

GRADE 4 LEARNING PACK

Digital Systems: Input, Process, Output & Data

Model simple digital systems and understand why data quality, privacy and purpose matter.

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

Model simple digital systems and understand why data quality, privacy and purpose matter.

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 Many systems can be described as input - process - output.

2 Data quality affects the usefulness of results.

3 Personal information should be collected only when there is a clear, safe purpose.

Talk about it

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

Model a calculator, traffic light and library search as input-process-output.

Identify a missing or incorrect data problem.

Compare anonymous class totals with named individual records.

Explain why collecting extra personal data “just in case” is poor practice.

Design a simple non-personal data flow for a weather station.

Try it beyond the page

Real-world / hands-on connection

Identify one everyday system with an adult and describe input, process and output without entering private information.

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 diagram for a fictional school recycling counter that stores totals but no child names.

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

CHALLENGE

Think deeper

1. What can poor input data cause?

2. Why minimise personal data?

3. What is an output?

Quick review

1. In one sentence, explain the big idea of “Digital Systems: Input, Process, Output & Data”.

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

Unreliable or misleading results.

2. Suggested response

To reduce unnecessary privacy risk.

3. Suggested response

The result or action produced by a system.

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.

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:
