Teacher Resources: Magnetic Fishing

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STEMbound Contact Information

If anything seems missing or damaged, please contact us as soon as possible. Thank you!

Contact Name	Contact Information
STEMbound Team	STEMbound@sourcewell-mn.gov

Website Quick Links		
STEMbound Home Page	Equipment Check-out Library Equipment Request	Consultant-led Learning Consultant-led Request
STEM Network	Partnership in Planning Request	Professional Learning

You can access the above links and more at https://mn.sourcewell.org/education/STEMbound.

Equipment Snapshot

Purpose

The Magnetic Fishing kit provides an interactive, hands-on way for students to explore magnetism, classification, and material properties. This set allows students to "fish" for items using poles with magnets on the ends, discovering which objects are magnetic and which are not. It encourages scientific thinking, observation, prediction, and sorting skills.

- Age appropriateness: Recommended for grades K-2.
- Common uses: STEM centers or science stations, sensory and discovery bins, small group instruction or free-choice exploration.
- Classroom applications: Teaching magnetism and physical properties in science units, supporting fine motor development, integrating early engineering or sorting tasks, and early childhood inquiry-based learning activities.

Operation

- Fill the collapsible bucket with the provided magnetic and nonmagnetic items.
- Extend or prepare the fishing poles. Each one has a magnet attached by string.
- Students lower the poles into the bucket and attempt to "catch" items.
- As items are picked up, students can classify them (e.g., magnetic vs. nonmagnetic), sort by material or color, and record observations.

Maintenance

- Cleaning: Wipe down magnetic poles and bucket with a damp cloth and mild soap after use.
- Storage: Collapse the bucket for compact storage. Store poles flat to avoid tangling strings. Store metal and nonmetal objects in small clear bags.
- Inspection: Periodically check for frayed strings, loose magnets, or damaged pieces. Please notify STEMbound of any broken components to ensure continued safe use.

Safety Considerations

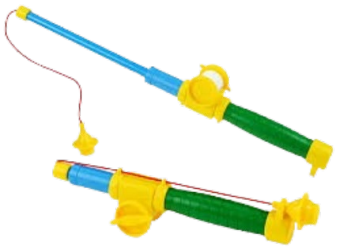
- Supervision is always required. Magnets should never be swallowed, and some small parts may present choking hazards.
- Teach students to use the fishing poles gently to avoid whipping or swinging them at peers.
- Keep magnets away from electronics and digital devices.
- If a magnet is swallowed or inserted into the nose or ear, seek immediate medical attention.

Possible Projects

- Magnet Sorting Challenge: Students sort all items into "magnetic" and "nonmagnetic" categories and justify their reasoning. *See Activity sheet attached*
- Magnet maze: Create a maze or path where students must "fish" for only certain items to complete the course.
- STEM Storytime Extension: Pair with a story about magnets and have students predict which materials in the story might be magnetic.

Contents Checklist

Please ensure all items and totes are present before and after use.

Item	Picture	Quantity
Collapsible buckets		12
Magnetic Fishing poles		12
Magnetic and nonmagnetic materials	 	12 sets in clear totes

Usage Instructions

Setup Instructions (5-7 minutes)

1. Prepare the bucket by unfolding the collapsible bucket and expanding it to full size.
2. Place the bucket on a stable surface like a low table, desk, or mat.
3. Place a mix of the materials provided into the bucket.
    - Add additional materials if desired. These may include nuts/bolts, plastic caps, beads, erasers, fridge magnet, small tools, utensils, or jar lids.

4. Prepare fishing poles. Ensure magnets are securely attached to strings. Untangle strings and inspect for frays or weak spots.

Operating instructions

- Introduce the activity. Briefly explain that students will test which items are magnetic by trying to “fish” them out using magnetic poles.
- Demonstrate use of poles. Model lowering the magnet into the bucket and lifting an item. If the item sticks to the magnet, it is magnetic.

- Allow students to fish for items and sort them into categories
- Encourage predictions, counting, recording results, and group discussions.

Best Practices

- Pair students to promote cooperative learning and to help keep the bucket in place.
- Use a timer or turn cards for fair play during centers.
- Vary materials for students to sort.

Cleaning and Maintenance

Cleaning

- Wipe down poles, magnets, and any plastic items with disinfecting wipes after use.
- If used for an extended period, wash all plastic and metal materials with warm, soapy water and dry thoroughly.
- When complete, put collapsed buckets in labeled tote. Clip magnets to poles to avoid tangles.
- Store materials in clear plastic totes provided.

Maintenance

- Check strings and magnetic tips for wear or damage.
- Re-tie or replace loose strings.
- Ensure magnets are firmly attached—hot glue may be used if safe and appropriate.
- Contact STEMbound for any broken or missing pieces.

Troubleshooting Guide

Problem	Solution
Magnet won't pick up any objects	Ensure you're using magnetic materials; check if the magnet has become demagnetized or dislodged.
Items sticking to magnet too strongly	Have students gently slide item off the magnet rather than pulling straight off.
Magnet falls off pole	Re-glue or securely tie the magnet with a reinforced knot. Contact STEMbound for a replacement pole.

Extension Options

Cross-curricular uses

Grades K-2
ELA ▪ Descriptive language: Pair up students and have them describe caught items ("It's smooth and shiny.") developing vocabulary. o Benchmark: Use describing words in speaking ▪ Informational writing: Students draw one magnetic and one non-magnetic item and label them. o Benchmark: Write about observations using drawings and simple sentences.
Math ▪ Counting and comparing: Students tally magnetic vs non-magnetic finds and report which group is larger, smaller, or equal. o Benchmark: Classify objects into categories, count and compare category sizes ▪ Build bar graphs showing counts of magnetic vs non-magnetic items, then read and discuss o Organize and interpret data with objects, tally charts and graphs
Science ▪ Students "fish" items and predict, test, and verbally explain differences. o Benchmark: Understand properties and behaviors of materials
Social ▪ Community Helpers: Role-play as "magnet scientists" or "recycling workers" focusing on tool use. o Benchmark: Role of tools in community ▪ Economics and materials: Talk about recycling metals and why we separate magnetic from non-magnetic. o Benchmark: Discuss where materials come from and how we use them
Other ▪ Art: Press magnetic items into clay or paint to create patterns. o Benchmark: Create artwork using texture ▪ Music: Mime "fishing motions" to rhythm instruments, reinforcing motor skills and timing. o Benchmark: Play simple rhythms

Additional Resources

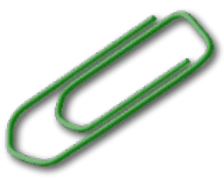
- Educator resources for magnets- BrainPOP
- Magnetic/Nonmagnetic activity- see below

Magnetic Fishing Activity

Directions

Use the table below to make predictions on which items are magnetic, and which are not as a class. Once learners make predictions, test each item in small groups and record results in the table.

**Please make copies for classroom use

Item	Predictions		Test Results	
Binder clip 	Magnetic	Not magnetic	Magnetic	Not magnetic
Paper clip 	Magnetic	Not magnetic	Magnetic	Not magnetic
Cotton ball 	Magnetic	Not magnetic	Magnetic	Not magnetic
Key 	Magnetic	Not magnetic	Magnetic	Not magnetic
Plastic cup 	Magnetic	Not magnetic	Magnetic	Not magnetic
Straw 	Magnetic	Not magnetic	Magnetic	Not magnetic
Spoon 	Magnetic	Not magnetic	Magnetic	Not magnetic
Colored paper clip 	Magnetic	Not magnetic	Magnetic	Not magnetic

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Marble 	Magnetic	Not magnetic	Magnetic	Not magnetic
Hot glue stick 	Magnetic	Not magnetic	Magnetic	Not magnetic
Nickel 	Magnetic	Not magnetic	Magnetic	Not magnetic
Penny 	Magnetic	Not magnetic	Magnetic	Not magnetic
Washer 	Magnetic	Not magnetic	Magnetic	Not magnetic
Bobby pin 	Magnetic	Not magnetic	Magnetic	Not magnetic
Popsicle stick 	Magnetic	Not magnetic	Magnetic	Not magnetic
Silver marble 	Magnetic	Not magnetic	Magnetic	Not magnetic

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