

Heat: Sources, Transfer & Keeping Warm

Identify common heat sources and explore how materials can slow heat loss in safe contexts.

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

Identify common heat sources and explore how materials can slow heat loss in safe contexts.

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 Heat can come from Sun, electrical devices, friction and combustion, but some sources are dangerous.

2 Materials differ in insulating ability.

3 A fair test compares materials under similar conditions.

Talk about it

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

Sort common safe/unsafe-to-touch heat sources.

Predict which wrapping might keep warm water warmest in an adult-led test.

Identify what should stay the same in an insulation comparison.

Explain why metal may feel different from fabric at the same room temperature.

Record temperature only with suitable adult-approved equipment.

Try it beyond the page

Real-world / hands-on connection

Use cups of warm (not hot) water with adult supervision to compare simple insulating wraps if appropriate.

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 cosy container for keeping a pretend drink warm and label material choices.

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

CHALLENGE

Think deeper

1. What does insulation do?

2. Why must hot objects be adult-controlled?

3. What makes an insulation test fairer?

Quick review

1. In one sentence, explain the big idea of “Heat: Sources, Transfer & Keeping Warm”.

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

Burn/scald risk.

3. Suggested response

Keep cup, amount, starting temperature/time similar.

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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