MANCHESTER COLLEGE- Department of Education

Early Childhood Lesson Plan

LESSON PLAN by: Sahara Kipfer **Lesson:** Magnetism

Source: *Teaching Science for all Children: An Inquiry Approach (5th ed.)*

Age or Grade Intended: 1st grade **Length:** 30-35 minutes

Academic Standard(s):

- Science 1.1.1- Observe, describe, draw, and sort objects carefully to learn about them. (Core Standard)

Performance Objectives:
Using a bar magnet, students are to classify various objects as either magnetic or nonmagnetic, with 100% accuracy.

Using the information that was presented in today's lesson, students are to draw two objects that are magnetic and two objects that are not magnetic, with 100% accuracy.

Assessment:
Throughout the exploration part of the activity, the teacher will make systematic observations about who is participating and offering predictions and clarifications. The teacher will also note those students who do not seem to be participating and those who seem to be struggling with the activity. Additionally, the instructor may pose questions within the various groups, so as to get them thinking more deeply or to hear their rationale behind certain items' magnetism.

The teacher will have the students, at the end of the activity, place one object from their group's initial pile of items in one of the two boxes, magnetic and not magnetic. However, before placing their object in one of the boxes, the students are to explain their reasoning behind their choice and then test it out with the teacher's bar magnetic.

The teacher will have the students, also at the end of the activity, draw two items with each category: magnetic and not magnetic. This pictorial assessment will allow for the teacher to see what the students learned and if they were able to communicate it correctly.

Advanced Preparation by Teacher:
The teacher will need to:

- Write students' names on Popsicle sticks, one name per stick and then place them in a cup (used to group the students).
- Have one bar magnet for each student.
- Collect various objects, in which their magnetism will be tested. Items to bring in include coins (quarters and pennies), aluminum cans, tinfoil, keys, paper clips,

pencils, erasers, glue bottle, wooden spoon, and so much more. At least five different objects per group will be needed.

- Label two boxes, one for magnetic objects and the other for nonmagnetic items.
- Make sure that students have crayons and/or pencils at their desks, for the pictorial assessment.

Procedure:

Introduction/Motivation (Engage): The teacher will begin the lesson by telling the students that he/she was cleaning the house this past weekend and they found an unusual object. This object (a bar magnet) will be held up for the entire class to see. (Gardner: Visual-Spatial) Students will then be asked "What is this object?" (Bloom's: Knowledge) and "Can you explain what it does?" (Bloom's: Comprehension) (Gardner: Verbal-Linguistic) Next, the teacher will set their magnet down, but a pair of scissors will be nearby, in which the magnet and scissors should attract one another. At this point, the teacher should exclaim, "I think this object (the magnet) likes the material the scissors is made of. I wonder, what other items it likes?" (Gardner: Verbal-Linguistic) Students will then be told that they are going to be detectives, in which they are to help figure out what this objective is and what its purpose entails.(Gardner: Logical-Mathematical) In order to do this, the teacher will place the students into five different groups. (Gardner: Interpersonal) The groups will be determined by the teacher drawing Popsicle sticks out of a cup, in which the students' names will be written upon these sticks.

Step-by-Step Plan:

Step 1: **(Explore)** The teacher will pass out five bar magnets to each group (one for each student), along with five assorted objects.

Step 2: Before students start their explorations, the teacher will need to dispense additional instructions. Within their groups, students are to predict which objects they think will bond to the object (magnet). (Gardner: Verbal-Linguistic) Once they have made their predictions, perhaps one object at a time or all the objects at once, they can then analyze the magnetism. (Gardner: Logical-Mathematical)

Step 3: As the students make their predictions and test the objects' magnetism, the teacher will come around to each group and confer with them. The teacher will be listening to their reasoning skills, in which students should be explaining why they think an object is magnetic or not. During this stage, the teacher could pose questions like "Can you formulate a theory for objects that are not metal?" (Bloom's: Synthesis), "What is your opinion of this paper clip (or other object, depending on the group's availability of objects)? Do you think it will stick to the other object (bar magnet)?" (Bloom's: Evaluation), "Have you discovered what the object (bar magnet) is? If so, what is it?" (Bloom's: Knowledge), etc.

Step 4: **(Engage)** Once the students have had to explore their objects' possible magnetism, the teacher will bring the focus back to the whole group. The teacher will ask the students "What is this object (the teacher will be holding the bar magnet at this time)?" (Bloom's:

Knowledge) Another question the teacher will pose will be that of "What information did you obtain from the bar magnets?" (Bloom's: Analysis) As for the second question, the teacher will expect answers such as "It attracts certain things, like paper clips" and "It does not attract everything; for example, bar magnets do not like erasers."

Step 5: The teacher will now have the students, one by one, explain one object from their group's items. (Gardner: Verbal-Linguistic) Each student should explain a different item. Once at item has been explained, the teacher will have the student come up to the front of the class and "test" their object's magnetism. This will allow for each group to see (Gardner: Visual-Spatial) why their explanation was either correct or incorrect. The teacher should emphasize that it is okay to make mistakes; mistakes allow for learning opportunities. Next, students will place their object into the appropriately labeled box, magnetic or not magnetic.

Step 6: Once all the items have been correctly placed, students will be instructed to take out a piece of paper and fold it in half. They are to label the left side "magnetic" and the right side "not magnetic." Within each category they are to draw two items that correctly correspond, in which they may be items that were not explained in today's lesson. (Gardner: Logical-Mathematical)

Closure: After students have completed their pictorial assessment, the teacher will review the concept of magnetism. Students will then be encouraged to go home that night and find other objects, that were not presented in today's lesson, that are magnetic. Items that students discover at home can be brought in or they can be discussed during the science lesson or share time tomorrow.

Adaptations/Enrichment:

A girl with a visual impairment- The teacher could have the student sit close to the two boxes, so that they could have a good view of the items being placed within them. When it comes to the pictorial assessment, the teacher could conference with the student, in which the individual could verbally explain what they would draw.

A boy who is gifted in science- Instead of having the student complete a pictorial assessment, the teacher could have the student choose objects from around the room. The student would be allowed to walk around the classroom during this part of the lesson, so long as they were not distracting other students. This would allow for the student to see that magnetic objects, along with nonmagnetic items, surround our every day needs.

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EC Lesson Plan	1 point	2 points	3 points	4 points	SCORE
Manchester College lesson plan format	Plan does not contain all required sections of lesson plan.	Plan contains all required sections of lesson plan (GD format).	Plan contains all required sections of lesson plan (GD format) including Bloom and Gardner references.	Plan is thorough and contains all required sections of lesson plan (GD format) including Bloom and Gardner references.	4
Thorough, purposeful, engaging content	Lesson plan lacks detail, engaging opportunities, and purpose.	Lesson plan lacks purpose and engaging opportunities, but detail is sufficient.	Lesson plan is engaging for learners, contains sufficient detail and purpose for teacher who designed the plan to implement it effectively.	Lesson plan engages learners, demonstrates purpose clearly, has sufficient enough detail for a substitute teacher to teach the lesson effectively.	4
Academic standards and behavioral objectives	Lesson plan is not based on applicable academic standards and/or behavioral objectives are not written correctly.	Lesson plan is based on academic standards without clear linkage to correctly written behavioral objectives.	Lesson plan is based on applicable academic standards and behavioral objectives that are correctly written.	Lesson plan is based in applicable academic standards that are clearly linked to well-written behavioral objectives.	4
Guided Discovery Format	Guided Discovery format is incomplete.	Guided Discovery format is attempted, but not complete.	Lesson plan is satisfactorily written in the Guided Discovery format for the early childhood stage.	Lesson plan is exceptionally written in the Guided Discovery format for the early childhood stage.	4
Spelling and Grammar	Lesson plan contains more than 5 spelling and/or grammar errors.	Lesson plan contains 3-4 spelling and/or grammar errors.	Lesson plan contains 1-2 spelling and/or grammar errors.	Lesson plan contains no spelling and/or grammar errors.	4
				TOTAL:	20 /20

COMMENTS: Excellent Sahara! You followed the GD format -- a model lesson :)

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