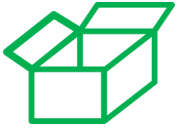


CHALLENGE #1: MARBLE MAZE (EXPLORATORY)

YOUTH WILL BUILD A MARBLE MAZE THAT MOVES A MARBLE FROM START TO FINISH



MATERIALS:

Paper plates with high side walls, marble, straws, scissors, tape, and glue.



VOCABULARY:

ITERATION: The process of creating multiple versions of a project to make improvements. For this project, you'll make **ITERATIONS** to improve your maze design.

LIFE



SKILLS

4-H LIFE SKILL:

PLANNING: For this project, you can **PLAN** by thinking of a design and using a pencil to trace the path of the marble.

LIFE



SKILLS

4-H LIFE SKILL:

RESILIENCE: If the straws do not keep your marble on your plate, you can practice **RESILIENCE** by making corrections and trying again until it works.

DO: YOUTH COMPLETE THE ACTIVITY

Watch the challenge:

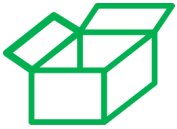
<https://go.umd.edu/mmchallenge>

Design and build a game where players try to move a marble from a start to a finish spot on the paper plate by tilting the plate to direct it around the straw obstacles.

To create the game, plan the path that the marble should take by tracing the path with a pencil. Place drinking straws beside the path. Cut straws, as needed, to fit. Tape or glue the straws to the plate to secure them. When the maze is ready, challenge your family members or friends to move the marble through the maze.



CHALLENGE #1: MARBLE MAZE (GUIDED)
YOUTH WILL BUILD A MARBLE MAZE THAT MOVES A MARBLE FROM START TO FINISH



MATERIALS:

Marble, 3 paper plates with high sides, 10 straws, clear tape, and scissors.



VOCABULARY:

ITERATION: The process of creating multiple versions of a project to make improvements. For this project, you'll make **ITERATIONS** to improve your maze design.

LIFE



SKILLS

4-H LIFE SKILL:

PLANNING For this project, you can **PLAN** by thinking of a design and using a pencil to trace the path of the marble.

LIFE



SKILLS

4-H LIFE SKILL:

RESILIENCE If the straws do not keep your marble on your plate, you can practice **RESILIENCE** by making corrections and trying again until it works.

DO: YOUTH COMPLETE THE ACTIVITY

Watch the challenge at <https://go.umd.edu/mmchallenge>
then follow steps 1-5 on the following page.



CHALLENGE #1: MARBLE MAZE (GUIDED STEPS ONE THROUGH FIVE)

STEP 1. IDENTIFY THE PROBLEM

Build a maze on your paper plate so that when you tilt the plate, the marble will roll from START to END. The materials you can use are: paper plates, straws, marble, pencil, scissors, tape or glue.

STEP 2. IMAGINE SOLUTIONS

Think about all of the possible ways you can make your maze. Consider choosing a pattern, shape, or a geometric design to get started.

STEP 3. PLAN POSSIBLE SOLUTIONS

Based on your imagined solutions, **PLAN** the path for the marble to roll. Draw it on the paper plate with a pencil. Mark the START and END.

STEP 4. CREATE YOUR MAZE

Cut straws to fit on both sides of the path to keep the marble on the path. Tape or glue the straws to the paper plate. Test your maze. Move the marble from the start of your maze to the end by tilting the plate. Can you do it? This is the first **ITERATION**, or version, of your design.

STEP 5. IMPROVE YOUR DESIGN

Look at your marble maze. Do you need to change anything to make your maze work better? You can go back to Step 1 and identify any problems with your maze.

Start the process again to make the changes for your next **ITERATION**.



CHALLENGE #1: MARBLE MAZE

REFLECT: GUIDE YOUTH THROUGH THE REFLECTION PROCESS

See a solution here: <https://go.umd.edu/mmsolution>

- How many **ITERATIONS** of your game did you make? How was the first version of your maze different from the last version?
- How did **PLANNING** the path of your marble affect the process of creating your game?
- Did you experience any setbacks while making the maze? How did you show **RESILIENCE** and overcome the setbacks?

APPLY: CHALLENGE THE YOUTH TO APPLY WHAT THEY'VE LEARNED TO OTHER PARTS OF THEIR LIVES

- What effect did challenging your family or friends to try your maze have on how you felt about it?
- Share an example of another time in your life when **PLANNING** a project made it easier to complete.
- When else have you had the opportunity to practice resilience?

REFERENCES:

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