

GRADE 5 LEARNING PACK

Algebra: Rules, Expressions & Equations

Represent patterns and unknown quantities using rules, letter-symbols, expressions and simple equations.

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

Represent patterns and unknown quantities using rules, letter-symbols, expressions and simple equations.

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 A letter can represent an unknown or varying quantity.

2 An equation states that two expressions have equal value.

3 A general rule describes a relationship that works beyond the first few examples.

Talk about it

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

Describe the nth-like rule informally for a growing tile pattern.

Translate “three more than n ” into an expression.

Solve $x + 17 = 43$ using inverse reasoning.

Find missing values that make two sides equal.

Test whether a proposed rule works for several terms and explain.

Try it beyond the page

Real-world / hands-on connection

Create a growing object or drawn pattern, record the first five stages and state a rule another learner can test.

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 an equation puzzle with an unknown, a visual model and a written explanation.

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

CHALLENGE

Think deeper

1. What does the equals sign mean?

2. If $x + 9 = 21$, what is x ?

3. Why test a pattern rule on more than one term?

Quick review

1. In one sentence, explain the big idea of “Algebra: Rules, Expressions & Equations”.

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

Both sides have the same value.

2. Suggested response

12.

3. Suggested response

To check that the rule describes the relationship consistently.

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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