

Jessica Murrieta.

Science lesson - Kindergarten

Objective; students will be able to explore with magnets and find out what makes a magnetic object move.

Big Idea

Can you paint using magnets? How do you know what objects to use?

Setting the Stage: Students need to understand characterization of magnets. There are different objects that can be magnetic and they have access to them. Students gain a clear understanding of magnets and its properties. Once students can understand this they will be able to communicate whether something is magnetic or not and why. In this lesson, students learn that the magnets can make a magnetic object move and use it for a purpose such as painting, they will paint with magnetic objects and discover how the magnet mixes to make a new color.

Next Generation Science Standards

The lesson focuses on 2 LS1-1, plan an investigation to determine if paper clips are magnetic. The students need to understand how the magnet works in order to investigate if the paper clips, pipe cleaners, and coins will be able to move by using a magnet.

Science and Engineering Practices in the Next Generation Science Standards

This lesson address SP 8: Obtain, evaluate, and communicate information. During the investigation, students will ask their peers questions about the magnet and the objects, and they will write and communicate their group's results. It is important that students work collaboratively to communicate in written and oral form.

Structure and Function

In this lesson, the students understand what the properties of the magnet are and what properties the magnetic objects have in them that are attracted to the magnet. This is important for students to know because they learn that although some objects look magnetic they are not and looks can trick you.

Background Knowledge:

Students have already learned that common items are magnetic and they are all around us. This helps them understand how the magnets can be attached to a fridge and how the white board markers stay attached to the board (with magnetic strips) Students collaborate in groups using the scientific method and science process skills (observe, infer, form a hypothesis, predict, draw conclusions, and communicate). I establish safety procedures during all science and technology investigations.

Materials:

paper plates
Magnets
Coins
Paper clips
Pipe cleaners (precut)
Paint (red, yellow, blue)

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Roles:

Materials Manager/Traveler (SPY)

Checker

Recorder/Reporter

Observer/Illustrator

The instructor/ facilitator begins this activity by assigning the materials manager/spy, checker, recorder/reporter, illustrator/observer. The materials managers will be provided with the magnet-painting sheet that enables their teams to follow along in their roles.

THE 5-E FRAMEWORK

DAY ONE

ENGAGE - 5 MINUTES

CHECKER

Lead your team in recalling how the magnets work and what does an item need to have to be magnetic.

EXPLORE - 15 MINUTES

Developing Questions

Lead your fellow students in understanding that they will conduct an investigation: "How can you paint using a magnet and not getting dirty?" Students collaborate in groups.

Observe and ask questions- What questions do they have about the items?

RECORDER

Record responses on the lab sheets. Draw what happens when painting with a magnet, Groups are permitted to share their questions, so other groups can see and hear their peers' responses— TRAVELER (Spy) What does this student do?

[Warning for younger students: 1. Think Ahead 2. Be neat. 3. Be careful]

Commented [SFB1]: You need to define these roles at the outset. Consider how you assist another teacher in understanding how to lead your lesson.

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Form and record the hypothesis- Problem-posing, "What will happen to the paper clip, coin and pipe cleaner when we move the magnet under the plate?" [Students are asked: write a hypothesis using an "IF and Then" statement].

Commented [SFB2]: Is this part of your instruction?

7 MINUTES: Timed so students can stay focused on completing the task.

EXPLAIN - 9 MINUTES

Plan a fair test

Students are asked: What things will you need to do to test? What steps will you take to do the test? (shown in the rug as a whole class before hand) . Do the test. Once the facilitator observes the steps that students will take to do the test, they are green lit to follow their plan to complete

ELABORATE - TIME?

Inform the students that each group member will have to use the magnet to paint and to pay attention to the colors they see as they paint.

DAY TWO

ENGAGE

If you mix all the colors together what do you think will happen? What if we mix just 2 colors?

EXTEND/ELABORATE

What if we used items that were not magnetic, then what will happened? I permit the students to think-pair-share.

ILLUSTRATE/ILLUSTRATOR

On the lab sheet provided, draw and color pictures of the results of your lab experiment. (The paper plates will be in the groups' possession at this time)

EVALUATE - 20 MINUTES

Draw conclusions. Communicate results.

DAY 2) - On the next day, students observe their paintings and the items that were left in the paint.

Have them record their findings on their lab sheet.

Each group is then given an opportunity to share their findings with the class and how they moved the magnet on the bottom of their plate. It is important that students share what they know about how the magnets made their magnetic objects move or not move and by telling or showing others their painting. This permits them to work on the science process skill, communicate.

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Then I will display a video of how the magnet moves the magnetic object (paper clips and pipe cleaners) on the plate and how the colors are mixing. They also get to see that neither painting is the same, but we all use the same materials to paint.

**Draw what your group
thinks you will see in
your painting**

**Draw what your group
saw on your painting**

Name:

Magnetic Painting

TEAM NAME: _____

SCIENTIST: _____

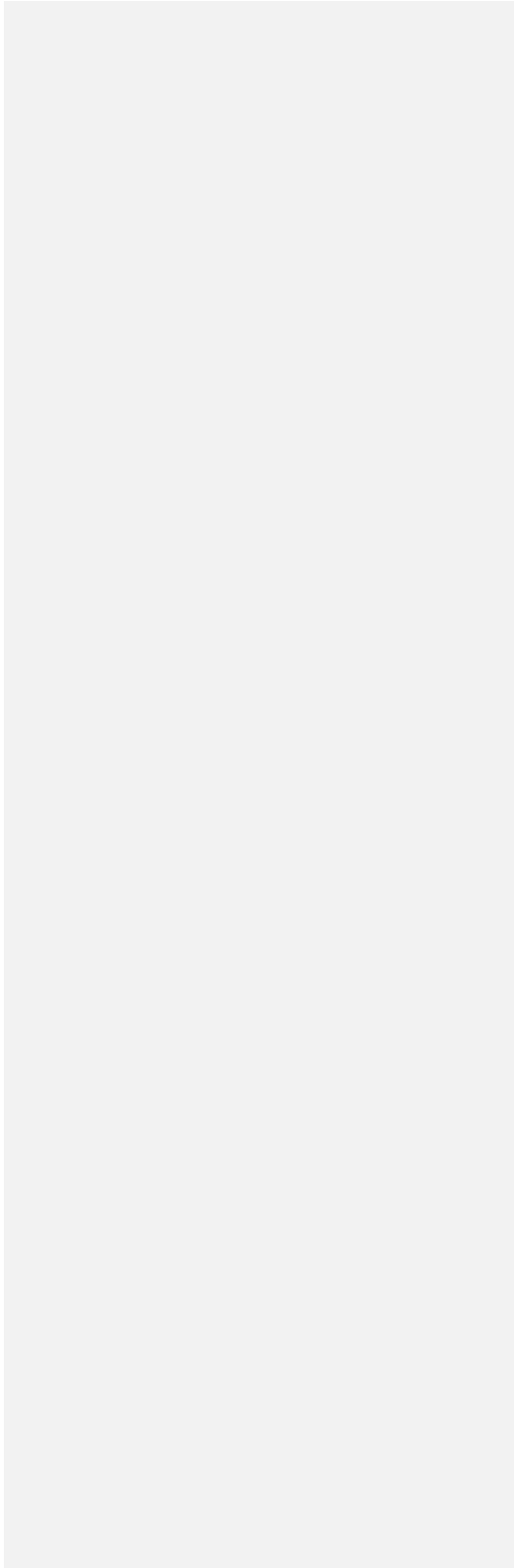


ONE QUESTION WE HAVE ABOUT THE ITEMS?

A HYPOTHESIS WE HAVE ABOUT WHAT WILL HAPPEN WHEN WE MOVE THE
MAGNET UNDER THE PLATE?

WHAT SCIENTIFIC PROCESS IS OCCURRING?

Explain:



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Student Name: _____ Date: _____

This project shows that the student:	4	3	2	1
1. Followed Directions				
2. Understood New Concepts:				
3. Used Creativity; Did Not Copy				
4. Used Good Craftsmanship				
5. Has a Good Composition				
6. Used Time Wisely; Finished Project				
7. Used Art Materials Correctly				

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