

Magnet Maze

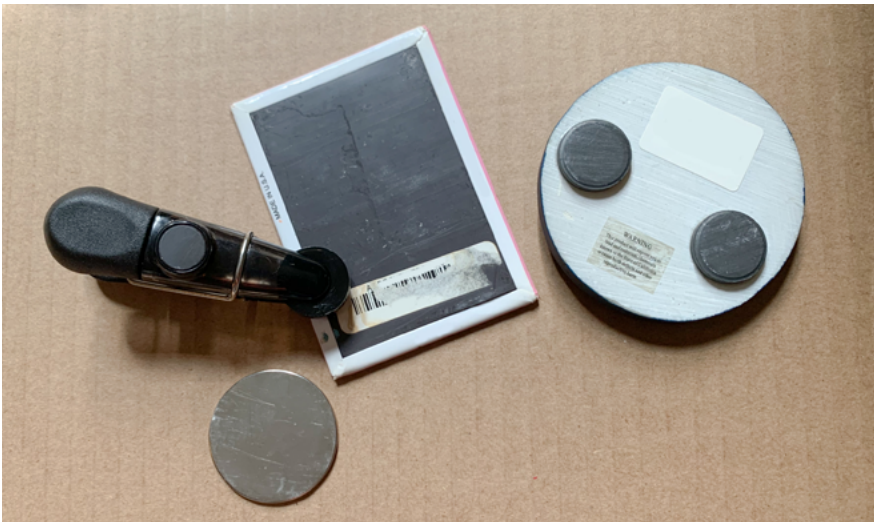
Magnets have the power to attract other magnetic objects. In this activity you're the architect of your own maze and we'll be using magnetic fields to navigate it!

Step 1: Magnet Test

First, test the strength of your **magnet**; place your magnetic object (for our example we used a **paperclip**) on top of the **sheet of cardboard** you plan on using for the base of your maze.

Next, grab your magnet and place it underneath the board and where the paperclip sits. Now move the magnet along the board, underneath. Did your paperclip move along the path of the magnet? If so, awesome! If the paperclip didn't, look around your environment for more magnet options that may have a stronger pull.

Additionally, you can also try building your maze on paper, though this will make the maze less stable.



Magnet options you can find in your environment

STEM Skills:

- Magnetic force
- Problem solving

Experience Level:

No experience required.

Supplies:

- Sheet of Cardboard, larger than 8"x11"
- Magnet
- Scissors
- Tape
- Yarn/Twine
- A magnetic object such as a paperclip or binder-clip
- More cardboard or other objects to make **perpendicular*** maze walls
- Optional: Googly eyes, Sticky notes

***Perpendicular:** Two distinct lines intersecting each other at 90° or a right angle are called perpendicular lines.

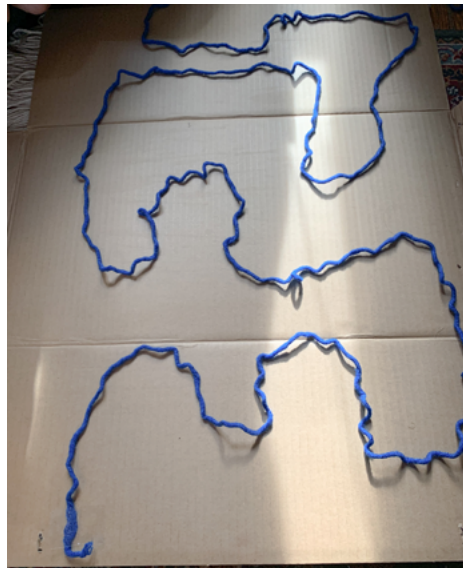
Additional Resources:

- [Magnets: Distance of Attraction Lesson & Worksheet](#)

Step 2: Plan your Maze

Now that we have our magnetic duo tested and ready to go, it's time to plan the challenge. Lay your **cardboard sheet** on a flat surface, use **yarn** or **twine** to map out the path through your maze; this makes it easier to place your walls in the next step!

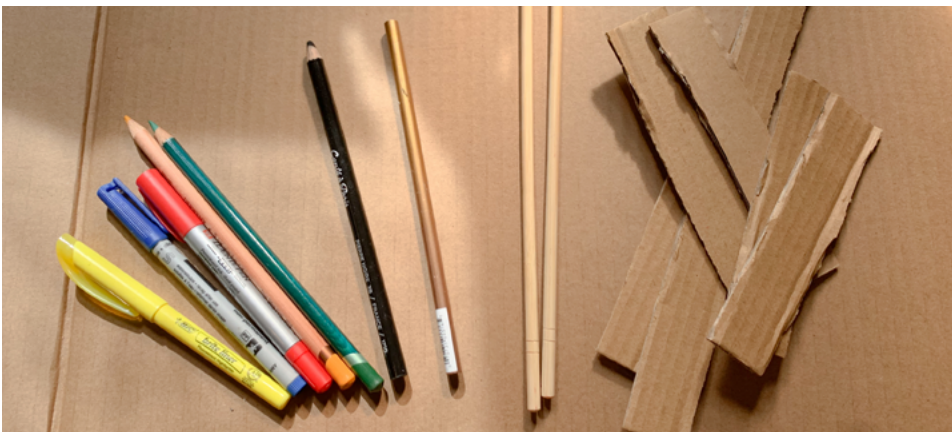
Make sure to have a clear START and FINISH for the path. If you don't have yarn, you can trace a path using pencil as well.



Use yarn to plan the maze path. Taping down the ends of the yarn helped.

Step 3: Build Those Walls

So we have our path laid out from start to finish, now it's time to choose our wall material. For our example below, we used additional **cardboard** cut into strips, but you can use any combination of materials such as craft sticks, pens, chopsticks or markers.



Options for building the walls of your maze

To easily build a solid wall out of cardboard, we folded the strips along the long side to form a triangular shape. This allows the wall to be taped down without too much wobble.



To make the walls stable, we fold along the middle seam to create a pitched wall.

Tape walls down on both sides of the planned path. We used packing tape since it's wide and allowed each wall to be secured with a single piece.



Fun Tip: Want to add extra difficulty to your maze? While building the walls, add detours that lead to dead ends.



Here is a sneaky dead-end in our maze. (Highlighted in yellow)

Keep building those walls and optional detours! This part can take some time commitment but getting to be the architect of your own maze is challenge worth pushing through!

Step 4: Add your Start & Finish markers

Our walls are built, we have a path with a start and a finish – now we just need to **label** them!



Our START & FINISH labels for the maze

Step 5: Maneuver the Magnet Maze!

Our Maze is complete and ready for a brave magnet explorer to navigate the journey!

We added some googly eyes to our paperclip, which is of course optional but always feels like the right move.



Our circular magnet and paperclip explorer!

Grab your magnet and magnetic object and place them on either side of the board. Holding the magnet underneath the board, start to maneuver the object from the starting line through the maze all the way to the finish!

To start, hold the magnet underneath the board and your magnetic object placed directly on top at the start of the maze.



Want more?

- Have a friend and a second magnet? Starting on opposite ends, weave your way through the maze to the other side — first one to reach their finish line wins! What happens when you cross paths?
- See how many magnetic objects you can carry through the maze.
- Beat your best time for navigating the maze.
- Read more about magnets and find additional activities in [this lesson](#).

Did you know?

Magnets are in a lot of the things we use every day:

- **Refrigerator Door:** There's a magnet on each side of the seal so it stays shut tight.
- **Microwave:** The oven uses magnets making electromagnetic waves to cook our food.
- **Speakers:** A permanent magnet and an electromagnet (one with a coil of electricity) make sound.
- **Computer:** The hard drive stores data by moving magnetic material on the disk.