

GRADE 4 LEARNING PACK

Heat, Temperature & Insulation

Distinguish heat transfer from temperature and investigate insulation safely.

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

Distinguish heat transfer from temperature and investigate insulation safely.

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 Temperature is a measure related to how hot/cold something is; heat transfers energy because of temperature differences.

- 2 Insulators slow heat transfer.

- 3 Safe investigations avoid very hot materials and use careful measurement.

Talk about it

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

Guided practice

Choose an appropriate thermometer reading from sample data.

Compare cooling curves from two wrapped cups of warm—not hot—water.

Identify variables in an insulation test.

Explain why a wool layer can slow cooling.

Distinguish “keeps cold out” language from the idea of slowing heat transfer.

Try it beyond the page

Real-world / hands-on connection

With an adult, compare how quickly comfortably warm water cools in two safe containers; never use boiling water.

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 lunch-container insulation test with prediction, controlled conditions and temperature table.

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

CHALLENGE

Think deeper

1. What does insulation do?

2. Why use the same starting temperature in a comparison?

3. Should children handle boiling water in this investigation?

Quick review

1. In one sentence, explain the big idea of “Heat, Temperature & Insulation”.

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

It slows heat transfer.

2. Suggested response

For a clearer comparison.

3. Suggested response

No.

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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