

Materials: Properties, Mixtures & Changes

Relate material properties to uses and distinguish physical mixing/change from some irreversible changes.

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

Relate material properties to uses and distinguish physical mixing/change from some irreversible changes.

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 Material choice depends on properties such as strength, flexibility, transparency, absorbency and conductivity.

2 Mixtures combine substances without necessarily creating a new substance.

3 Some changes are reversible; others form new substances or are difficult to reverse.

Talk about it

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

Choose a suitable material for a raincoat, window, pan handle and bridge model.

Separate a sand-and-paperclip mixture using property differences.

Classify melting wax, dissolving salt, burning paper and freezing water as reversible/irreversible with care.

Explain why “looks different” does not always mean a new substance formed.

Independent thinking

Plan a simple separation method for a safe mixture.

Try it beyond the page

Real-world / hands-on connection

With adult supervision, investigate safe household materials for absorbency or transparency and record results.

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 product and justify three material choices using property vocabulary.

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

CHALLENGE

Think deeper

1. Why is metal often used for a saucepan body?

2. Is dissolving always irreversible?

3. What is a mixture?

Quick review

1. In one sentence, explain the big idea of “Materials: Properties, Mixtures & Changes”.

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 conducts heat and tolerates high temperatures, depending on the metal.

2. Suggested response

No.

3. Suggested response

Two or more substances physically combined.

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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