

GRADE 4 LEARNING PACK

Light & Sound: Patterns, Reflection & Vibration

Use models and observations to explain reflection, shadows, vibration and simple patterns in pitch.

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 models and observations to explain reflection, shadows, vibration and simple patterns in pitch.

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 Light travels from sources and can be reflected by surfaces.

2 Shadows depend on source, object and screen positions.

3 Sound comes from vibration; pitch can change when vibration conditions change.

Talk about it

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

Draw a source-object-shadow diagram.

Compare reflection from mirror, foil and paper.

Predict how shadow size changes as object position changes.

Observe a ruler/string vibration and connect it to sound.

Change vibrating length and describe the effect on pitch without using unsafe sound levels.

Try it beyond the page

Real-world / hands-on connection

Use a torch, mirror and quiet sound-makers under adult supervision; never look at the Sun or use harmful sound levels.

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

Create a two-part investigation poster: one light pattern and one sound pattern, with evidence tables.

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

CHALLENGE

Think deeper

1. What causes sound?

2. What forms a shadow?

3. Should a learner test sound by making it extremely loud?

Quick review

1. In one sentence, explain the big idea of “Light & Sound: Patterns, Reflection & Vibration”.

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

Vibration.

2. Suggested response

Light being blocked by an object.

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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