



FORCES THAT ATTRACT & REPEL



Dear Educator:

Thank you for choosing to bring your students to the Science Gallery. When you arrive, check in at the box office on the Planetarium level. For payment, you will be required to know the exact number of students and adults in your group.

Store outerwear, lunches, backpacks, etc, in the cloakroom in the lower level. No backpacks in the gallery. The Manitoba Museum is not responsible for loss or theft; valuables should be left at home or school.

For further information, please visit our website www.manitobamuseum.ca or call 988-0626.

Visiting the Science Gallery

After your program, you will be exploring the Science Gallery. Our exhibits are best enjoyed with the assistance of an adult – teachers are asked to divide the class into smaller groups assigned to adult supervisors.

Please note, washrooms and water fountain are located near the *Numbers Game* exhibit. There is no need to leave the gallery during your visit.

Science Gallery Rules

1. No running, please.
2. Out of respect for other classes and visitors, please use indoor voices.
3. Food and drink are not allowed in the gallery. No gum, please.
4. Before entering the Matrix –the room of mirrors– everyone must remove their shoes and put on the slippers provided. Please put your shoes back on your feet when you leave the Matrix.
5. Please read or listen to instructions before trying out the exhibits.

Class control remains the teacher's responsibility.

Please turn off cell phones or set the ring to silent during programs.

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Grade: 3
Cluster: Forces that attract or repel
Duration: 30 minutes

Program Outline:

This program features experiments with forces, primarily gravity, magnetism, electromagnetism and static electricity. A great introduction or follow up to the *Forces* cluster, *Forces that Attract and Repel* asks students to hypothesize and draw conclusions from their real-life experiences with forces. Two highlights of the program are the use of an electromagnet and the introduction of a Van de Graaff generator.

Vocabulary

Here is a list of words we use during this program:

Force, push, pull, attraction, repulsion, gravity, magnetism, magnet, north and south poles, opposite, like (as in same), electromagnet, static electricity, positive and negative charges.

Pre-visit Suggestions:

1. Discuss the basic concept of a force (push or pull, attraction or repulsion). Come up with examples of forces.
2. Create a list of ways we use magnets in our everyday lives.
3. Name three ways we can create static electricity at home or school.

Follow-up Activities

Magnetic force can move certain objects without touching them directly. Measure the maximum distance a magnet can move a particular object –try paperclips, another magnet or a tin can.

Collect a variety of items from the classroom, outdoors or the home (aluminium cans, rocks, paperclips, plastic bottle, a mitten, keys, scissors, pencils, etc). Have your students guess which objects will be attracted to the magnet. Next, test the objects to see which ones are actually magnetic. Ask them if the results surprise them!

