

Y3 Forces Magnets

KS2 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Why does a sledge travel further on ice than on grass?

Step 1 · What force slows things when surfaces rub together?

Friction

Step 2 · Which surface is smoother?

Ice

Step 3 · Which has less friction?

Ice — smooth surfaces have less friction

Answer: Ice is smoother than grass, so there is less friction to slow the sledge down, and it travels further.

Check: Smooth → less friction → further.

2. Now try one with the steps

Is a magnet pulling a pin a contact or a non-contact force?

Step 1 · Does the magnet have to touch the pin to move it?

Step 2 · So what kind of force is it?

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. What is a force?

2. What is friction?

3. Which surface has more friction: carpet or ice?

4. Give ONE example of when friction is helpful.

5. Name TWO magnetic materials.

6. Is aluminium magnetic?

7. What happens when two south poles face each other?

8. What happens when a north pole faces a south pole?

9. What is the difference between a contact force and a non-contact force? Give an example of each.

10. Results: ice 270 cm, wood 180 cm, carpet 70 cm, sandpaper 25 cm. Which surface had the most friction?

11. Using those results, how much further did the puck go on ice than on wood?

12. Why does a fridge magnet stick to the fridge door but not to a glass window?

13. Two magnets are lined up: N-S S-N. Will they attract or repel?

14. Why do people put grit on icy paths in winter?

4. Before you hand it in

Copper is attracted to magnets because it is a metal.

Only iron, steel, nickel and cobalt are magnetic. Copper, aluminium, gold and silver are not.

Friction makes things stop instantly.

On a smooth surface things slow gradually; on a rough one they stop quickly.

Two north poles attract.

The same poles repel; different poles attract.

All forces need to touch.

Magnetic force is a non-contact force.