



GRADE 5 · AGES 10–11

Measure *carefully*, record honestly, build instruments that work.

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

6 of 8

END IN A PHYSICAL
BUILD
models, devices, instruments

1

COMPLETE LITERARY
PROJECT
narrative and original writing

WHAT GRADE 5 IS

A year of things made and tested

In Grade 5, observation turns into measurement. A child keeps a four-week record of a terrarium, tests a river model with water, builds a rain gauge and wind vane, wires a first working circuit, times a marble run over repeated trials, and makes a scale map that another person must use to find their way.

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

Consistent measurement and
a short data record

MAPS

Make a scale map with a grid

WRITING

Guides, bulletins and reports

MAKING

Living models, instruments
and a first circuit

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.

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.

A world in a jar

1

How does a place shape the living things found there?

THE CHILD MAKES

A terrarium (sealed or open) with a four-week observation log, plus an atlas page for one real habitat.

LIVING MODEL

LIFE

GEOGRAPHY & HISTORY

A river and its people

2

How does a river shape people's choices, then and now?

THE CHILD MAKES

A 3D river model from source to sea, tested with water, plus a short illustrated guide comparing two river societies.

LANDFORM MODEL

EARTH & SPACE

GEOGRAPHY & HISTORY

Weather station

3

What can our weather record show, and what can it not?

THE CHILD MAKES

A home-made rain gauge and wind vane, a three-week weather record and a weather bulletin (written or recorded).

WORKING INSTRUMENTS

EARTH & SPACE

GEOGRAPHY

Voices on the page

4

How can dialogue and narration bring a character to life?

THE CHILD MAKES

An original scene or short story, performed as a recorded mini radio play or read-aloud, with an illustrated script booklet.

PERFORMANCE + BOOKLET

HISTORY

Energy into useful action

5

How can stored energy make something useful happen?

THE CHILD MAKES

A working low-voltage device (light, buzzer or small motor) with a switch, built for a purpose the child chooses, such as a reading light or a door alert.

WORKING DEVICE

ENERGY

GEOGRAPHY

Reading the ground

6

What can rocks, layers and fossils tell us about a place's past?

THE CHILD MAKES

A sediment-layer model in a bottle and a cast 'fossil', displayed as a labelled evidence trail.

MODELS + DISPLAY

EARTH & SPACE

HISTORY

A marble run with a mission

7

How can we control the way energy moves through a system?

THE CHILD MAKES

A marble run that completes a set task (rings a bell or drops the marble into a cup) with measured, repeatable results.

WORKING SYSTEM

ENERGY

A map that works

8

How do we make a map someone else can use to find their way?

THE CHILD MAKES

A scale map of the home, street or park with a grid, key and compass rose, plus a route challenge tested by another person.

SCALE MAP

GEOGRAPHY

Sequence. Two order rules: **Energy into useful action** (Project 5) comes before Grade 6's lighting project, and **A map that works** (Project 8) comes before Grade 7's map decision. **A world in a jar** and **Weather station** need three to four weeks of observation, so start them in a week the family will be at home.

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

Weather station

What can our weather record show, and what can it not?

EVIDENCE REQUIRED	Instruments checked for consistency; daily records; a suitable graph; a clear weather-versus-climate statement; a conclusion that says what a short record cannot show.
MATHS INSIDE	Reading scales; decimals to tenths in mm; data collection and graphs; the typical value of a set (informal average).
SCIENCE INSIDE	Energy from the Sun; measuring weather; weather versus climate.
GEOGRAPHY / HISTORY	South African climate and vegetation regions compared with the child’s own region.
READING AND WRITING	A weather report; a climate graph. A weather bulletin; a spoken forecast.
DIGITAL THREAD	Input, variable and decision in a simple weather program, on paper or in Scratch.
ANYWHERE IN THE WORLD	Seasons are opposite in the two hemispheres; the child reports their own season; comparison data from both hemispheres is supplied.
SAFETY	None beyond scissors.

WHAT IS INSIDE, AND WHAT IS NOT

What Grade 5 teaches, and what it leaves to school

SUBJECT	TAUGHT INSIDE THE EIGHT PROJECTS	LEFT TO SCHOOL
Mathematics	Place value to millions; division and sharing; fractions and equivalence; decimals to tenths (introduced); scale and unit conversion; time to tenths of a second; data and graphs; informal average; grids and position; angles as turns.	Formal long multiplication and division practice; numeric pattern rules in depth; transformations; 3D nets in depth.
Science	Habitats, food chains, life cycles; the first electric circuit; stored and movement energy; weather and the Sun; sedimentary rock and fossils; erosion observed.	Metals and non-metals; processing materials; skeletons; the structure of planet Earth.
Geography and history	Map skills; rivers and physical features; weather, climate and vegetation; minerals and mining (reading); Ancient Egypt as comparison; heritage; hunter-gatherers (short).	First farmers; Ancient Egypt in depth.
English	One complete narrative, poems, a play script; atlas entries, guides, bulletins, reports, dialogue; a performance.	Standalone grammar and spelling sequences; 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

England	Literary breadth; maths reasoning; working scientifically; interpreting historical sources
Australia	Algorithms, data checking and privacy; design criteria and the consequences of choices
Sweden	Systems and the consequences of technological choices
British Columbia	Understand a need, prototype, test and use feedback
Scotland	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 5 SITS IN THE FOUR-YEAR PROGRESSION

	GRADE 4	GRADE 5	GRADE 6	GRADE 7
SCIENCE ENQUIRY	One fair comparison	Consistent measurement and a short data record	Repeated trials, means and controlled comparison	Anomalies, uncertainty and trade-offs
MAPS	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
WRITING	Captions and instructions	Guides, bulletins and reports	Explanations, recommendations and recipes	Technical briefs, proposals, arguments and lab reports
MAKING	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.