BROUGHT TO LIFE / A SCIENCE WORKBOOK

Kitchen-Table Science Lab

25 experiments with everyday materials



Ages 7–12

For curious kids and their grown-ups

SCIENTIST'S NAME

BEFORE THE FIRST LAB

Set up your lab

You need a pencil, a clear work area and an adult who can stay with you.

FOR GROWN-UPS

Read each method and its adult note first. Lay out only listed materials. Use a tray for wet work, and use the floor for ramp tests. Check the time estimate on each method page and allow extra time for set-up and recording.

KEEP THE WORK AREA SAFE

Use room-temperature tap water for mixing and use plastic cups. Keep food and drinks away from the lab. Never taste experiment materials. Wipe spills straight away, keep liquids away from electrical items and wash hands after the activity.

SHARE THE JOBS

The adult handles cutting, sets up stable supports and watches during the test. Keep loose parts away from younger children and pets. Work at a comfortable height with space to move.

PICK YOUR RECORDING STYLE

Draw, tick, count or dictate observations to an adult. If you want an extra challenge, try the repeat or redesign under “Go further”. Write down the results you actually see.

CHOOSE HOW TO USE THE PAGES

Use two matching US Letter sheets wherever an activity calls for A4 sheets if that’s what you have. Each investigation has a method page and a record page. On paper, sketch or write in the boxes. In the fillable PDF, select the boxes to type, then save a copy. Use paper for drawing.

WHEN YOU’RE FINISHED

Ask the adult to clear away materials as directed in each lab. Dry the work area and return the measuring tools.

THE METHOD

How to run a fair test

Try this routine whenever you compare two things.

1

Ask

Name something you can test. Which sheet holds more blocks: flat or folded?

2

Predict

Say what you think will happen and give a reason. Write it before testing.

3

Change one thing

In the bridge test the change is the shape of the paper. Keep the paper type, bridge gap and blocks the same.

4

Measure and record

Decide what counts as a result before you start. In the bridge test, count the blocks that the bridge can hold for three seconds before you reach the stopping point.

5

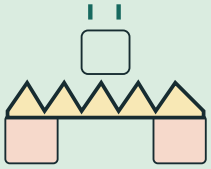
Use your evidence

Use a count, measurement or observation to answer your question. Repeat the test if you have time and compare the results.

USEFUL SENTENCE

I think ___ because in my test I saw or measured ___.

Paper Bridge



How does folding a sheet of paper change the load it can hold?

15 minutes

GATHER

- 2 matching sheets of A4 paper
- Ruler
- 8 matching large interlocking blocks
- 2 sturdy books of the same thickness
- 1 piece of thin card, 6 cm square

ADULT JOB

Set the books flat on a table with a clear space around them. Help cut the card and keep faces and fingers clear of falling blocks.

DO THE TEST

1. Put the books 10 cm apart. Lay a flat sheet across the gap with its long edges running from book to book.
2. Place the card flat in the middle of the bridge. If the card falls or the paper touches the table, record zero blocks.
3. Stack blocks on the card, one at a time, without clicking them together. Count a block if the bridge holds the stack for three seconds.
4. Stop if the card tilts, the paper touches the table or you reach eight blocks. Write the last count held for three seconds.
5. Fold the second sheet back and forth like a fan, about 3 cm per fold. Run each crease along the length of the page so it will cross the gap.
6. Open the folds into a zigzag. Lay it across the same gap and rest the card across at least two raised folds. Repeat with the same card and blocks.

Record your prediction before you start.

INVESTIGATION 01 / RECORD SHEET

Paper Bridge

MY PREDICTION

Which bridge will hold more blocks?

RESULTS

Record the load each bridge held. Draw how one bridge bends under its load.

Paper shape	Blocks held	What I noticed
Flat		
Folded		

WHAT I FOUND

What counts from your test show how the fold changed the bridge?

MY SKETCH

Draw and label what you compared. If you're typing, describe it.

GO FURTHER / AGES 10-12

Test fresh copies of both bridges across a 12 cm gap. Keep the card and blocks the same. How do your new counts compare?

Build and Improve

Test a design, change one part and try it again.

NAME

DATE

DESIGN GOAL

What should your design do?

FIRST DESIGN

Sketch and label it. On a screen, describe it.

REVISED DESIGN

Show or describe the one change you made.

Design	What I measured	Result
First		
Revised		

HOW DID IT GO?

Which design met the goal better? What evidence do you have?