

Paper cities

Shapes and patterns from nature, folded into 3D paper buildings.

Craft

Type

10–15 min

Duration
typical. Nobody is moved on

7

Paper techniques

4

Core materials

What it is

The activity

Flat paper folded, cut and curled into small 3D buildings. Seven techniques turn a flat strip into a form that stands up.

Buildings go on a shared base, so the city at 17:30 is not the city at 10:00.

Theme

Biomimicry. Nature has already solved the structural problem and a designer borrows it. A child finds a shape in nature and builds with it.

Space. Here the city is a lunar base.

Explore

Geometry a child can pick up and look at:

- circles in a sliced onion
- hexagons in honeycomb
- triangles in a leaf
- spirals in a snail shell

The printed patterns are there when there is no real nature.

Device magnifier

The other activity on this station. A lens held on one of our phone cameras with Blu Tack. A leaf becomes a landscape, and the shape comes from there.

[How it runs](#)

YOU CAN SAY

Look closely. What shapes can you find?

YOU CAN SAY

Is it any of these?

- round
- six-sided
- pointed
- spiralling
- ribbed
- branching

Make

EXAMPLES

Two example boards, built and pinned up. Check both before the doors open and rebuild only what is damaged. Click a photograph to enlarge it.



Paper techniques. Curls, fringe, quilling, shapes, pleats and tubes.



Folds and spirals. Scored strips, two spirals, three pleated forms.

Printed examples

On the table, beside the board.

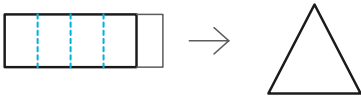
A4

Models

Finished buildings on the table, made in the seven techniques, for a child to pick up and turn over.

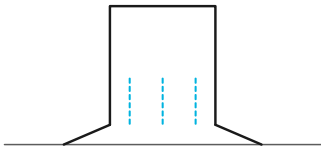
TECHNIQUES

Try them before building anything.



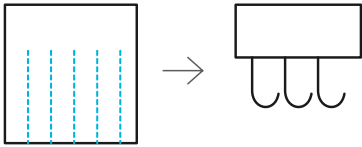
Shapes

Fold a strip. Three folds a triangle, four a square, five a pentagon. Glue the tab inside.



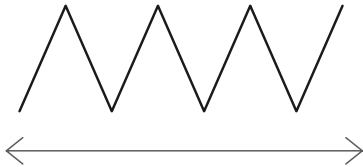
Feet

Snip slits along the bottom and glue them flat to a base. Flat becomes upright.



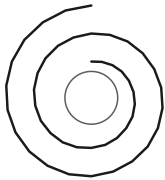
Fringe

Lots of small snips two-thirds down a strip. Curl them round a pencil for grass or hair.



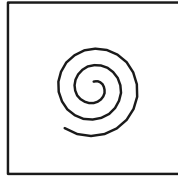
Pleats

Fold a strip back and forth like a fan. Stretched out it becomes stairs, a bridge, a flower.



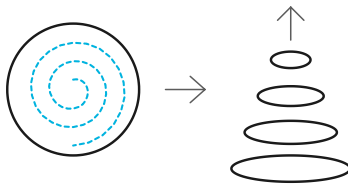
Curls

Wrap a strip tightly round a pencil, release it, fold and glue the end. Towers, domes, spiral stairs.



Quilling

Make a shape from a strip, a circle, a square or a heart, then roll a second strip tightly and slot it inside.



Spirals

Cut round and round inside a shape towards the middle, then pull the middle up and stick each end.

STEPS

- 1 **Pick a shape from nature.** A snail shell, a leaf, a honeycomb.
- 2 **Decide what the building is for.** A school, a shop, a library, a home.
- 3 **Make it,** using one technique or two.
- 4 **Give it feet and stand it on the lunar base.** That is the city.
- 5 **Keep going.** Another building, a street, doors, windows, signs, tiny paper people.

YOU CAN SAY

What is your building for? Who is it on the moon for?

- somewhere to sleep
- somewhere to grow food
- a school
- a shop
- a library
- somewhere to look at the stars

YOU CAN SAY

Leave it on the base and it becomes part of our city. Or take it home. It is yours either way.

A finished building at step 4, at about ten minutes. Step 5 is where an hour goes, for a child who wants one.

ON THE DAY

Tinker beyond paper

Egg cartons for beehive walls. Half a plastic bottle for a dome. Bubble wrap round a tube for a textured wall.

Tips

A building that falls down needs a bigger base or thicker tape. Say it before it happens.

Kit

A pencil, and glue or tape. Fringe, curls and spirals all wrap paper round a pencil.

Setup

MATERIALS

Core

- coloured paper
- coloured card
- tape
- scissors

Optional

- white paper
- pencils
- glue stick
- base to build on
- egg cartons
- cardboard tubes

Print

- printed examples

Made in advance

- example board

SETUP

RESET BETWEEN CHILDREN

Offcuts cleared, scissors back in the pot, the surface clear enough for the next child.

The lunar base is not cleared. It is the one thing on this table that accumulates.

Safety

Children	Scissors, throughout. Pencils, glue and tape.
Adults	Nothing.
First aid	Cleaning wipes and plasters. The risk is cuts.

At the Science Fair the stall sits beside a staffed tool area and needs none of its tools, so the two should not share a table.

Notes

- The lunar surface the buildings stand on is being made on Friday. It is not on the table yet.

CORE ACTIVITY

Device magnifier

A little lens on a phone camera, and a leaf becomes a landscape.

Tool Type	8 Phones two out, the rest charging in twos	1h 30m Battery roughly, on each phone	Take one Lenses in a kit made up at the table
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What it is

The activity

A small lens on a phone camera, held with Blu Tack. The phone becomes a magnifier.

The phones are ours, and the lens stays on. It is fitted once and left there all day.

Theme

Biomimicry. Looking closely is how a child finds a shape worth building. This ends at the pattern; the paper next door starts from it.

Explore

On the table

Plants, leaves, flowers, rocks and shells. Children look, they do not hunt.

Nature's Patterns and rubbings are there too: paper over a surface, crayon or pastel.

Paper cities

The other activity on this station. The shape a child finds here is what they build there.

[How it runs](#)

YOU CAN SAY

What can you see that you could not see before?

- lines
- ridges
- hairs
- layers
- holes
- repeats

YOU CAN SAY

Could you build that out of paper? Go next door and try.

Make

STEPS

- 1 **Blu Tack around the camera lens**, not over it. A small piece.
- 2 **Press the lens onto it**, centred over the glass. It stays on.
- 3 **Look**. Hold the thing still and move the phone to focus. About 2 cm between the lens and the object is roughly right.
- 4 **The phone comes back**, is wiped, and goes on charge, lens still fitted.

Steps 1 and 2 are done when a phone is set up, and again if a lens comes off. Not between children.

Setup

Power. The phones charge at the table all day, in twos. This station needs a socket, possibly two.

MATERIALS

Items

- lenses
- Blu Tack
- phones
- plastic bags
- wipes
- pastels or crayons

To look at

- nature materials, collected by staff

Print

- *Nature's Patterns*

SETUP

Eight phones, two out at a time. The other six charge in twos. Each holds roughly an hour and a half, so a phone leaving the table is a phone going on charge.

The phones are Samsungs, and the camera opens without having to log in.

A lens fitted to each phone before the doors open. Nature materials out. Lenses and Blu Tack within the facilitator's reach, not loose across the table.

The take-home kit, laid out. A family makes one up themselves from Blu Tack, a plastic bag and a lens. The phone at home is their own.

RESET BETWEEN CHILDREN

The phone comes back to the facilitator and goes on charge with its lens still fitted, and the next pair comes out. **It is wiped as it goes on charge**, so every phone is wiped between the visitor who had it and the next one. Nature materials back where they can be picked up.

Safety

Children	Lenses and Blu Tack. An iOI phone with a lens fitted.
Adults	Nothing.
First aid	_____

A lens is small enough to swallow. They stay with the facilitator, and one a child is keeping goes to the adult with them.

Phones are on charge at the table throughout, in twos, from a socket at the station.

No blade, no heat.

Notes

- The nature materials still have to be collected and brought.
- The *Nature's Patterns* printable still has to be found and printed.
- Confirm a socket at the station, ideally two.