

LEGO cars

LEGO buggies, run down a ramp. Slope, speed and distance.

Build

Type

10 to 15 min

Duration

8

Buggies at once

5

Materials named

What it is

The activity

Children build a LEGO buggy and run it down the ramp. The LEGO is a box of random pieces, plus components sorted into grathnels.

Theme

- **Slope, speed and distance.** The ramp is a fair test.
- **Space.** A buggy for the moon, the same build under the theme.

Explore

Two that change the build

- **Grip.** A tree frog's toe pads became a hexagonal wet-weather tyre tread, and a gecko's foot became a dry gripper.
- **Body shape.** Drag is something a shape can reduce.

Photographs

[The biomimicry research](#) has the images for both.

YOU CAN SAY

What will make it go furthest?

YOU CAN SAY

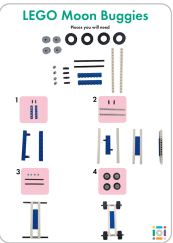
Change one thing and run it again.

- a steeper ramp
- bigger wheels
- heavier or lighter
- a pointier front

Make

EXAMPLES

The build sheet is on the table. Click it to enlarge.



LEGO Moon Buggies build sheet. A4 portrait, colour. Pieces at the top, then four steps.

Example inspiration printout

On the table, beside the build sheet.

The ramp itself

Foldable, and built. A child sees it before anything else.

STEPS

Collect the pieces from the top of the sheet first: four wheels and four tyres, four small grey connectors, four black pins, two blue beams, two black axles and two long cream beams.

1

Two black pins into each blue beam.

2

The blue beams across the two cream beams, making a rectangle. That is the chassis.

3

An axle through each end, with a small grey connector on each side.



- 4 A wheel onto each axle end.** Four wheels, and it rolls.
- 5 Set it at the top of the ramp and let go.** See how far it runs.
- 6 Change one thing and run it again.**
- 7 Break it back into the box.** The LEGO stays with us, so nothing goes home from this station.

Steps 1 to 4 take about five minutes and the buggy rolls. Step 6 is open-ended and that is where the rest of the time goes.

Setup

MATERIALS

Items

- box of random LEGO
- LEGO components in grathnels

Print

- example inspiration printout
- print outs

Made in advance

- foldable ramp

SETUP

Eight buggies at once. Eight sets of pieces laid out, so eight children can be building while others run theirs down the ramp.

Piece	Per buggy	Eight sets
Wheel rims	4	32 · 8 groups × 4
Tyres	4	32 · 8 groups × 4
Axle connectors	4	32 · 8 groups × 4
Pins	4	32 · 8 groups × 4
Blue beams	2	16 · 8 groups × 2
Axles	2	16 · 8 groups × 2

Piece	Per buggy	Eight sets
Cream beams	2	16 · 8 groups × 2

A group is one buggy.

Point the ramp away from the aisle, into open floor against a wall or a barrier, never towards where people are standing.

RESET BETWEEN CHILDREN

Buggy broken back into the box, pieces off the floor, the run cleared.

Back to eight sets. The station only takes eight at a time because eight sets of pieces exist, so a buggy not broken up is a child who cannot start.

Safety

Children	LEGO pieces and the cardboard ramp. Nothing here is adult-only.
Adults	Nothing.
First aid	Cleaning wipes and plasters.

Buggies on the floor. This is the only station that sends something across the floor at ankle height, and a car under a foot is a trip hazard. What lands on the floor is picked up between children rather than at the end of the day.

Small parts. A box of loose LEGO is a choking hazard for a small child, and this fair is advertised from 7 with younger siblings arriving alongside. The pieces stay on the table and what falls is picked up.

Notes

- **The ramp is built and still needs decorating.**
- **Guided or free build is not settled.** The station could run the four steps on the sheet, a free build from the box, or both.
- **The build sequence and the piece list need confirming with Muireann** before the day.