Does shiny mean magnetic?

Ages 5–7 with a grown-up · 5–10 minutes; adult demonstration · Test a material claim

https://kiddos.ai/explorations/learning-with-gina-and-ollie/does-shiny-mean-magnetic

Wonder together

Both, one or neither? Which tray will our magnet stick to?

Materials

One large intact enclosed age-appropriate toy magnet, a prechecked steel baking tray and a plain aluminum tray.

Adult setup — read before trying

Adult operates and stores the magnet, following its instructions. No loose/small magnets, magnetic balls, powerful rare-earth magnets, damaged toys or detachable parts. Use clean cool smooth-edged trays; no hot cookware, sharp foil, nails, coins or clips. Keep away from mouths, younger children, pets and sensitive devices. Stop if a magnet is missing/damaged; suspected swallowing requires immediate medical attention. If suitable equipment is unavailable, use the illustrated story. Keep each tray supported during the gentle pull; notice resistance rather than trying to lift a heavy tray.

Try together

1. Check: large, intact, enclosed toy magnet.
2. Touch steel. Pull gently.
3. Try aluminum. Then put it away.

Keep the comparison clear

Keep fixed: Same magnet, supported trays and contact followed by a gentle pull.

What changes: Tray material.

Look for: Notice resistance to the gentle pull; a heavy tray does not need to lift.

Explain with care

An ordinary magnet sticks to some metals. The tested steel tray attracts it; aluminum does not make it stick in this activity.

Shininess cannot tell us. Steel composition varies, especially stainless steel; precheck the selected tray. Do not generalize to every metal or every response to magnetic fields.

Talk about it

Both, one or neither? Which tray will our magnet stick to?

Answer cue: Welcome a guess before reading the result. No correct prediction is required.

Which tray resisted pulling the magnet away?

Answer cue: The prechecked steel tray does; the aluminum tray does not in this test.

Can shininess alone tell us what will stick?

Answer cue: No. We need to test the material.

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A parent move: Model revising a guess cheerfully: “The test gave me a new idea.”

Start simply: Child predicts and points; adult keeps control of all equipment.

Explore further: Compare this result with the comb story in words: magnetic and static attraction are distinct effects.

Return to it: Ask whether both shiny trays had to behave the same, and what the test showed.

In the classroom

Flexible 20-minute small-group session; pause or shorten as needed.

3 min · Wonder

Read pages 1–2. Invite a prediction with words, pointing or a sketch; keep the result hidden.

4 min · Notice the story

Read pages 3–5. Which tray resisted pulling the magnet away? Separate the observation from the explanation.

9 min · Try together

Use the materials and adult setup on this guide, then follow the activity steps in this guide. Notice resistance to the gentle pull; a heavy tray does not need to lift.

4 min · Make meaning

Can shininess alone tell us what will stick? Invite a drawing, a description or an adult-written note. Model revising a guess cheerfully: “The test gave me a new idea.”

Understanding check

Can shininess alone tell us what will stick?

Answer guidance: No. We need to test the material.

Participation choices: Child predicts and points; adult keeps control of all equipment. Accept pointing, words, a drawing or adult-directed action. Use the story alone if the activity is unsuitable.

Words to explore

magnetic — Here, attracted strongly enough to stick to an ordinary magnet.

Full adult notes and honest limits

This is an adult-operated demonstration for ages 5–7. Use one age-appropriate, large, intact enclosed toy magnet with no accessible or detachable magnet pieces. Do not use small fridge decorations, loose magnets, magnetic balls, powerful rare-earth magnets or a damaged toy. The adult controls and stores the magnet; the child predicts and observes. Keep it away from mouths, younger children, pets and sensitive devices, and follow its manufacturer’s instructions. If any magnet is missing or damaged, stop. Suspected swallowing requires immediate medical attention.

Choose two clean, cool, smooth-edged trays: a steel baking tray that the adult has privately checked attracts this magnet, and a plain aluminum tray. Metal composition varies, especially stainless steel, so never promise that every steel-looking kitchen object will behave alike. Do not use hot cookware, sharp cut foil, nails, coins or small clips. If suitable equipment is unavailable, use the illustrated sequence as a prediction-and-discussion activity.

The pictures use one large red U-shaped enclosed teaching magnet. Its shape introduces the tool; the same magnet is used for both trays. A large intact enclosed age-appropriate toy magnet of another shape can be used for the family activity under its manufacturer's instructions. The adult brings the same magnet into contact with each tray and gently pulls away while the tray stays supported. A resisting pull is the useful observation; a heavy tray need not lift. The steel picture shows the magnet attached; the aluminum picture shows the same magnet withdrawn after contact. Describe the result, not the child's guess, as the evidence.

The lesson is a narrow everyday rule: not every metal sticks to an ordinary magnet. Aluminum is a useful counterexample to "shiny means magnetic." Avoid claiming all shiny things are metal, all steel is magnetic, or only metals ever respond to magnetic fields. We are not comparing magnet strength or teaching magnetic poles here. The related source story includes a broad metal simplification; clarify "some metals" during shared reading.

Parent move: model changing your mind cheerfully: "I guessed both. The test gave me a new idea." Invite a point, spoken prediction, drawing or adult-directed choice. For a group, keep the magnet in the demonstrator's control. Later ask whether shininess alone tells us what will stick; the useful answer is that we need to test the material. Connect with carousel 14, Can a comb lift paper?: a rubbed comb's static attraction is a different effect, not proof that paper is magnetic. This editorial tray test is not the exact activity in Gina and the Magnet Mystery. No live family trial was performed.

Related reading

Gina and the Magnet Mystery explores magnetic pulls and pushes. Clarify "some metals" alongside its broad metal wording; this tray test is an additional activity.

Scientific sources

acs-magnet — https://www.acs.org/education/whatischemistry/adventures-in-chemistry/experiments/metals-magnetism.html

cpsc-magnet — https://www.cpsc.gov/Safety-Education/Safety-Education-Centers/Magnets

cpsc-child — https://www.cpsc.gov/safety-education/neighborhood-safety-network/toolkits/child-safety

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App Store: https://apps.apple.com/app/id6720721998

Available physical books: https://www.amazon.com/author/kiddos-books