Walking Water Rainbow

Build the bridges. Come back for the colours.



Seven cups. Three colours. Six little paper bridges. Set your rainbow going, then let the water do the travelling while you do something else.

Designed for ages 5+ with grown-up setup • Slow discovery; return over hours or overnight

Before the first step

Use a level protected surface where the cups can stay undisturbed. These are science cups, not drinks. Food colour can stain. Keep the setup away from small children and pets. Expect return visits: the first coloured wet edges may appear quickly, but the fuller rainbow can take hours or overnight.

Gather everything with the grown-up checklist on the next page.

Walking Water Rainbow

Grown-up ingredients & supplies checklist

Quantities cover one starter attempt. Optional extras are marked. Repeat with fresh consumables in the same amounts and reuse the tools.

US cups and spoons; rounded metric equivalents. Use one measuring system consistently.

Materials

- [ ] 7; about 8 US fl oz (240 mL) each
  Matching clear cups

Ingredients

- [ ] 3 US cups (720 mL) total
  Room-temperature water
- [ ] Red: 10–12 drops; yellow: 5–6; blue: 5–6
  Liquid food colouring

Materials

- [ ] 6 half-sheets; about 5 1/2 × 11 in (14 × 28 cm) each
  Absorbent paper towels

Tools

- [ ] 1
  Large tray or protected level counter
- [ ] 1 of each
  Stirring spoon, marker, ruler and wiping cloth
- [ ] 1; adult helps
  Scissors for trimming paper bridges
- [ ] 1
  Measuring cup or jug with US and metric marks

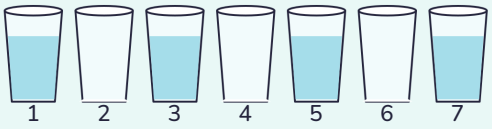
Optional extras are for the deeper idea, a retry or a later comparison. Read the activity's grown-up setup before starting.

Walking Water Rainbow

Make the discovery — steps 1 to 3

1

Seven cups, one colourful journey



Make a seven-cup rainbow road

Line up the cups on the tray, close together. Label them 1 to 7. Add 3/4 US cup (180 mL) water to cups 1, 3, 5 and 7. Leave cups 2, 4 and 6 empty.

The empty cups are waiting for a colourful delivery.

2

Red / empty / yellow / empty / blue / empty / red



Choose the starting colours

Add 5–6 red drops to cup 1, 5–6 yellow drops to cup 3, 5–6 blue drops to cup 5 and 5–6 red drops to cup 7. Stir each, cleaning the spoon between colours.

Point to the two colours beside each empty cup. What might they make?

3

Fold along the long direction
Strip about 1 in (2.5 cm) wide



Fold six thirsty bridges

Fold each half-sheet along its long direction into a strip about 1 in (2.5 cm) wide. Bend it into an upside-down U. Trim if needed so both ends can reach the bottoms of neighbouring cups without a tall loop.

These bridges are made for water, not walking feet.

Walking Water Rainbow

Make the discovery — steps 4 to 6

4

Seven cups, one colourful journey



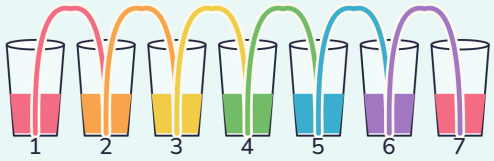
Connect the rainbow road

Bridge every neighbouring pair of cups. Each end should touch a cup bottom; coloured cups wet their paper ends. Leave the cups still and watch a wet edge begin to climb.

Can you spot the very first tiny colour traveller?

5

Let the paper do the travelling



Give the colours travelling time

Peek after about 20 minutes, then return over the next few hours. Leave the cups overnight if needed. Watch the wet colours meet in the empty cups. Do not pour water between cups to hurry them.

Draw a little rainbow while the real one is on its way.

6



Meet your new colours

Look for orange between red and yellow, green between yellow and blue, and purple between blue and red. Your dyes may make different shades. Name the colours you actually see and tell the story of their journey.

Seven cups. Six bridges. A rainbow you helped water build.

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Wonder a little further

How did that happen?

Paper towel has tiny spaces between its fibres. Water wets those fibres and moves through the spaces by capillary action. Water can travel up one side of a bridge and into the lower-water cup. The food colours travel too and mix where they meet.

Give it a new twist

Repeat with the same cups and amounts, using fresh paper from another towel brand. Look at the wet edge and the eventual mixing. Different absorbency changes the trip; a small colour change is still an observation.

One last little job

The adult pours out the coloured water, bins the wet paper, rinses the cups and wipes spills. Dry the tray before putting it away.

The water stopped travelling?

Check both ends touch the cup bottoms and the loop is low. A coated or weakly absorbent towel may need replacing with plain absorbent kitchen towel.

The middle cups are still nearly empty?

Give them longer. Keep the tray level and undisturbed. Full mixing can take hours or overnight; early wet bridges are already a useful result.

Explore the science

Science Buddies — Walking Water

Ontario Science Centre — Send Water Walking