



GRADE 4 · AGES 9–10

# Look *closely*, compare fairly, make something that works.

Project-Based Learning Designs: eight projects a year, each ending in something the child has made, tested and explained.

8

PROJECTS A YEAR  
two per school term

20

SESSIONS PER PROJECT  
four weeks, five sessions a week

7 of 8

END IN A PHYSICAL  
BUILD  
models, devices, instruments

1

COMPLETE LITERARY  
PROJECT  
narrative and original writing

## WHAT GRADE 4 IS

### A year of things made and tested

Grade 4 is where project work begins. A child observes, measures and records, then builds something to test the idea: a tabletop museum of their own place, a shelter for an animal, a bottle turned into a measuring tool, a Moon-phase model, a growing tray with a fair test, a game with rules another person can follow. Maths, reading, writing, science and humanities are taught **inside the project that needs them**, with no standalone subject courses. PPL is an add-on that sits beside school and does not replace it.

## THIS YEAR'S EMPHASIS

SCIENCE  
ENQUIRY

One fair comparison

MAPS

Read a plan and a key

WRITING

Captions and instructions

MAKING

Display models and simple devices

## HOW EVERY PROJECT IS BUILT

### Observe

5 SESSIONS

The driving question and the thing to make. A “before you start” check. Two mini-lessons: the science or humanities idea, then the maths the project uses. The reading. The log begins.

### Explore

5 SESSIONS

Two investigations: collect evidence, then change one thing and record fairly. Organise it. Draft the writing. Plan the build with criteria.

### Build

10 SESSIONS

Build, test against the criteria, revise from the evidence, retest and finish. Rehearse, present to a family audience, complete the family record, and reflect on what changed and why.

Five sessions a week, designed around 30–40 minutes each. This is a planning figure, to be confirmed in pilot.

## EVERY PROJECT DELIVERS

- **Something made**, a model, device, instrument, kit, publication, performance or map.
- **A real piece of writing**, such as a caption, instruction, report, recommendation or story.
- **A spoken presentation** to a family audience, with one question to answer.
- **A family record** in four domains. No tests, marks or rankings.

## BUILT FOR ANY FAMILY, ANYWHERE

- **Your place is the subject**; South Africa is always the comparison.
- **Household or hardware-shop materials** available worldwide. No branded kits, no live animals.
- **Both hemispheres**: sky, season, shadow and weather tasks carry northern and southern versions.
- **A paper route and an online route** for every project.

GRADE 4 · AGES 9–10

WHAT IS MADE

SCIENCE STRAND

GEOGRAPHY, HISTORY OR ECONOMICS

# Eight projects, eight driving questions

Each project is four weeks and 20 sessions. It starts with one driving question and ends with something the child has made, tested and explained. Every project also teaches the maths it genuinely uses, a reading, a real piece of writing and a spoken presentation.

## My place, then and now 1

*What can evidence tell us about how our place has changed?*

### THE CHILD MAKES

A tabletop 'then and now' museum: a folding display box with at least three labelled evidence pieces, a timeline strip and a short written explanation.

DISPLAY MODEL

LIFE

GEOGRAPHY &amp; HISTORY

## A shelter that fits 2

*How can we build a shelter that meets an animal's needs?*

### THE CHILD MAKES

A tested model shelter for a chosen animal, with a plan drawing and a written test record.

MODEL SHELTER

LIFE

GEOGRAPHY

## How much water? A measuring tool you made 3

*How much water do everyday tasks really use, and how can we show people clearly?*

### THE CHILD MAKES

A calibrated measuring container made from a bottle, a data table of household water use, and a tested one-page water guide.

MEASURING TOOL

MATTER

GEOGRAPHY

## Our story book 4

*How can we write a story that makes a reader want to keep reading?*

### THE CHILD MAKES

An illustrated, hand-bound story book (one extended story or a small collection) with a short author's note.

HAND-BOUND BOOK

HISTORY

## A signal you can explain 5

*How can a simple sound signal carry a clear message without being loud?*

### THE CHILD MAKES

A sound-making device (shaker, string box or tube drum) with a coded signal, plus a how-it-works explanation.

WORKING DEVICE

ENERGY

HISTORY

## Moon watch 6

*What can our own observations and a model tell us about the Moon?*

### THE CHILD MAKES

A Moon-phase model (lamp-and-ball or a box viewer) and a dated observation log with a written explanation.

MODEL + LOG

EARTH &amp; SPACE

HISTORY

## A garden in a box 7

*What do plants need, and how can we prove it?*

### THE CHILD MAKES

A growing tray with a controlled experiment (light, water or soil as the one variable), a growth record and a results poster.

LIVING EXPERIMENT

LIFE

GEOGRAPHY

## A game with fair rules 8

*How do we design a game that is fair, fun and clear enough for someone else to play?*

### THE CHILD MAKES

A board or card game with a tested rules booklet.

GAME + RULES

HISTORY

**Sequence.** Any order suits the family's calendar. **A garden in a box** (Project 7) needs three weeks of records, so start it in a week the family will be at home. The literary project, **Our story book**, sits best in Term 2 or 3, after the child has read two projects' worth of texts.

## THE SCAFFOLDING

# The same 20-session spine, every project

Every session has one job. Each project follows the same shape, so a child always knows where they are and what comes next, while the content changes completely.

|        |                                                              |                                                              |                                                                  |                                                       |                                                          |
|--------|--------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|
| WEEK 1 | <b>1</b><br>Hook: the driving question and the thing to make | <b>2</b><br>Mini-lesson 1: the science or humanities idea    | <b>3</b><br>Mini-lesson 2: the maths the project uses            | <b>4</b><br>First observation; the project log begins | <b>5</b><br>Reading session and a short written response |
| WEEK 2 | <b>6</b><br>Investigation 1: collect first evidence          | <b>7</b><br>Investigation 2: change one thing, record fairly | <b>8</b><br>Organise the evidence: table, graph, timeline or map | <b>9</b><br>Writing session: first draft              | <b>10</b><br>Plan the build; a parent check-in           |
| WEEK 3 | <b>11</b><br>Build session 1                                 | <b>12</b><br>Build session 2                                 | <b>13</b><br>First test against the criteria                     | <b>14</b><br>Revise the build from the evidence       | <b>15</b><br>Second test; compare with the first         |
| WEEK 4 | <b>16</b><br>Revise the writing; add the evidence            | <b>17</b><br>Finish the made object                          | <b>18</b><br>Rehearse the presentation                           | <b>19</b><br>Present to a family audience             | <b>20</b><br>Reflect: what changed, why, what next       |

Observe
Explore
Build

A short fluency slot keeps number facts and spelling patterns warm inside sessions. Nothing is homework on top.

## Teach, then apply

Every idea comes with a worked example before the child uses it. A ten-minute “before you start” check covers the one skill the project needs, and the maths is taught before the build calls for it.

## Evidence before claims

Every claim must stay within the evidence the child collected. Each project names the evidence that must exist before it is finished, and adult help is recorded.

## Test, revise, retest

Criteria are set before building. The child tests, revises from the evidence, tests again and compares the two results. Improving the work is the ordinary process.

## A real audience

Every project ends with a presentation to a family audience, one question to answer, and a reflection: what changed, why, and what to ask next.

## ONE PROJECT OPENED UP · GRADE 4, PROJECT 7

## A garden in a box

*What do plants need, and how can we prove it?*

|                       |                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EVIDENCE REQUIRED     | A fair test with one variable changed; measurements every two or three days for three weeks; a bar or line graph; a conclusion that stays within the evidence. |
| MATHS INSIDE          | Measuring length in mm and cm; tables; bar graphs; days and dates.                                                                                             |
| SCIENCE INSIDE        | What plants need; plant structures; seed to plant; fair testing.                                                                                               |
| GEOGRAPHY / HISTORY   | Food and farming: where food is grown; a supplied South African farm case and the child's local food source.                                                   |
| READING AND WRITING   | A growing procedure; a short farming information text. A method; a results report with a conclusion.                                                           |
| DIGITAL THREAD        | Record data honestly; never change a result to fit a prediction.                                                                                               |
| ANYWHERE IN THE WORLD | Seeds are available everywhere; in cold months grow indoors on a windowsill.                                                                                   |
| SAFETY                | Wash hands after handling soil; do not eat experimental plants.                                                                                                |

## WHAT IS INSIDE, AND WHAT IS NOT

# What Grade 4 teaches, and what it leaves to school

| SUBJECT                      | TAUGHT INSIDE THE EIGHT PROJECTS                                                                                                                                                       | LEFT TO SCHOOL                                                                                                                                                   |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mathematics</b>           | Place value to 4 digits; number lines and dates; operations in context; halves and quarters; length, capacity, time; 2D/3D shapes; tallies and bar graphs; chance; patterns; symmetry. | Formal written methods and fluency practice; mass in depth; the full fraction programme; money drills; viewing objects; most of the CAPS problem-type inventory. |
| <b>Science</b>               | Living things and habitats; what plants need; material properties; energy and sound; Earth, Sun and Moon.                                                                              | Skeletons; strengthening materials and frame structures; rocket systems.                                                                                         |
| <b>Geography and history</b> | Local history from evidence; map skills; food and farming; water; communication through time; leaders (reading only).                                                                  | Transport through time; learning from leaders as a full unit.                                                                                                    |
| <b>English</b>               | One complete narrative plus poems and folktales; captions, explanations, instructions, a story; read-alouds and demonstrations.                                                        | Standalone grammar and spelling sequences; the full text-type inventory; formal comprehension tests.                                                             |

## Where it comes from

**CAPS-rooted.** Every project names the CAPS topics it draws on across English Home Language, Mathematics, Natural Sciences and Technology, and Social Sciences. PPL is CAPS-rooted; it is not a CAPS-coverage programme, which is why the table above lists what stays with school.

**Globally influenced.** Nine contributions from five education jurisdictions shape the method. They are selected influences, not adopted curricula, and no source organisation endorses PPL.

## How it was built

- Source research: 31 CAPS and Department of Basic Education documents for Grades 4–7, plus official documents from five jurisdictions, each recorded and fingerprinted.
- Four grade frameworks were drafted, then put through two independent critical reviews of workload, progression, English planning and scientific accuracy.
- Unsupported time claims were withdrawn, and the frameworks were rebuilt as an add-on where every project ends in something made.

## Selected international influences

|                         |                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------|
| <b>England</b>          | Literary breadth; maths reasoning; working scientifically; interpreting historical sources |
| <b>Australia</b>        | Algorithms, data checking and privacy; design criteria and the consequences of choices     |
| <b>Sweden</b>           | Systems and the consequences of technological choices                                      |
| <b>British Columbia</b> | Understand a need, prototype, test and use feedback                                        |
| <b>Scotland</b>         | Resource use and sustainable technology decisions                                          |

## The family record

Once per project the parent or older learner completes a short checklist in four domains (understanding, making and testing, communicating, reflection and revision) at four levels: needs support, developing, secure, extending. “Secure” means the child showed the idea independently and explained it in their own words. Adult help is never awarded to the child.

## WHERE GRADE 4 SITS IN THE FOUR-YEAR PROGRESSION

|                        | GRADE 4                           | GRADE 5                                        | GRADE 6                                          | GRADE 7                                                |
|------------------------|-----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------|
| <b>SCIENCE ENQUIRY</b> | One fair comparison               | Consistent measurement and a short data record | Repeated trials, means and controlled comparison | Anomalies, uncertainty and trade-offs                  |
| <b>MAPS</b>            | Read a plan and a key             | Make a scale map with a grid                   | World maps, scale and grid references            | A data-based route or site decision                    |
| <b>WRITING</b>         | Captions and instructions         | Guides, bulletins and reports                  | Explanations, recommendations and recipes        | Technical briefs, proposals, arguments and lab reports |
| <b>MAKING</b>          | Display models and simple devices | Living models, instruments and a first circuit | Tested systems and a cooked outcome              | Calibrated instruments, structures and a chemistry kit |

**Circuits:** one complete low-voltage circuit for a purpose (Grade 5), then multiple switched circuits, conductors and mains safety as knowledge (Grade 6). No other circuit project repeats.

Figures describe the programme design, not measured learner outcomes. Session length is a planning figure. PPL is an independent studio and an add-on to school: it does not replace school and makes no claim of full CAPS coverage.