

FAMILY CHALLENGE

WATER PATH RACE

You need

Tray, foil, two cups, water, towel

Let's do it!

- 1 Put an empty cup at one end of a tray.
- 2 Fold foil into a path from one cup to the other.
- 3 Pour a little water and watch where it goes.
- 4 Change the slope and test your path again.

★ BONUS TRY

Make a second path that spills less water.

Talk About It

How did the slope change the water's path?

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FAMILY CHALLENGE

AROUND THE OBSTACLE

You need

Tray, foil, two cups, plastic block, water

Let's do it!

- 1 Place a plastic block between your cups.
- 2 Create a foil path around the block.
- 3 Send water through and look for leaks.
- 4 Change one part and test it again.

★ BONUS TRY

Make the route longer without extra spills.

Talk About It

What helped water reach the destination?

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FAMILY CHALLENGE

FILTER BUILDER

You need

Strainer, coffee filter, two cups, muddy water

Let's do it!

- 1 Ask a grown-up to make a little muddy water.
- 2 Line a strainer with a coffee filter.
- 3 Pour the muddy water through into a cup.
- 4 Compare the water before and after.

★ BONUS TRY

Add another filter layer and test again.

Talk About It

What got trapped in your filter?

Never drink experiment water.

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FILTER FACE-OFF

You need

Two strainers, cotton, coffee filter, cups, muddy water

Let's do it!

- 1 Make one filter with cotton and one with paper.
- 2 Pour the same amount of muddy water into each.
- 3 Compare what comes through the two filters.
- 4 Choose a design change and test again.

★ BONUS TRY

Try two layers in one filter.

Talk About It

Which material worked better? How do you know?

Never drink experiment water.

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FAMILY CHALLENGE

THREE-STOP PIPELINE

You need

Tray, foil, tape, four cups, water

Let's do it!

- 1 Label three empty cups A, B, and C.
- 2 Build foil channels from one source to all three.
- 3 Pour water slowly and see which cups receive it.
- 4 Improve your design to reach every cup.

★ BONUS TRY

Try to give each cup an equal amount.

Talk About It

Where was water lost along the way?

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FAMILY CHALLENGE

SLOW OR FAST?

You need

Tray, foil, two cups, spoon, water

Let's do it!

- 1 Build two foil paths with different slopes.
- 2 Send one spoonful of water down each path.
- 3 Compare how quickly water arrives and spills.
- 4 Change one path and test again.

★ BONUS TRY

Make a path that is slower but spills less.

Talk About It

Was speed or saving water more important?

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FAMILY CHALLENGE

RAIN GARDEN RESCUE

You need

Tray, foil, sponge, cup, water

Let's do it!

- 1 Make a gently sloped foil hill on a tray.
- 2 Pour a little rainwater at the top.
- 3 Add a sponge garden near the bottom.
- 4 Pour the same amount and compare puddles.

★ BONUS TRY

Move the garden to a new spot and retest.

Talk About It

Where did the water go after your change?

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FAMILY CHALLENGE

SAVE THE LITTLE HOUSE

You need

Tray, plastic blocks, foil, small cup, water

Let's do it!

- 1 Build a tiny house on a dry tray.
- 2 Pour a little rain nearby and watch its path.
- 3 Add foil barriers or channels to redirect it.
- 4 Test again to see whether the house stays dry.

★ BONUS TRY

Guide the rain into a collection cup.

Talk About It

Which change protected your house best?

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FAMILY CHALLENGE

WATER FOR EVERYONE

You need

Paper, crayons, tray, foil, four cups, water

Let's do it!

- 1 Draw a town with homes, a school, and a garden.
- 2 Choose one cup to be the town's water source.
- 3 Build paths to three places that need water.
- 4 Test your system and improve any missed route.

★ BONUS TRY

Add a fourth place that needs water.

Talk About It

Who did your design help, and who was left out?



FAMILY CHALLENGE

FAIR SHARE CHALLENGE

You need

Four small cups, water, spoon, tray, labels

Let's do it!

- 1 Label cups Home, School, and Garden.
- 2 Put a limited amount of water in a source cup.
- 3 Use a spoon to divide water among the three.
- 4 Compare shares and try a different plan.

★ BONUS TRY

Add a clinic without adding more source water.

Talk About It

How did you decide what was fair?



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