

Activity: Thin-Plate Bridge Activity

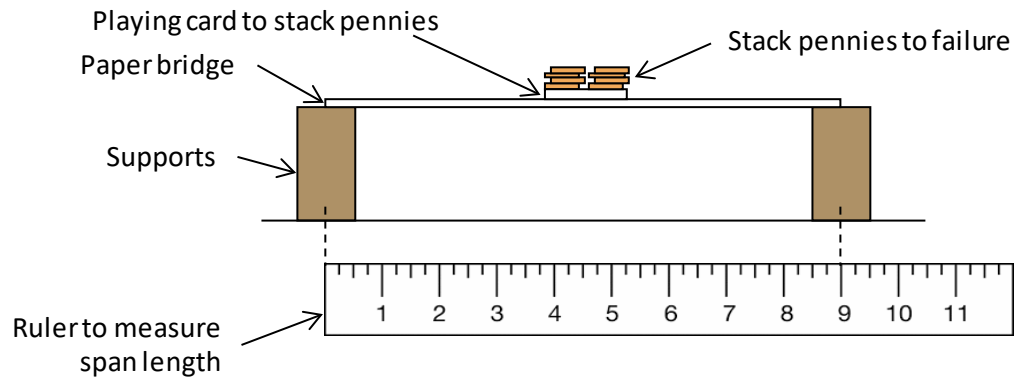
Required Materials (per group)

- 10 sheets of 8.5" x 11" copy paper
- 2 supports (e.g. 2 equal height books, 2 4-inch long 2x4s)
- 12-inch long ruler
- 100 pennies
- Playing card (optional) to serve as a surface to stack the pennies on

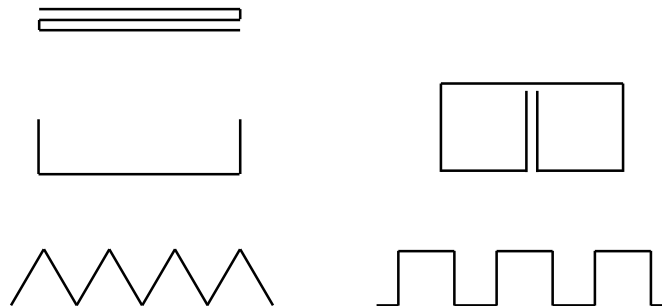
Activity

Students will try folding their sheets of paper in different patterns to create a stronger bridge. Changing the fold pattern and the span length will change the number of pennies the section can hold.

Setup



Fold Patterns to Try



Challenge

Create a fold pattern out of one piece of paper that will hold the most pennies at a span length of 9 inches. See how many pennies the piece of paper can hold if you put the pennies near midspan.

What happens when you change the span length? (i.e. shorter than 9 inches)

What happens if you stack all the pennies in the middle compared to if you spread them out along the length of the paper?



Preliminary Designs

	Sketch of Design	Span Length	Max Load	Notes on Design/Failure
1		9 inches	2 pennies	Paper started to bend several inches when one penny was placed on it.
2				
3				
4				
5				
6				



	Sketch of Design	Span Length	Max Load	Notes on Design/Failure
7				
8				
9				
10				

Best Design

Sketch of Design	Max Load	Notes on Design / Failure