

Design Cycle: Need, Ideas, Prototype, Test, Improve

Use a simple design cycle to respond to a user need and revise a prototype based on testing evidence.

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 a simple design cycle to respond to a user need and revise a prototype based on testing evidence.

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 problems have users, needs and constraints.

2 Multiple ideas should be explored before choosing one.

3 Testing is useful when it leads to specific revisions.

Talk about it

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

Turn a vague problem into a user need statement.

Sketch three possible solutions.

Choose one using two criteria.

Build a paper/card prototype.

Record test feedback and make one justified change.

Try it beyond the page

Real-world / hands-on connection

Choose a harmless everyday organisation problem with an adult, such as keeping pencils sorted, and prototype a solution from reusable materials.

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

Complete a design portfolio page: need, criteria, sketches, prototype, test, revision and final explanation.

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

CHALLENGE

Think deeper

1. What is a constraint?

2. Why sketch more than one idea?

3. What makes testing useful?

Quick review

1. In one sentence, explain the big idea of “Design Cycle: Need, Ideas, Prototype, 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

A limit or requirement.

2. Suggested response

It prevents locking onto the first idea too early.

3. Suggested response

It produces evidence that informs improvement.

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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