A SPARKATLAS PACK FOR LITTLE BUILDERS

Build and Make

Stack it, knock it down, build it again: towers, patterns, a stick-and-stone plan and real builders from nature.



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YOU WILL NEED

- Blocks, boxes, lids or cups to stack
- Sticks, stones and pinecones from outside
- Crayons or pencils

TIME

10 to 20 minutes a page. Building can go on all day.

Our build log

Date _____ We built at _____

Weather · Circle one

◯ sunny ◯ cloudy ◯ rainy ◯ windy

AGES Sprout 2–3 Seedling 3–5 Sapling 5–7

Every page has an easier and a stretch idea.

WHY THIS MATTERS

Children who knock towers down are doing real science: they test, watch what happens and try again. Every page starts with something your child loves to build and ends with their own ideas.

Before You Start

A one-minute read for grown-ups.

How to use it (one page a day is plenty)

1. **Gather a building basket.**
Blocks or boxes from home, and sticks, stones and pinecones from a walk.

2. **Let them knock it down.**
Crashing is part of the science. Ask "What happened?" before building again.

3. **Guess, then test.**
Ask how tall it will get or what will happen. Every guess is a good start.

4. **Draw it afterwards.**
Page 7 turns a build into a record, and talking about it builds new words.

Three ways to play

Sprout 2–3

Stack and knock down, copy a two-block pattern with real blocks, and point to the animal builders.

Seedling 3–5

Guess and count, continue the patterns, gather things for a plan and draw the build.

Sapling 5–7

Change one thing at a time, invent patterns, draw a plan to build from and write about it.

Little safety notes

Small stones are a choking risk for under-threes: choose big ones and stay close. Build towers away from little toes. Look at bird and wasp nests, but never touch them. Put lifted stones and logs back gently: they may be someone's home.

Printing tips

Page 1 is the cover. To save ink, print pages 2 to 7 only. Every page works in black and white, because the pattern marks are dots and stripes. Letter or A4.

Wonder out loud together

- What will happen if we take this block out?
- What could we build for a beetle?
- Why do you think it fell?
- How does a bird build with no hands?

FOR GROWN-UPS

Little builders often make the same tower again and again. That's practice, not being stuck. Wait before helping, and ask "What could you try?"

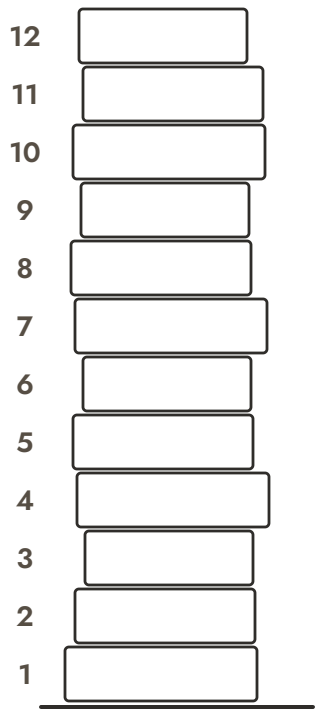
How Tall Before It Tumbles?

Guess how many blocks you can stack, then test it three times.

Guess first. Stack and count, then colour your best tower on the left.

Count the blocks

Colour one block for each block in your tallest tower.



Three tries

Write or draw your guess. Then build until it tumbles, and count.

	I think	It stood	Than my guess
Try 1	○	○	↑ more · = same · ↓ fewer
Try 2	○	○	↑ more · = same · ↓ fewer
Try 3	○	○	↑ more · = same · ↓ fewer

Change one thing, then try again:

- ☐ Big blocks at the bottom
- ☐ A wider base
- ☐ Build slowly, with one hand

Builder's tip

A wide, heavy base keeps a tower steady. Builders put big pieces low and smaller pieces higher up, so the tower doesn't tip.

Talk about it

- Why do you think it fell?
- Which try was the tallest?
- What will you change next time?

FOR GROWN-UPS

Guessing, testing and counting is how scientists work. Changing just one thing at a time helps your child see what really made the difference.

PLAY IT YOUR WAY

Easier: Stack big blocks or boxes together and count out loud. Knocking down is allowed!

Stretch: Use stones or cups instead of blocks. Which is hardest to stack, and why?

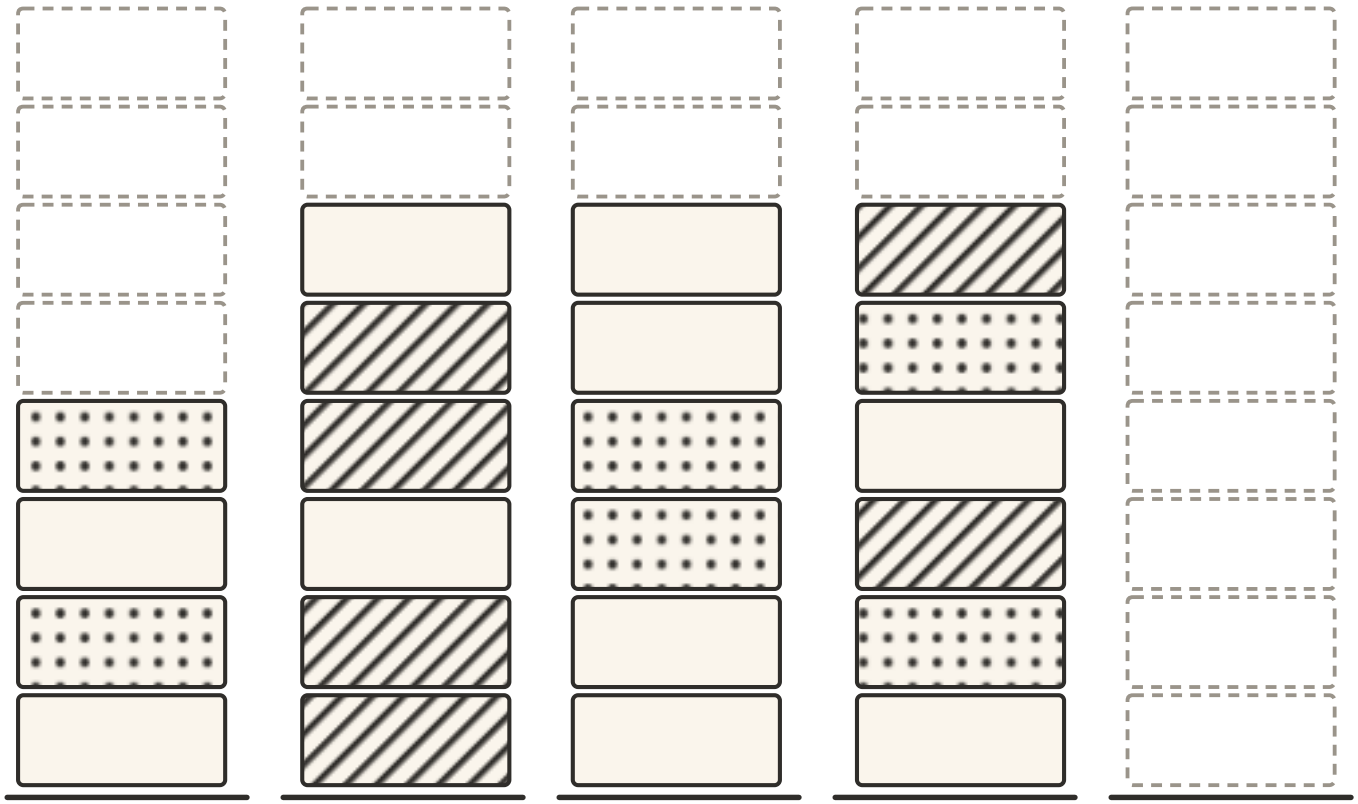
Pattern Towers

Plain, dots, stripes: what comes next on each tower?

Colour the dashed blocks to finish each tower. Then build them with real blocks.

Finish the towers

Say each pattern out loud, colour the dashed blocks, then invent your own on tower 5.



3

Pattern code

Plain	My crayon	
Dots	My crayon	
Stripes	My crayon	

Build it for real

- Build tower 1 with two kinds of block.
- Try a big, small, big, small tower.
- Make a pattern with stones and sticks.

FOR GROWN-UPS

Spotting and continuing patterns is an early maths skill that helps with counting, number patterns and, later, reading. Building the pattern with real blocks makes it something to touch.

PLAY IT YOUR WAY

Easier: Build a big, small, big, small tower together and let your child add the next block.
Stretch: Invent a pattern on tower 5, then ask a grown-up to guess the rule.

Stick-and-Stone Building Plan

Plan it, gather it, build it, then compare it with your plan.

Work through the four steps. Build outside, or bring your finds home.

1 Plan: draw what you will build

A house, a bridge, a tower, a home for a beetle: anything you like.

2 Gather

Tick what you found and write how many.

- ☐ Sticks _____
- ☐ Stones _____
- ☐ Pinecones _____
- ☐ Leaves _____
- ☐ Boxes or lids _____
- ☐ Something else _____

3 Build

Build it, then check:

- ☐ It stands up on its own
- ☐ It has a door or a way in
- ☐ A pinecone or small toy fits inside

4 Compare it with your plan

=	≈	≠
the same	a bit different	very different

What changed, and why?

_____

_____

FOR GROWN-UPS

Planning before building is how engineers and architects start. Comparing the build with the plan shows your child that changing a plan is part of building, not a mistake.

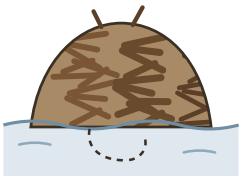
PLAY IT YOUR WAY

Easier: Skip the plan: gather sticks and stones together, then build and talk about it.
Stretch: Add sizes to the plan ("three sticks long"), then measure the build with your hands.

Builders in Nature

Animals build amazing homes with no hammers, nails or tape.

Read about one builder a day. Then try its trick with your own hands.



Beaver

STICKS AND MUD

A beaver lodge is a dome of sticks and mud with its doors under the water. In freezing weather, the mud plaster turns hard like concrete.

✦ Try it: Pile sticks into a dome. Can you leave a door?

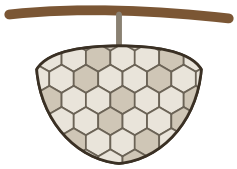


American robin

GRASS, TWIGS AND MUD

A robin builds its nest from the inside: it presses grass and twigs into a cup with its wing, adds mud, then lines it with soft, dry grass.

✦ Try it: Press grass or wool into a cup in your hands.

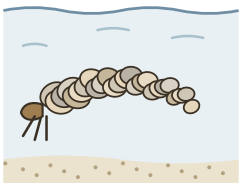


Paper wasp

CHEWED WOOD

Paper wasps make real paper. They scrape wood from old fences, chew it, and build a nest of six-sided rooms that hangs from one stalk.

✦ Try it: Draw a row of six-sided rooms. Count the sides!



Caddisfly larva

SAND, STONES AND SILK

Many young caddisflies live underwater in a tube they build themselves, gluing sand, tiny stones or bits of plant together with their own silk.

✦ Try it: Press tiny stones into play dough to make a case.

✦ Builders' hunt: look, don't touch

- ☐ A nest in a bare tree
- ☐ A spider web
- ☐ An anthill
- ☐ A hole in a tree
- ☐ A pile of sticks

FOR GROWN-UPS

Animal homes show children that building solves real problems: staying warm, dry and safe. When the leaves are down, old nests are easy to spot, so look up on your walk.

PLAY IT YOUR WAY

Easier: Look at the pictures together and name each builder. Then pile sticks into a beaver lodge.
Stretch: Which builders use mud? Which one makes its own silk? Sort the builders by what they use.

Draw What You Built

An engineer's journal page for your best build.

Draw your build, give it a name and tell how you made it.

My build

Draw it from the front, or from the top!

It is called _____

I used

- [ ] Blocks
- [ ] Sticks
- [ ] Stones
- [ ] Boxes
- [ ] Pinecones
- [ ] Other

How tall was it?

_____ **blocks**

_____ **hands**

The tricky part was

_____

_____

Next time I will

_____

_____

Talk about it

- What was your favourite part to build?
- Where did it wobble?
- Who could live in it?

FOR GROWN-UPS

Drawing a build afterwards helps your child remember, explain and plan. You can write their words for them: the ideas matter more than the spelling.

PLAY IT YOUR WAY

Easier: Your child scribbles the build while you write down what they say about it.

Stretch: Draw it twice, from the front and from the top. Which view was harder?