ie/>

FINAL STEP!

Activity Hosts - Don't forget to register your activities on www.techweek.ie.

