

LEGO & Building unit study

A homeschool curriculum built on LEGO — engineering, math, storytelling and design thinking through building, for K-12 learners.

GRADE BANDS K-2 · 3-5 · 6-8 · 9-12

FULL GUIDE <https://handsdowneducation.com/homeschool/lego>

How to use this planner

The six weeks below are sequenced from the guide's sample week: five weeks that each take one core subject through the topic, then a showcase week that turns the portfolio into a final product. Run each activity at the level your child is at (the grade band notes tell you how), keep the output, and by week six you have a portfolio that shows the unit end to end.

Pace is yours. A week here is three to five working sessions; a topic that is going well can take two calendar weeks, and one that has run dry can be closed early. Tick the box when a week's output is in the portfolio.

Six-week scope and sequence

Wk	Focus	Key activity	Portfolio output	Done
1	Reading & Writing through lego & building	Build a scene from the current read-aloud, then write the missing chapter that scene implies — set design as reading comprehension.	Portfolio entry: the week's reading & writing piece, dated, with one line from your child on what they found out.	☐
2	Math through lego & building	Count studs to calculate area and volume of a build; then double every dimension and discover the volume grows eightfold — the square-cube law in plastic.	Portfolio entry: the week's math piece, dated, with one line from your child on what they found out.	☐
3	Science through lego & building	Build three bridge designs (beam, arch, truss) spanning the same gap and load each to failure with coins, recording collapse weights.	Portfolio entry: the week's science piece, dated, with one line from your child on what they found out.	☐
4	Social Studies through lego & building	Reconstruct a studied historical setting — a medieval village, a port, a pyramid site — and give a recorded tour explaining daily life in each structure.	Portfolio entry: the week's social studies piece, dated, with one line from your child on what they found out.	☐
5	Art through lego & building	Sculpt something organic (an animal, a face) from rectangular bricks — the constraint is the art lesson, exactly as it is in mosaic.	Portfolio entry: the week's art piece, dated, with one line from your child on what they found out.	☐
6	Showcase and review	Choose one final product that pulls the unit together — a presentation, an exhibit, a field guide or a short documentary — and give the week to making it. Finish with a portfolio review: lay every week's output on the table and let your child narrate what changed in what they know about lego & building.	The final product plus a one-page unit summary in your child's words, filed with the portfolio.	☐

Running it at your child's level

K-2 learners sort by color and shape, follow visual instructions (pre-reading sequencing), count in bricks and build symmetry — foundational math with zero worksheets.

Older builders take on Technic mechanisms (gears, ratios, linkages), stop-motion filmmaking with real production planning, and original engineering challenges built to written specs.

A sample week, subject by subject

Reading & Writing

Build a scene from the current read-aloud, then write the missing chapter that scene implies — set design as reading comprehension.

Math

Count studs to calculate area and volume of a build; then double every dimension and discover the volume grows eightfold — the square-cube law in plastic.

Science

Build three bridge designs (beam, arch, truss) spanning the same gap and load each to failure with coins, recording collapse weights.

Social Studies

Reconstruct a studied historical setting — a medieval village, a port, a pyramid site — and give a recorded tour explaining daily life in each structure.

Art

Sculpt something organic (an animal, a face) from rectangular bricks — the constraint is the art lesson, exactly as it is in mosaic.

Common questions

Is LEGO learning or just playing?

Both, on a dial you control. Free play builds spatial intuition on its own; add a constraint and a deliverable, and the same bricks are a genuine engineering assignment.

Do we need the expensive robotics sets?

No. A generic brick tub carries years of math, engineering and storytelling. Technic adds mechanisms; robotics adds programming — worthwhile upgrades, never prerequisites.

How does building teach writing?

Builds generate narrative naturally — who lives here, what went wrong, what happens next. Instructions, tour scripts, and story chapters all flow out of what's on the table.

Turn this into a full, standards-aligned curriculum

Generate a complete plan around lego & building for your child's grade and pace — free to try, no account required.
<https://handsdowneducation.com/curriculum/generate>