

GRADE 5 LEARNING PACK

Product Design: User, Need & Prototype

Design a simple product concept by identifying a user need, constraints, prototype and test feedback.

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

Design a simple product concept by identifying a user need, constraints, prototype and test feedback.

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 Design starts with a need or problem, not decoration.

2 Constraints such as materials, size, safety and cost shape solutions.

3 Prototypes help test ideas before final production.

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: Design starts with a need or problem, not decoration.

Use supplied evidence to test this idea: Constraints such as materials, size, safety and cost shape solutions.

Compare two cases and explain where this principle matters: Prototypes help test ideas before final production.

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

Observe one ordinary object with an adult and identify a design need it solves.

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 desk organiser or book stand with labelled prototype sketches and test criteria.

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

CHALLENGE

Think deeper

1. What is a design constraint?

2. Why prototype?

3. Is visual attractiveness the only design criterion?

Quick review

1. In one sentence, explain the big idea of “Product Design: User, Need & Prototype”.

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

A limit or requirement the solution must work within.

2. Suggested response

To test and improve ideas before final production.

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:

Print. Learn. Grow.