1st grade Magnets Lesson Plan

Teacher **Date**
School **SLE #** PS.7.1.6: Classify materials as magnetic or nonmagnetic, PS.7.1.7: Investigate the properties of magnets: attraction/repulsion, NS.1.1.5: Collect measurable empirical evidence as a class and in teams, NS.1.1.7: Use age appropriate equipment and tools in scientific investigations (e.g., balances, hand lenses, rulers, and thermometers)

Objectives:
Content: I will be able to classify materials as magnetic or nonmagnetic.
I will be able to investigate the properties of magnets such as attraction and repulsion.
I will be able to collect measurable empirical evidence with my team.
I will be able to use appropriate equipment in my investigation.

Language: I will be able to communicate my results clearly in my writing.
I will be able to use at least 3 of the vocabulary terms in my writing and while I am communicating with my group.

Assessment: Students will be assessed throughout the activity based on their participation and their design.

Technology/Materials: ring magnets (5 or more per group), pencils or wooden dowel rods (1 per group), clay (optional- to hold dowel/pencil on desk), activity sheet, ruler

Vocabulary: ruler, data, measure, magnetic, nonmagnetic, attract, repel, poles, push, pull, fields

Bloom's: ☒ **Remembering** ☒ **Understanding** ☒ **Applying** ☒ **Analyzing** ☐ **Evaluation** ☒ **Creating**

Questions: What does a magnet do? Describe what causes a magnet to attract or repel objects? What makes an object magnetic or nonmagnetic? Predict what would happen if I tried to force the North Poles of two magnets together. What could you use the attraction or repulsion of magnets for?

High Yield Strategies: ☒ **Identifying similarities & Differences** ☐ **Summarizing & Note Taking** ☒ **Cooperative Learning** ☒ **Reinforcing Effort & Providing Recognition** ☒ **Setting Objectives & Providing Feedback** ☒ **Generating & Testing Hypotheses** ☒ **Cues, Questions & Advanced Organizers** ☒ **Homework & Practice** ☒ **Nonlinguistic Representations**

Instructional Strategies:

Set: Ask the questions from above. Read the National Geographic book "How Are Magnets Used" by Jan Pritchett to give students some background knowledge of how magnets are used. Show the video on TLI of the Maglev Train to illustrate how trains are being built using the attraction and repulsion of magnets. Ask the students if they think magnets are used for anything in the real world. Create a list of student answers.

Model: The teacher can show how the placement of magnets on a dowel can either attract other magnets to one another, or repel one another. The teacher can show how the magnets will bounce and it doesn't matter how many magnets are placed together, the repulsion of the magnets with keep them separate.

Guided Practice/Strategies: Say, "What we are going to do now is to explore how the magnets will either attract or repel each other. You will be given some ring magnets to use. Place the ring magnets on the dowel/pencil and make sure they repel each other. How would we do that? (Allow students to answer.) After you get your first magnet to repel, measure the distance between the two magnets. Then add a magnet so that it is attracted to the top magnet and see if the distance is changed. Then, take 3 magnets and have them set up so that they are attracted. Now place those 3 magnets on your dowel so they are being repelled. Measure the

distance. (You can keep adding on if you have the magnets.)

Intervention Strategies: Teacher may need to remodel or help students.
Accommodations & Modifications (IEPs) Allow certain students to work together, students may draw their observations and conclusions instead of writing them.

Independent Practice/Activities: See above. Allow students to experiment with the magnets.

Enrichment Activities: Students could see how many they could have attracted to each other before all of the magnets touch.

Closure: Have the students write about the following questions.
Did the distances change when you added more magnets? What do you think happened to the magnets? What do you infer would happen if you were to use different types of magnets?

Homework: Have students design a way to use magnets to help them with a common household job (ie making their bed, taking out the trash, etc)

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