



# The Great Maze Magnet Race

Grade 5  
Science/Visual Art

**Science Standard 5.2.2** Ask questions to plan and carry out investigations to identify substances based on patterns of their properties. Emphasize using properties to identify substances. Examples of properties could include color, hardness, conductivity, solubility, or a response to magnetic forces. Examples of substances could include powders, metals, minerals, or liquids.

**Standard 5.V.C.1:**  
Combine ideas to generate an innovative idea for art-making.

**Objective:** Students create and name their own race-course where they pull a paperclip or push a doughnut magnet in competition with others.

**Time:** 45 Minutes

**Equipment and Materials needed:**

Classroom set of 1" doughnut magnets (one per child)  
large paperclips,  
rulers  
cardstock 8.5 by 11  
Markers  
Individual White boards  
Art supplies for decorating the mazes.

**Introduction:**

On the cardstock provided, make a maze using the following directions:

1. Place a start line in the bottom right hand corner
2. Place a finish line in the top left hand corner
3. Make a path the width of your ruler so that a small magnet can pass through it
4. Add curves or turns to your maze. The route must be exactly 24 inches long.
5. Decorate the parts of the paper that are not part of the path.

Students have fifteen minutes to create a maze in which to race their magnets. When they are complete they pair up and measure each maze to make sure they are to specification. If you like, you may turn the mazes into artwork by allowing your students additional time to decorate the mazes.

### **First Race:**

Using a paperclip; place the magnet under a whiteboard with the maze on top of it and **pull** the paperclip through the track to see who will win.

Trade mazes and play a second time. Chart the results play three times.

### **Second Race:**

Using a magnet; place the second magnet close to it in a way that will **push** the first magnet along the paper. In this race the magnet must follow the track but can cross lines. It must start at the start line and end at the finish. Each time the magnets connect together, the magnets are pulling not pushing and the contestant must start again. Chart the winner. Play three times. Chart your final results.