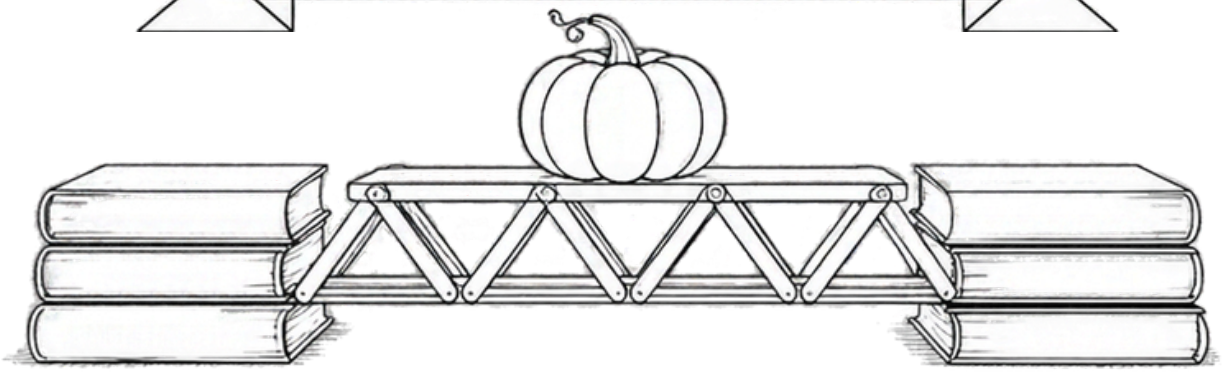
Pumpkin Bridge STEM Challenge

- Parent Guide -



Intro: Kids design and build a bridge strong enough to hold a small pumpkin. They practice engineering, problem-solving, and measurement. Time: 30-45 minutes. Best for grades 4-6, with a simpler page for younger siblings.

Materials: craft sticks; index cards or paper; masking tape; ruler; two supports the same height (books, boxes, or chairs); test weights (pennies or dried beans); a mini pumpkin or gourd.

Steps:

1. Set two same-height supports (books, boxes, or chairs) about 8 in. apart.
2. Give children craft sticks, paper, and tape to design a bridge that spans the gap.
3. Have them predict how many test weights the bridge will hold.
4. Add pennies or beans one at a time and count. About 45 pennies = 4 oz; a mini pumpkin is usually 3-8 oz (about 45-90 pennies).
5. If it holds enough, try the pumpkin! If it falls, improve it and try again.

Coaching tip: Let them struggle a bit first! Then ask: “Where did it bend?” If they’re stuck, give a hint . Try folding paper into a “V,” using triangles, layering sticks, or taping the ends down.

Extend the learning options: Create two designs and use different materials fewer supplies, or widen the gap. Compare the designs. Which one was stronger? What do you think made the difference? Research real bridge designs and discuss why builders may use the shapes in those bridges.

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Engineer's Plan



Name _____ Date _____

The Challenge: Build a bridge across a gap between two supports (like books or boxes) that can hold a small pumpkin.

Your materials: craft sticks, paper or index cards, masking tape.

Measure: The gap between my supports is ____ inches. My supports are ____ inches tall.

Sketch your bridge design. Label your materials.

Why I think this design will be strong:

_____

_____

_____

_____

My bridge will hold ____ pennies or beans.

Will it hold the pumpkin? Yes / No





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Test & Improve



Trial	What I changed	Prediction	Actual result (how many held)
Trial 1			
Trial 2			
Trial 3			

Sketch your improved design.

Reflection

1. Which design was strongest? Why do you think so?

2. Where did your bridge bend or break first?

3. What shapes or techniques helped (folding, layering, triangles)?

4. Bonus challenge: Could you hold the same weight with fewer supplies? What would you remove?





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Little Engineer Pumpkin Bridge

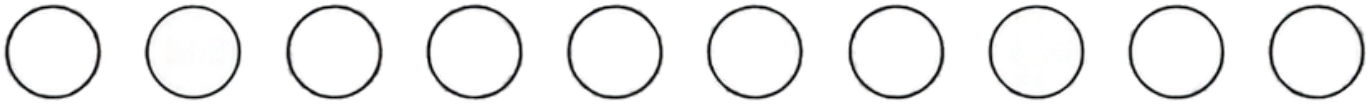
Name _____ Date _____

Draw your bridge.

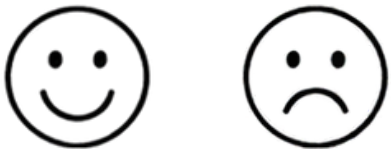
My guess: My bridge will hold ____ pennies or beans.



How many did it hold?



Did it hold the pumpkin?



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