kidstack
the complete engineering and technology stack for kids

ENGINEERING PROJECT:

Build a Bridge that can Support 100 Pennies

Build a bridge that can support $1 worth of pennies. Bridges are structures that are used to cross features, such as rivers and freeways. A bridge needs to support its load, which includes its own weight (the "dead load") and whatever will be on the bridge (the "live load" – pennies, in this case).

MATERIALS NEEDED:

- Pins
- Straight Straws
- Scissors
- 1 small bathroom cup
- String
- Books or other materials for stacking

GO DISCOVER:

1. Create a triangle out of 3 straws and 3 pins
2. Create a square out of 4 straws and 4 pins
3. Test the 2 shapes to see which you think is stronger. What do you think of the relative strength of the two shapes? Can you envision a way to use those shapes in a bridge design?
4. Create 2 stacks of books at least 12in tall and space them at least 12 inches apart, or use 2 equal height chairs
5. Using the pins and straws create a bridge that can span the gap between the books. Use your conclusions from Step 2 to inspire your bridge – be creative!
6. Put the string around the center of the bridge and attach the other end to the small bathroom cup.
7. Slowly add pennies to see how many the bridge will support
8. Try to support $1 worth of pennies!