GRADE 5 LEARNING PACK

Data, Probability & Sample Space

Design data questions, interpret displays critically and represent simple probability using fractions, decimals or percentages.

LEARN • PRACTISE • CREATE • REFLECT

Original BrightPencil Kids resource - adult-led where appropriate

A4 edition • 12 purposeful pages • review copy

Print. Learn. Grow.

FOR PARENTS & TEACHERS

Grown-up guide

Learning objective

Design data questions, interpret displays critically and represent simple probability using fractions, decimals or percentages.

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.

STUDY

Learn the idea

1 **A sample space lists all possible outcomes in a defined experiment.**

2 **Experimental probability can differ from theoretical probability, especially with few trials.**

3 **Graphs can mislead when scales, categories or samples are poorly chosen.**

Talk about it

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

PRACTISE

Guided practice

Challenge 1

List the sample space for one die roll and two coin outcomes.

Challenge 2

Express simple probabilities as fractions and decimals.

PRACTISE

Build the skill

Challenge 3

Predict then interpret 50 simulated trials provided in a table.

Challenge 4

Identify a misleading truncated graph scale.

PRACTISE

Independent thinking

Challenge 5

Compare two samples and explain why conclusions may differ.

APPLY

Try it beyond the page

Real-world / hands-on connection

Run a safe coin/dice experiment with an adult or use paper outcome cards; record predictions, trials and comparison.

Before you finish

What did you notice?

What evidence, object or example helped you?

What would you change if you tried again?

CREATE

Create something

Your project

Create a probability investigation poster with sample space, prediction, data display and cautious conclusion.

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

CHALLENGE

Think deeper

1. What is the probability of rolling a 6 on a fair six-sided die?

2. Must experimental probability equal theoretical probability exactly?

3. Why can a graph scale matter?

REVIEW

Quick review

1. **In one sentence, explain the big idea of “Data, Probability & Sample Space”.**

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.**

FOR GROWN-UPS

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

1/6.

2. Suggested response

No.

3. Suggested response

It can change how large differences appear visually.

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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