



## Project Essential Questions

- Why do magnets attract and repel each other?
- How can drama be used to model the relationships between magnetic poles?

### PROJECT DESCRIPTION

In this project, students will dramatize how magnets attract and repel. Students will create dialogue and use their actor voices and bodies to dramatize different magnetic poles, as well as common objects that are magnetic and non-magnetic.

### LEARNING TARGETS

“I Can...”

- Describe why magnetic poles attract and repel
- Dramatize magnetic poles using dialogue and movement
- Apply drama to the classification of common objects that are magnetic and non-magnetic



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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.

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Cherokee County (GA) School District and ArtsNow, Inc.

**DURATION: 2-3 days**

Project Description	Learning Targets
<p>In this project, students will dramatize how magnets attract and repel. Students will create dialogue and use their actor voices and bodies to dramatize different magnetic poles, as well as common objects that are magnetic and non-magnetic.</p>	<p>“I Can...”:</p> <ul style="list-style-type: none"> <li>• Describe why magnetic poles attract and repel</li> <li>• Dramatize magnetic poles using dialogue and movement</li> <li>• Apply drama to the classification of common objects that are magnetic and non-magnetic</li> </ul>

**ESSENTIAL QUESTIONS**

<ul style="list-style-type: none"> <li>• Why do magnets attract and repel each other?</li> <li>• How can drama be used to model the relationships between magnetic poles?</li> </ul>
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**STANDARDS**

Curriculum Standards	Arts Standards
<p><b>S3P2</b> Students will investigate magnets and how they affect other magnets and common objects.  <b>b.</b> Investigate how magnets attract and repel each other.</p> <p><b>ELA.W.3.1.D</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p><b>ELA.V.3.2.B</b> Develop the topic with facts, definitions, and details.</p> <p><b>ELA.V.3.3.A</b> Use dialogue and descriptions of actions, thoughts, and feeling to develop experiences and events or show the response of characters to situations.</p>	<p><b>TAES3.2</b> Developing scripts through improvisation and other theatrical methods.  <b>c.</b> Develops characters and setting through action, sensory details, cause and effect relationships, and dialogue.  <b>e.</b> Creates scripts that are appropriate in purpose, expectations, and length for the audience.</p> <p><b>TAES3.3</b> Acting by developing, communicating, and sustaining with roles within a variety of situations and environments.  <b>a.</b> Communicates a character's actions, motives, emotions, and traits through voice, speech, and language.</p>

**KEY VOCABULARY**

Content Vocabulary
<ul style="list-style-type: none"> <li>• Poles</li> <li>• Attract</li> <li>• Repel</li> <li>• Magnetic</li> <li>• Non-magnetic</li> <li>• Opposite</li> </ul>

Art Vocabulary
<ul style="list-style-type: none"> <li>● Character: an actor or actress in a specified role</li> <li>● Collaboration: two or more people working together in a joint intellectual effort</li> <li>● Concentration: the ability of the actor/actress to be “in” character – that is, to be like the character s/her is portraying – in dialog, attitude, carriage, gait, etc.</li> <li>● Dialogue: a conversation between two or more persons</li> <li>● Diction: using a “crisp and Clear” actor voice that can be understood by everyone watching and listening</li> <li>● Facial Expression: using your face to show emotion</li> <li>● Gesture: an expressive movement of the body or limbs</li> </ul>

**TECHNOLOGY INTEGRATION**

<ul style="list-style-type: none"> <li>● Computers or tablets could be used to type students’ scripts instead of writing them on an index cards</li> </ul>
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**ASSESSMENTS**

Formative	Summative
<ul style="list-style-type: none"> <li>● Accuracy of written dramatization</li> <li>● Collaboration of peers</li> </ul>	<ul style="list-style-type: none"> <li>● Written script with beginning, middle, and end.</li> <li>● <b>Magnetic Drama Rubric</b> (See Downloads)</li> <li>● Completed Video</li> </ul>

**MATERIALS**

<p>North and South magnet labels (affixed to the magnet characters shoulders. North on one shoulder, South on the other shoulder), pictures of other common objects that are magnetic and non-magnetic (paper clip, nail, safety pins, aluminum can, a plastic bottle), iPad for videoing or other video device</p>
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Activating Strategy (5-10 min)
<ul style="list-style-type: none"> <li>● Teacher will begin lesson by getting all students involved in the process of using their voice and body.</li> <li>● Teacher can begin with the E-clap technique. The teacher will say “E” using different levels of voice and speed, while the students clap at that level and speed. The teacher can then clap, and have the students say “E” to the volume level and speed of the clap.</li> <li>● Any other drama voice warm-up strategies would also be effective.</li> </ul>
Main Activity
<p><b>Part 1</b></p> <ul style="list-style-type: none"> <li>● Teacher will use magnets to demonstrate how opposite poles attract and like poles repel.</li> <li>● Teacher will then demonstrate how to dramatize how opposite poles would attract, and like poles would repel using voice and body movements.</li> <li>● Teacher will also demonstrate how to dramatize how common objects are either magnetic or non-magnetic.</li> </ul> <p><b>Part 2</b></p> <ul style="list-style-type: none"> <li>● Teacher will review the information the students have learned about magnetic and non-magnetic objects.</li> </ul>

- Teacher will review the elements of a story telling drama using a simple beginning, middle, and end script.

**Part 3**

- Students will create and write a small group short dramatization about magnets and how the poles attract.
- Students will include a beginning, middle, and end for their dramatization.
- An example of this would be two north poles walk up to each other, and repel one another.
- Students will use their voice and body to dramatize this action. They might begin with “Hey, why are you pushing me?” (beginning), “I’m not pushing you, you are pushing me.” (middle), “I know, we are like poles, and we are repelling each other.” (end).
- The students will repeat this type of process with common objects in their group.
- Groups will have at least 3 small scripts with beginning, middle, and end. One of them has to be about the poles repelling and attracting.
- The others can be about being attracted or not attracted to the other magnetic and non-magnetic objects in the group.

**Part 4**

- Students will present their magnetic drama to the class. Other classroom students may provide constructive feedback on theatrical delivery (diction, facial expression, tone, volume, pitch, etc.) using theater vocabulary.

**Classroom Tips:**

- Teacher will pre-select student groups
- Teacher will constantly monitor the room, and work with groups as needed.

**REFLECTION****Reflection Questions**

- *Explain how north and south poles attract and repel each other.*
- *How did our drama production help me understand how north and south poles attract and repel each other?*
- *How did our drama production help me understand how other common objects are attracted or not attracted to magnets?*

**DIFFERENTIATION****Remedial/EL Students:**

- In Part 2 of this project, teachers could provide students with visual guides of what makes up magnetic/non-magnetic properties, and provide students with visual guides on story parts.
- In Part 4 of this project, a Review of Theatrical Terms with students in small group would be beneficial.

**Accelerated:**

- These students could compose a song using found/body sounds that goes with either repel or attract. When two objects/poles come “on stage” in the class, they would provide the song in the background to illustrate either repelling or attracting as the drama is performed on stage.
- These students could also research to compare and contrast the earth’s north and south pole to the north and south (positive and negative) poles of a bar magnet.

**ADDITIONAL RESOURCES**

**Books**

- *Magnetic and Nonmagnetic* by Angela Royston
- *Amazing Magnetism (Magic School Bus)* by Rebecca Carmi

**APPENDIX (See Downloads)**

- **Magnetic Drama Rubric**
- **Magnetic Drama Written Reflection**

**CREDITS**

U.S. Department of Education  
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### Magnetic Drama Rubric

Task	4	3	2	1
<b>Writing Process</b>	Student demonstrates a thorough understanding of which objects are magnetic and non-magnetic through more than three fully developed scenes. Each scene clearly depicts the interaction of a material and a magnetic pole.	Student demonstrates a thorough understanding of which objects are magnetic and non-magnetic through at least three mostly developed scenes. Each scene mostly depicts the interaction of a material and a magnetic pole.	Student demonstrates an understanding of which objects are magnetic and non-magnetic through at least two somewhat developed scenes. Each scene somewhat depicts the interaction of a material and a magnetic pole.	Student demonstrates a minimal understanding of which objects are magnetic and non-magnetic through at least two rarely developed scenes. Each scene rarely depicts the interaction of a material and a magnetic pole.
<b>Science Concept</b>	The science vocabulary is used correctly and fully integrated throughout each scene.	The science vocabulary is mostly used correctly and mostly integrated throughout each scene.	The science vocabulary is somewhat used correctly and somewhat integrated throughout each scene.	The science vocabulary is rarely used correctly and rarely integrated throughout each scene.
<b>Performance Skills</b>	Student consistently uses a loud, clear, expressive voice to perform his or her scene. Facial expressions and body movement is integrated fully.	Student most of the time uses a loud, clear, expressive voice to perform his or her scene. Facial expressions and body movement is integrated most of the time.	Student somewhat uses a loud, clear, expressive voice to perform his or her scene. Facial expressions and body movement is somewhat integrated.	Student rarely uses a loud, clear, expressive voice to perform his or her scene. Facial expressions and body movement is rarely integrated.
<b>Student collaboration</b>	Student consistently collaborates with their group members and contributes ideas to the group. Mutual respect is consistently demonstrated by student towards his/her peers.	Student most of the time collaborates with their group members and contributes ideas to the group. Mutual respect is mostly demonstrated by student towards his/her peers.	Student somewhat collaborates with their group members and contributes some ideas to the group. Mutual respect is somewhat demonstrated by student towards his/her peers.	Student rarely collaborates with their group members and rarely contributes ideas to the group. Mutual respect is rarely demonstrated by student towards his/her peers.

Total Score: \_\_\_\_\_

Written Reflection – Magnetic Drama

1. Explain how north and south poles attract and repel each other.

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2. How did our drama production help me understand how north and south poles attract and repel each other?

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3. How did our drama production help me understand how other common objects are attracted or not attracted to magnets?

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