

## Dabble Lab Lesson Plan

Series: Junior Makers 4D

Titles: *Building Projects for Beginners: 4D An Augmented Reading Experience*, by Tammy Enz

**GENERAL INFORMATION:** Grade Level(s): 2-4 Lesson Plan Title: Magnetic Madness  
Curriculum: Science

**Overview of Lesson:** In this lesson, students will learn how to apply what they've learned about magnetism to a science experiment. Students will learn the formatting for a science experiment using the scientific method with the graphic organizer included and further their inquiry process with research. Students will also have fun in the process as they create their own magnetic race car.

### **BENCHMARKS OR LEARNING OBJECTIVES:**

*AASL Skills Indicator 1.1.2: Use prior background knowledge as context for new learning.*

Grade 2 Benchmark: Share what is known about a topic, problem, or question.

*AASL Skills Indicator 1.1.3: Develop and refine a range of questions to frame the search for new understanding.*

Grade 2 Benchmark: Ask "I wonder" questions about the topic, question, or problem.

*AASL Skills Indicator 1.1.9: Collaborate with others to broaden and deepen understanding.*

Grade 2 Benchmark: Share knowledge and ideas with others by discussion and listening.

*AASL Skills Indicator 3.1.1: Conclude an inquiry-based research process by sharing new understandings and reflecting on the learning.*

Grade 2 Benchmark: Reflect at the end of an inquiry experience about new ideas to wonder about and investigate.

*AASL Skills Indicator 4.1.6: Organize personal knowledge in a way that can be called upon easily.*

Grade 2 Benchmark: Take notes using graphic organizer provided by teacher or school librarian.

### **ASSESSMENTS METHODS:**

Students will work in groups of two to conduct the experiment, research, and create their team's race car. This is a great lesson opportunity to collaborate or co-teach with a science teacher or another teacher.

### **RESOURCES AND OTHER LEARNING SUPPORT MATERIALS:**

- paper clips
- nuts
- screws
- metal bottle caps
- binder clips
- washers
- black and white paint and paintbrushes
- large sheet of poster board
- marker
- 8 paper cups
- hot glue and hot glue gun
- 2 magnets
- stop watch

**INSTRUCTION AND ACTIVITIES:**

1. This activity should be done after students have completed the Magnetic Race Track project on pp. 28-31.
2. Introduce students to the graphic organizer below and review the scientific method and procedure.
3. Discuss what students already know about the speed and magnetic abilities of the bottle caps.
4. Assign students in groups of two to three, giving them each a graphic organizer to complete.
5. Guide students through the process of completing the graphic organizer.
6. Give students time to complete the experiment and graphic organizer.
7. Once students have completed the experiment, bring the class back to review and discuss their findings.
8. Address additional questions by asking students to use an appropriate online source that you introduce to investigate further (Ex: Britannica School, World Almanac for Kids, Kids Infobits, or other preferred research databases or websites.)
9. Students will then choose the materials they wish to use to create their own race car.
10. Once students have created their team’s race car, have students race other teams as a class competition. If students need motivation, express that the 1st, 2nd, and 3rd place teams will get to display their winning cars in the library for all to see.

\*Please note that this lesson may take several class periods to complete and can be adapted as desired.

Purpose: I wonder...

Hypothesis: I think...

Procedure:	<ol style="list-style-type: none"> <li>1. Measure the amount of time each object takes to get from the start to the finish of the race track. One partner operates the magnet under the poster to attract the object on the race track, while the other partner operates the stop watch.</li> <li>2. Record the time it takes for each object to complete the race track without falling off the track.</li> <li>3. Record observations.</li> <li>4. Record any additional questions you have about an object’s speed and magnetism.</li> </ol>
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Materials:	1. objects listed below 2. stop watch 3. magnet 4. race track (already completed)
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Objects	Paperclip	Nut	Screw	Bottle cap	Binder Clip	Washer
Time (example: 15 seconds or 1 minute and 2 seconds)						
Observations						
Additional Questions						

Conclusion(s) from experiment: I learned that . . .

Conclusion(s) from research: I learned that . . .