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# HOST

HANDS-ON SCIENCE TOURNAMENT

## FAMILY EDITION

# ENGINEER YOUR MAZE



Make a closed circuit maze and to solve it using hearing it or touching and feeling it. You have to design your own maze in which a small ball can be put inside. The maze pattern will be closed from all sides except for the start and end, which will be open. Put the ball inside and use your senses to move the ball out of the maze.

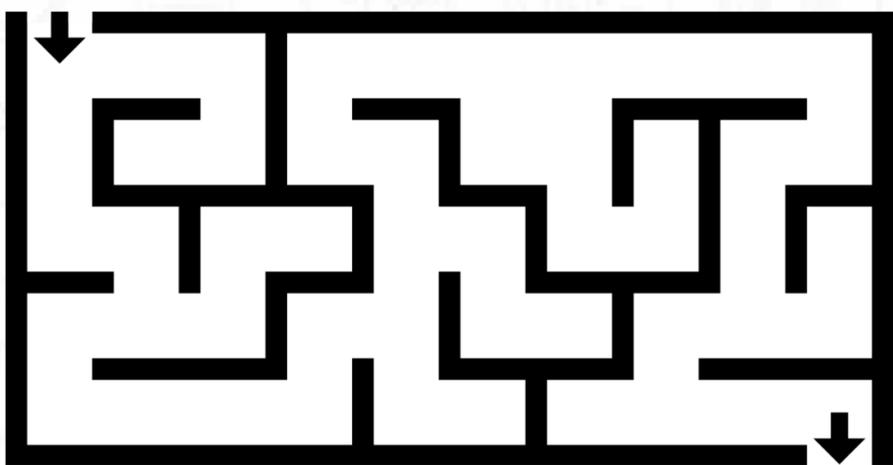
## **MATERIALS TO BE USED**

Use only cardboard and tape to make the maze. Its sidewalls, top, base, border etc. Should be made only using this.

## BRAINSTORM & DESIGN

Look at the materials suggested and think about how to use it in an optimal way to bring out the best maze.. First, take a piece of paper and draw a 2D rough sketch about the maze and think about how to create a maze.

1. Create a 2D sketch maze and find a path on how it will be solved?
2. Look for alternate paths if the ball moves to the wrong direction and how it will come back to its track?
3. How will you make sure that at which position the ball is inside the maze?





## **BUILD, TEST, EVALUATE & REDESIGN**

Use the materials provided to create a 3D maze and try to solve it on your own. If you are not able to get your expected outcome then redesign it and try it.

“A single problem can have many solutions” so think in a different manner and try it. If you are able to solve your maze which you designed to give it to your friends and relatives and ask them to solve it.

Some possible troubles which you face are

1. The ball may be stuck in some path of the maze due to irregularities so disassemble your maze and check whether all the path are equally spaced or not.
2. One of the paths may break and disturb the other pathway. So check it whether all the cardboard pathways are fixed properly and capable of withstanding the shaking.



## TAKE IT TO NEXT LEVEL

- > You might have used the sound of the ball rolling to solve the maze, now try to put an earplug and try to solve the maze again, just by feeling the ball rolling
- > Ask someone else to solve the puzzle so that you can be able to understand how others will be able to analyze your mind and your wave.

### **FUN FACT:**

“Difficult problems don’t always need to have complicated solutions”.



## WHAT TO SUBMIT

- > Less than 1 min video explaining how you made the maze (in the language you are comfortable with) and one person solving the maze by just seeing it.
- > Two pictures of the maze with your family

## HOW OUR JUDGES WILL SCORE

- > Based on the how difficult your family member find it to solve the puzzle
- > Based on your creativity in building the maze
- > Based on the family effort



## HOW TO SUBMIT

### METHOD 1:

1. Share your experience in your facebook and instagram profile
2. Upload photos and videos of the challenge
3. Don't forget to tag our page - [@ologyhost](#)
4. Use the hashtag [#HOSTFamilyEdition](#)

### METHOD 2:

1. Share your experience with photos and videos to the mail id [familyedition@ologyhost.org](mailto:familyedition@ologyhost.org)





## **ENGINEERING IN ACTION**

Shuhan He sees mazes everywhere—and found his second job making them. An emergency department resident in Boston, He also is the founder of Maze Engineers, a startup that makes bespoke mazes for research that uses mice and other animals. He got into the game while getting his medical degree, when his neurology lab tasked him with improving the maze used there. “I realized there were no good mazes out there,” he says. So he started making his own.

Cincinnati Water Maze (CWM) is a labyrinthine maze used to study egocentric navigation, learning, and memory. Egocentric navigation is one of the two types of local navigation described as the ability to locate places using proximal or internal cues close to the organism.

In engineering and the recent world, the maze is very much useful to encrypt and decrypt the password and very important thing in the internet to avoid cyber threats and secure our privacy in the social world.

