



Walking the Wire

5 - 12 yrs | 15 min | Stage 1-3



Mission

Why do tightrope walkers carry giant balancing poles?

? Wonder & Predict


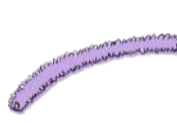
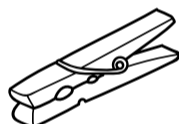
I PREDICT THAT.....

- The stick will fall over immediately
- The balancing walker will stay upright
- The pegs will make balancing easier
- Something else: _____

There are no wrong predictions.

WHY DO YOU THINK THAT?

What you will need

-  • 1 x paddle-pop stick
-  • pipe cleaner
-  • 2 x wooden pegs
- decorations (optional)

Investigate

Follow the steps carefully while observing.

- 1 Test the plain stick**
Balance the paddle-pop stick on one finger.

- 2 Make the balance pole**
Bend the pipe cleaner into a large upside-down U shape.

- 3 Attach to the stick**
Wrap the centre of the pipe cleaner around the paddle-pop stick.
Try placing it near the bottom of the stick.

- 4 Add the pegs**
Clip one peg onto each end of the pipe cleaner.
Let them hang freely.

- 5 Test your walker**
Balance it on one finger.
What do you notice?

If your walker tips to one side, try moving the pegs or gently bending the pipe cleaner.

Can you make it balance?

Test Results

What did you notice?

- The plain stick fell quickly
- The balancing walker stayed upright
- The walker wobbled but recovered
- Moving the pipe cleaner changed the balance
- The results surprised me
- I noticed something unexpected
- The pegs seemed to help



What did you observe?

Describe what happened.

What helped your walker stay balanced?



What happened?

Fill in the sentences using words from the box.

pegs | balance | finger | weight | wobble | upright

1. The plain stick was difficult to _____.
2. The walker balanced on one _____.
3. The hanging _____ changed how it moved.
4. The pegs added extra _____.
5. The walker could _____ without falling.
6. The balancing walker stayed more _____.



The science behind it

Why did the plain stick fall over?

A plain paddle-pop stick is difficult to balance. Even a small wobble can cause it to tip and fall. Scientists call this an unstable balance point.

Why did the balancing walker behave differently?

When the pegs hang below the stick, the weight is spread out differently. Now, when the walker starts to wobble, it often swings back toward its balanced position. This makes balancing much easier.

Hidden Balance Points

Every object has a special point that affects how it balances. Scientists call this the centre of mass.

Engineers use this idea when designing **racing cars, ships, and robots, and balancing toys.**



Take it further - Engineer's Challenge

Can you build an even better balancing walker?

Can you improve Alex's balancing walker?

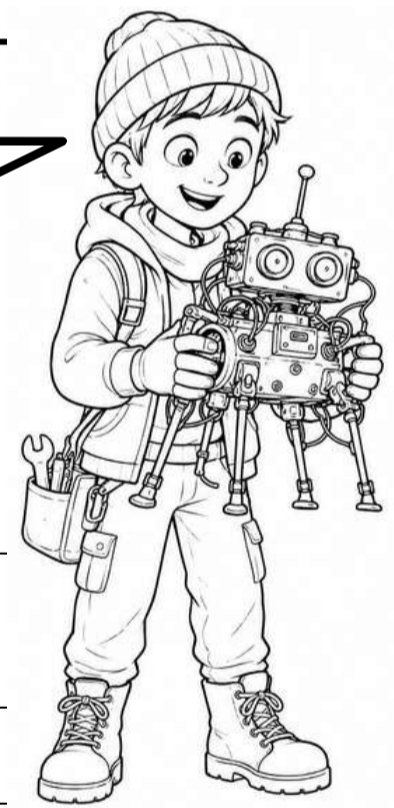
Add a second balance pole and two extra pegs.

Do you think it will balance better, worse, or stay the same?

My prediction:

What happened?

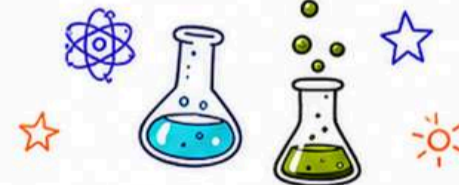
How many pegs can your balancing walker carry before it stops working?



Alex our engineer



UNLOCK THE CRAZY SCIENTIST LAB™



Alex our engineer

Go beyond the worksheet and explore a world of **science, mystery and invention.**



MACKEY'S MYSTERY FILES



Can you solve the mystery?

Follow clues, investigate strange discoveries and uncover hidden secrets.



Mystery missions



Science puzzles



Strange clues



ALEX'S SECRET LAB



Build it. Test it. Improve it.

Create inventions, tackle engineering challenges and discover how things work.



Build challenges



Gadgets & inventions



Engineering missions