



Project Essential Questions

- What common objects are attracted to magnets?
- How do objects both magnetic and non-magnetic interact with magnets?

PROJECT DESCRIPTION

In this project, students will use their knowledge of previously taught magnetic properties to create a visual arts piece. Students will explore a variety of magnetic and non-magnetic materials to create a one-of-a-kind painting. During their painting, they will differentiate objects between magnetic and non-magnetic properties. Students will take time to document their observations and write about their magnetic discoveries.

LEARNING TARGETS

“I Can...”

- Make predictions about magnetism based on my knowledge of magnetic properties
- Differentiate objects that are magnetic from those that are non-magnetic
- Use visual arts to create a unique painting based on the properties of these objects (magnetic objects will be used to “paint” while non-magnetic objects will remain stationary).
- Sort objects by their magnetic properties
- Reflect on my findings and draw conclusions about magnets based on my project observations

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Units provide differentiated ideas and activities aligned to a sampling of standards.

The units do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

Produced through the U.S. Department of Education: Arts in Education—Model Development and Dissemination Grants Program
Cherokee County (GA) School District and ArtsNow, Inc.

DURATION: 1-2 days

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ESSENTIAL QUESTIONS

<ul style="list-style-type: none"> ● What common objects are attracted to magnets? ● How do objects both magnetic and non-magnetic interact with magnets?

STANDARDS

Curriculum Standards	Arts Standards
<p>S3P2 Students will investigate magnets and how they affect other magnets and common objects. a. Investigate to find common objects that are attracted to magnets.</p> <p>ELA.W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p>	<p>VA3PR.1 Creates artworks based on personal experience and selected themes. b. Creates artworks emphasizing one or more elements of art (e.g., color, line, shape, form, texture).</p> <p>VA3PR.2 Understands and applies media, techniques, and processes of two-dimensional art processes (drawing, painting, printmaking, mixed-media) using tools and materials in a safe and appropriate manner to develop skills. f. Creates paintings with a variety of media (e.g., tempera, watercolor).</p>

KEY VOCABULARY

Content Vocabulary
<ul style="list-style-type: none"> ● Magnet ● Characteristics ● Iron ● Steel ● Attract ● Magnetism ● Bar magnet ● North Pole

<ul style="list-style-type: none"> • South Pole
Art Vocabulary
<ul style="list-style-type: none"> • Aesthetics: the term that refers to that which is beautiful and visually pleasing • Color: an element of art with three properties 1) hue, the name of the color, e.g. red, yellow, etc. 2) intensity or the purity and strength of the color such as brightness or dullness and 3) value, or the lightness or darkness of a color • Media: the tools and materials an artist uses

TECHNOLOGY INTEGRATION

<ul style="list-style-type: none"> • Recycling YouTube video: Kid-powered Magnetic Separating Recycling Conveyor Belt: https://www.youtube.com/watch?v=FFvc0-cP0jw

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> • Teacher will monitor students through anecdotal notes while they are creating their paintings and sorting their materials 	<ul style="list-style-type: none"> • Written student observations and reflections in Science Journal • Science Journal Rubric (See Downloads) • Magnetic/Non-magnetic painting Rubric (See Downloads)

MATERIALS

Thick cardstock, Tempera paint (primary colors), various sized paint brushes, chalk pastels, class sets of wand magnets, dozen cookie sheets (small)
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Activating Strategy (5- 10 min)
<ul style="list-style-type: none"> • YouTube video: Kid-powered Magnetic Separating Recycling Conveyor Belt (57 seconds): https://www.youtube.com/watch?v=FFvc0-cP0jw • Teacher demonstration with soda can and vegetable/soup can • Discuss: Why is one type of can magnetic while the other is not?
Main Activity
<p>Part 1</p> <ul style="list-style-type: none"> • Teacher will lead a class discussion of what makes an object magnetic. Teacher will make a T-chart (magnetic, non-magnetic) and students will contribute ideas to fill it in. Students will make predictions as to which objects are magnetic and non-magnetic. <p>Part 2</p> <ul style="list-style-type: none"> • Students will create a T-chart and label one side magnetic and the other non-magnetic. • Student partner groups will each be given a paper bag containing: small piece of wood, penny, paper clip, eraser, dime, screw, thumb tack, nail. • Each group will be given two bowls, one to sort magnetic, one to sort non-magnetic. • Each group will be given one cookie sheet, two pieces of cardstock, two magnetic wands, tape to adhere the paper to the cookie sheet, and four colors of paint (one squeeze of each color on each paper).

- Students will take turns choosing an item and seeing if they can paint with it. After both students have used the item, they will place it in the appropriate bowl.

Part 3

- Students will complete their T-chart based on their sorting of magnetic or non-magnetic objects.
- Students will complete a written reflection evaluating why certain objects are magnetic or non-magnetic.
- Compare the T-chart created as a class to those created by the students.

Classroom Tips:

- Teacher will pre-select partner groups
- Teacher will lay-out behavior expectations
- Teacher will model how to set-up the cookie sheet, paper, paint, and magnets

REFLECTION**Reflection Questions**

- *How did creating a painting through the exploration of magnetic and non-magnetic materials help me identify some common objects that are attracted to magnets, as well as those that are not?*

DIFFERENTIATION**Remedial/EL Students:**

- During the Reflection part of this project the following modifications could be made: place students in small groups, assist with Guided writing, provide sentence starters, provide graphic organizers, a word bank based on content vocabulary, a paragraph frame, or modify the length/writing assignment based on student needs.

Accelerated:

- These students could research how recycling is done in the real world using magnets to separate metal from other objects (like in the video). They could then compose a narrative story to portray the journey of a piece of metal or nonmetal object through the recycling process. Also, they could research other uses of magnets in the real world (such as store sensors on clothing for anti-theft).

ADDITIONAL RESOURCES**Books**

- *What Makes a Magnet?* by Franklyn M. Branley

Websites

- YouTube video: Kid-powered Magnetic Separating Recycling Conveyor Belt:
<https://www.youtube.com/watch?v=FFvc0-cP0jw>
- sciencewiz.com/Portal/portal_to_magnetism.php
- www.internet4classrooms.com/science_elem_magnets.htm

APPENDIX (See Downloads)

- **Magnet Painting Rubric**

CREDITS

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Arts in Education--Model Development and Dissemination Grants Program
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Magnet Painting Rubric

Task	4	3	2	1
Writing Process	Their informative writing is well organized: introduces the topic, develops the topics with facts and details, and provides a concluding statement. Everything is written in complete sentences. Science vocabulary is present in student writing.	Most of the time the informative writing is well organized: introduces the topic, most of the time develops the topics with facts and details, and provides a concluding statement. Most of the time, the writing is written in complete sentences. Science vocabulary is included some in student writing.	Some of the time the informative writing is organized: somewhat introduces the topic, somewhat develops the topics with facts and details, and somewhat provides a concluding statement. Some of the time, the writing is written in complete sentences. Science vocabulary is rarely included in student writing.	Rarely is the informative writing organized: does not introduce the topic, develop with facts and details, or provide a concluding statement. Rarely is the writing written in complete sentences. Science vocabulary is not included in student writing.
Creation of painting using magnetic and non-magnetic objects	All magnetic objects have been swirled through all four colors, covering the majority of the cardstock.	All or most of the magnetic objects have been swirled through at least three colors, covering the majority of the cardstock.	Some of the magnetic objects have been swirled through at least two colors, covering at least 50% of the cardstock is covered.	Less than half of the objects were used to create the painting, and less than half the cardstock is covered.
Accuracy of Science Content (T-Chart)	All eight objects are sorted into the correct categories of magnetic/non-magnetic.	At least six objects are sorted into the correct categories of magnetic/non-magnetic.	At least four objects are sorted into the correct categories of magnetic/non-magnetic.	At least two objects are sorted into the correct categories of magnetic/non-magnetic.
Student Collaboration	Student worked well with their partner throughout the entire project. Student gave positive feedback to peer. They shared materials appropriately.	Student worked well with their partner most of the time. Student gave positive feedback to their peer most of the time. They mostly shared their materials appropriately.	Student worked well with their partner some of the time. Student gave positive feedback to their peer some of the time. They somewhat shared their materials appropriately.	Student did not work well with their partner. Student did not give positive feedback to their peer. They did not share their materials appropriately.

Total Score: _____