

GRADE 4 LEARNING PACK

Forces, Magnets & Simple Machines

Investigate pushes/pulls, magnetic interactions and how simple machines can change force or movement.

LEARN • PRACTISE • CREATE • REFLECT

Original BrightPencil Kids resource - adult-led where appropriate

A4 edition • 12 purposeful pages • review copy

Print. Learn. Grow.

Grown-up guide

Learning objective

Investigate pushes/pulls, magnetic interactions and how simple machines can change force or movement.

Use this pack well

- Model the first example aloud, then let the learner try.
- Ask “How do you know?” more often than “Are you finished?”.
- Use real objects, talk, movement or observation when the activity suggests it.
- Stop or shorten the session if attention or enjoyment drops.
- Open-ended pages can have many successful answers.

Quality note

This resource was written originally for BrightPencil Kids. Curriculum sources informed scope and progression only; no third-party worksheet or story text is reproduced.

Learn the idea

1 Forces can change motion or shape.

2 Magnets exert forces without direct contact on some materials and other magnets.

3 Levers, pulleys or inclined planes can trade distance for force in useful ways.

Talk about it

Explain one idea in your own words. Give an example from real life, a drawing or an object if that helps.

Identify pushes/pulls in everyday mechanisms.

Test which safe objects are attracted to a magnet and record material, not colour, as the likely factor.

Map attraction/repulsion between poles.

Compare lifting an object directly with moving it up a ramp.

Explain one lever example using effort, pivot and load.

Try it beyond the page

Real-world / hands-on connection

Use a classroom magnet kit and simple ramp/lever setup with adult supervision.

Before you finish

What did you notice?

What evidence, object or example helped you?

What would you change if you tried again?

Create something

Your project

Design a mini “move the load” machine using one simple-machine idea and label how it helps.

Use this space for planning, drawing, mapping, designing or notes.

CHALLENGE

Think deeper

1. Do magnets attract every metal?

2. What can a ramp change about lifting?

3. What is the pivot point of a lever called?

Quick review

1. In one sentence, explain the big idea of “Forces, Magnets & Simple Machines”.

2. Draw or write one example that shows you understand.

3. Choose one activity from this pack and explain the strategy you used.

4. Write one question you still have.

Answer & discussion notes

Use these as guidance, not scripts. Open questions can have different successful responses when the reasoning is sensible and evidence-based.

1. Suggested response

No.

2. Suggested response

It can reduce the force needed by increasing the distance travelled.

3. Suggested response

The fulcrum.

Review before publication

Check age fit, factual accuracy, clarity, accessibility, rights provenance and whether the activity works in practice. This file remains a review copy until those checks are signed off.

FINISH

My learning reflection

I finished this BrightPencil learning pack.

One thing I understand better now:

A strategy that helped me:

Something I created or noticed:

My next small question or goal:

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