

GRADE 5 LEARNING PACK

Environment, Resources & Engineering Design

Use evidence and a design cycle to investigate resource use, sustainability trade-offs and a practical environmental improvement.

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

Use evidence and a design cycle to investigate resource use, sustainability trade-offs and a practical environmental improvement.

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 Environmental decisions can involve competing needs, costs and benefits.

2 Engineering design is iterative: define, research, imagine, plan, make/model, test and improve.

3 Measuring before and after helps judge whether an intervention had the intended effect.

Talk about it

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

Compare renewable/non-renewable resource examples without treating any technology as impact-free.

Evaluate three fictional energy/waste proposals using evidence and trade-offs.

Define a measurable local problem such as litter, water or material use.

Create design criteria and constraints for an improvement.

Interpret before/after data and propose one revision.

Try it beyond the page

Real-world / hands-on connection

With an adult/teacher, audit one non-sensitive resource use such as paper or classroom electricity habits without touching electrical equipment.

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 small environmental improvement project with criteria, prototype sketch, test measure, review and revision plan.

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

CHALLENGE

Think deeper

1. Does “renewable” mean “zero impact”?

2. Why measure before and after a change?

3. Is the first design always the final design?

Quick review

1. In one sentence, explain the big idea of “Environment, Resources & Engineering Design”.

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

To evaluate whether the action made a difference.

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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