

Bridge The Gap



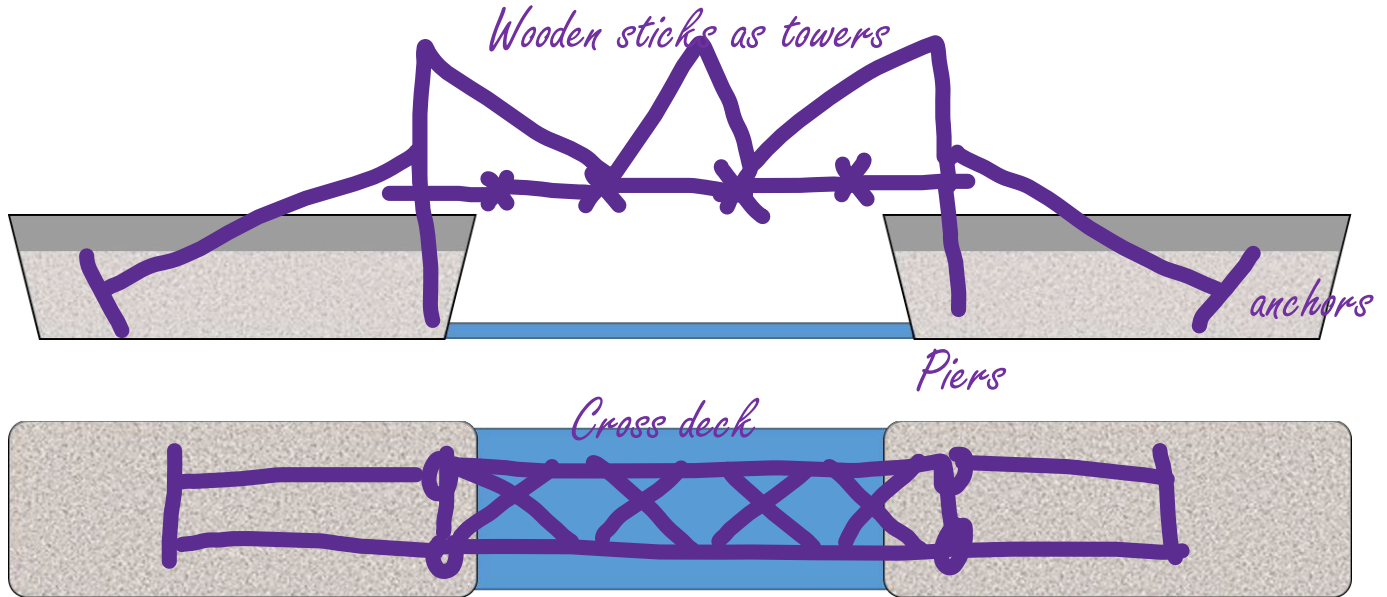
Engineer name: EXAMPLE

Date: _____

Engineer's Notebook

Challenge: Design and build a bridge that can hold 200 grams using 20 wooden sticks, 12 coffee stirrers, 1 meter of string and 1 meter of masking tape.

Plan your design: Discuss the alternative designs and make a decision on what would work best. Label and list materials. Restriction: your bridge cannot touch the containers.



Test your design and improve it:

Trial #	How much weight your design held?	What would you do different next time?
1	150	Overlap the wooden sticks
2	200	Straighten up the piers
3	500	Tense up the strip to the anchors
4	800	Pay attention to the balance

Reflection about your design: What did you learn?

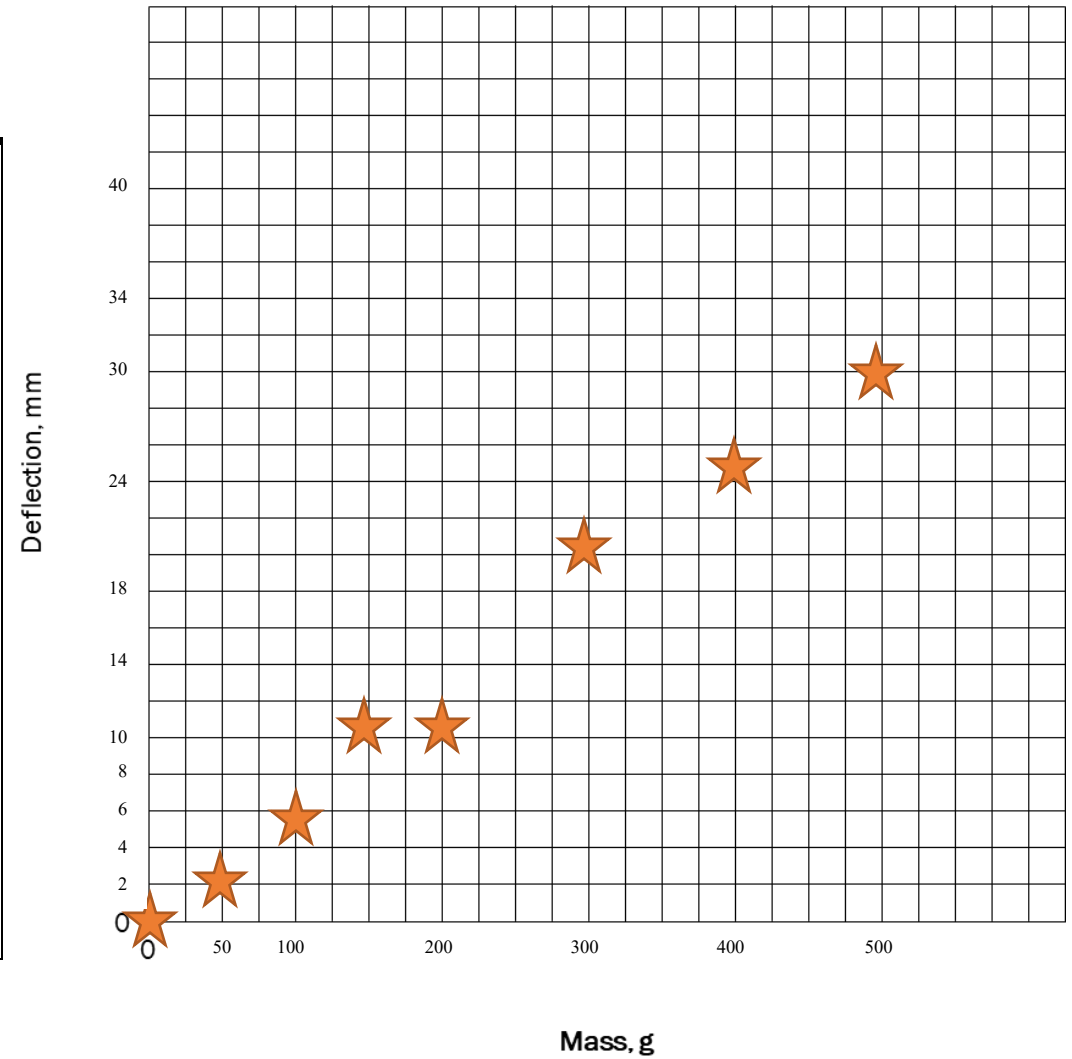
Creating a strong bridge combines different aspects to account for compression

Ant tension forces across the structure.

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Engineer's Notebook

Data Table 1

Load [g]	Clearance [mm]	Deflection [mm]
0	150	0
50	148	2
100	145	5
150	140	10
200	140	10
300	130	20
400	125	25
500	115	32
1,000	Failed	Failed
1,500	NA	NA
2,000	NA	NA



Graph 1: Bridge deflection curve