

GRADE 5 LEARNING PACK

Open Problem: Model, Test, Improve

Solve an open-ended design/problem task by defining criteria, modelling options, testing and revising.

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

Solve an open-ended design/problem task by defining criteria, modelling options, testing and revising.

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 Open problems can have several defensible solutions.

2 Criteria make solutions comparable.

3 Testing may reveal a need to revise the model or assumptions.

Talk about it

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

Build a clear model or organiser that shows: Open problems can have several defensible solutions.

Use supplied evidence to test this idea: Criteria make solutions comparable.

Compare two cases and explain where this principle matters: Testing may reveal a need to revise the model or assumptions.

Find one weak claim or assumption and revise it so it matches the evidence.

Write a short conclusion that states evidence, limitation and next question.

Try it beyond the page

Real-world / hands-on connection

Compare three fictional solutions against cost, access and performance criteria.

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 solution to a fictional classroom storage/route/problem and document two revisions.

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

CHALLENGE

Think deeper

1. Can an open problem have more than one good answer?

2. Why define criteria early?

3. What should happen when testing reveals a weakness?

Quick review

1. In one sentence, explain the big idea of “Open Problem: Model, Test, Improve”.

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

Yes.

2. Suggested response

They guide comparison and testing.

3. Suggested response

Revise the design or assumptions and test again.

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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