



HOMESCHOOL SCIENCE EXPERIMENT

TESTING THE STRENGTH OF DIFFERENT PAPER BRIDGE DESIGNS



Engineers design bridges to be strong and hold weight.
In this experiment, you will test which paper bridge design is the strongest!



QUESTION

Which paper bridge design can hold the most weight before it breaks?



HYPOTHESIS

I think _____
will be the strongest because _____.



MATERIALS

- Printer paper (same type for all bridges)
- Tape
- Scissors
- 2 stacks of books or boxes (same height)
- Ruler
- Weights (coins, washers, or small weights)
- Tray or container for weights
- Notebook or worksheet (this sheet)



PROCEDURE

1. Build each bridge design below using the same number of sheets of paper and the same amount of tape.
2. Place your bridge across the two stacks of books so the bridge is flat and secure.
3. Place one weight in the center of the bridge.
4. Add weights one at a time, stacking them in the center.
5. Record the total weight the bridge holds right before it breaks or collapses.
6. Test each design at least two times for accuracy.



DATA TABLE

Bridge Design (Name or Sketch)	Number of Sheets of Paper Used	Test 1: Maximum Weight Held (grams)	Test 2: Maximum Weight Held (grams)	Average Maximum Weight Held (grams)	Rank (1 = Strongest)
Design 1 _____					
Design 2 _____					
Design 3 _____					
Design 4 _____					

**Use grams for all weights for accurate comparison.*



OBSERVATIONS

What did you notice while testing your bridges?



CONCLUSION

Which bridge design was the strongest? _____

What do you think made this design the strongest?



REMEMBER: Engineers test, learn, and improve their designs. Keep experimenting!