For the adults who run STEM clubs

Five ready-to-run club sessions. One is free, in full.

Each package is a complete 60-minute session built from common, low-hazard materials.



In every package

- A facilitator guide with step-by-step timing that adds up to the session
- Two student handouts for the same activity: Level A to build, count and draw; Level B to measure and calculate
- An assessment rubric with four criteria and three levels, and the results to expect
- A safety sheet with every hazard class marked present or absent, and its control
- A shopping list with product links, dated prices and substitutes you may already own
- The science for the adult, with a diagram and a numbered source for every statement

Ages 8 to 13. Materials about $1.03 to $4.09 per student. Adult supervision required.

$19

One-time, for the four paid sessions, as PDFs to print. No subscription.

Read the free session first: Paper Bridge Challenge.

labs.deepsweep.ai/stem

The five sessions, each in three pictures

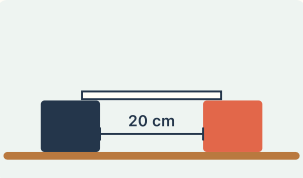
The same pictures open every facilitator guide.

Paper Bridge Challenge

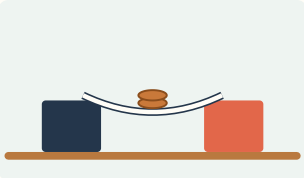
Free, in full

Groups span a 20 cm gap with one sheet of paper and find out how folding changes the load it carries.

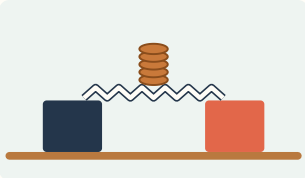
Ages 8 to 10 · 60 minutes · groups of 3 · adult supervision required



1. Set two stacks of books of equal height 20 cm apart and lay one flat sheet across. No tape, glue or staples.



2. Put coins on one at a time in the middle of the span, counting aloud, until the sheet touches the table or a coin slides off.

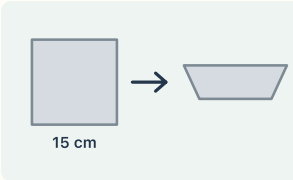


3. Fold a new sheet any way you like, test it across the same gap and compare the scores.

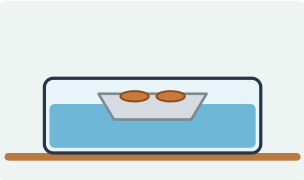
Foil Boat Load Challenge

Groups shape boats from equal squares of kitchen foil, load them with coins until they sink, and link hull shape to the load carried.

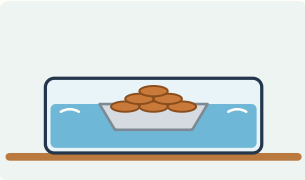
Ages 8 to 10 · 60 minutes · groups of 3 · adult supervision required



1. Shape one boat from one 15 cm square of foil. No tape, nothing added.



2. Float one boat at a time. Add coins one by one, spread over the bottom, counting aloud.

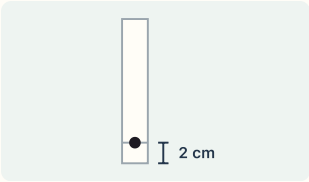


3. The score is the number of coins in the boat just before water comes over the side.

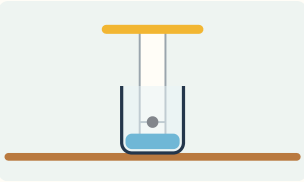
Hidden Colours: Marker Chromatography

Groups use strips of coffee filter and plain water to separate the inks in washable markers, then compare how far each colour travelled.

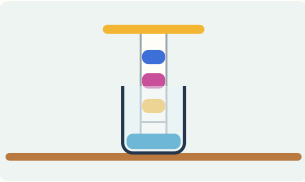
Ages 8 to 10 · 60 minutes · groups of 3 · adult supervision required



1. Cut a strip of coffee filter. Draw a pencil line 2 cm from one end and put one small dot of marker in the middle of it.



2. Tape the strip to a pencil and rest it across a cup, so the end just touches the water and the dot stays above it.

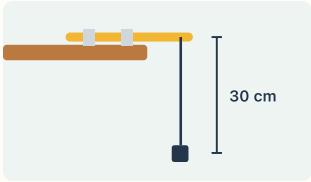


3. Hands off while the water climbs. Then lift the strip out and compare how far each colour travelled.

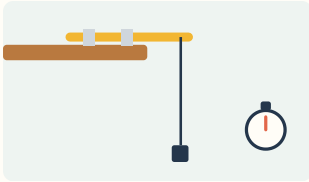
Pendulum Timing Lab

Groups build a string pendulum from a table edge and test, one variable at a time, what changes the time of a swing: mass, release distance or length.

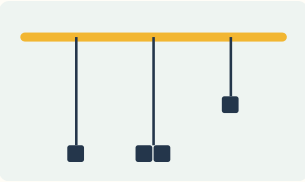
Ages 11 to 13 · 60 minutes · groups of 3 · adult supervision required



1. Tape a pencil to the table so about 5 cm sticks out over the edge. Hang a binder clip from it so the middle of the clip is 30 cm below the pencil.



2. Pull the clip back 7 cm, let go without pushing and time ten swings. Divide by 10 for one swing.

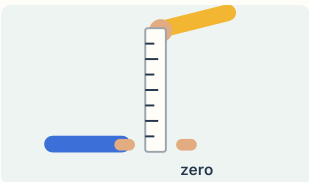


3. Change one thing at a time and time it again: more clips, a bigger pull-back, a shorter string.

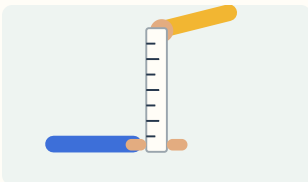
Reaction Time: the Ruler Drop

Pairs and threes measure their reaction time with a falling ruler, convert centimetres to seconds, and design a fair test of what changes it.

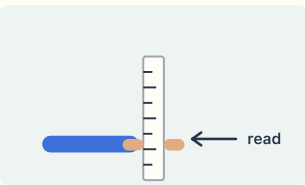
Ages 11 to 13 · 60 minutes · groups of 3 · adult supervision required



1. The dropper holds the ruler near its top end, zero at the bottom. The catcher keeps thumb and first finger open about 2 cm on either side of the zero mark.



2. The dropper lets go without warning. The catcher pinches the ruler as fast as possible.



3. Read the centimetre mark at the top edge of the catcher's thumb. A longer distance means a slower reaction.

Adult supervision is required for every session. The adult running the session is responsible for supervising it and for deciding whether it suits the group. These packages are drafted with AI assistance and then reviewed: every science statement is checked against a source you can open, every package must pass our hazard rubric before it can be built, and a second, separate review pass looks for errors in the science, the safety steps, the timing and the prices. The drawings show no real person. Written for adults who run clubs and classes; this is not for children and collects nothing about them. Packages and prices last checked 17 November 2026. labs.deepsweep.ai/stem