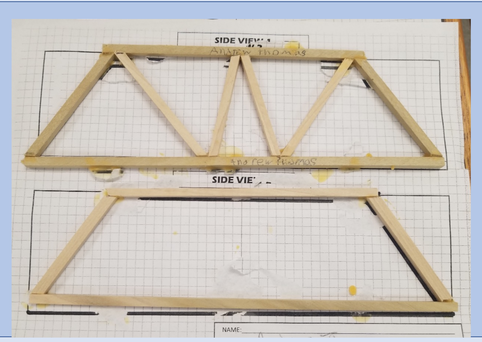

Building Bridges

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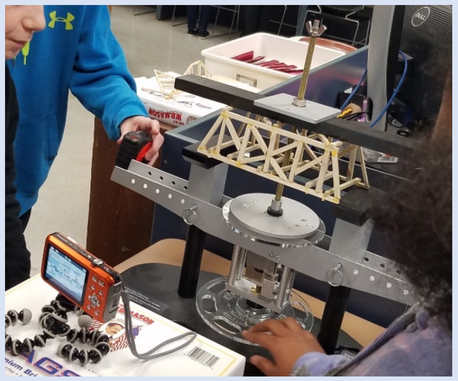
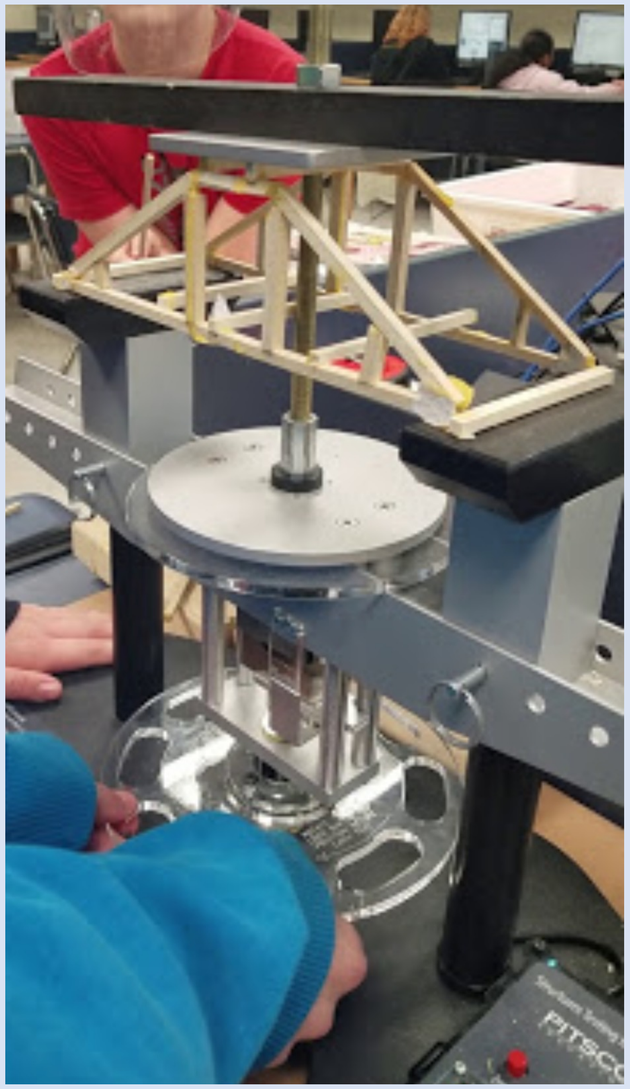
Bridges: Students will build bridges to fit on a Pitsco Structures Testing Instrument and will test to see how much force has been applied prior to failure. Since failure will not destroy the bridge, students can see where their bridge failed and modify their design. Also, since weights will not be applied to the top of the bridge, students can have a wider variety of designs.



Old Testing "Table"

Objectives: Students Will Be Able To:

- Apply the engineering design process to construct a bridge with given size limitations.
- Identify how geometry affects bridge design and function and apply that knowledge to the design and construction of a bridge.
- Calculate the strength-to-weight ratio of their final designs.
- Explain how tension and compression forces act on a bridge support when a load is applied.



Results

Group Leader	Held (lbs)	Held (g)	mass of bridge (g)	Strength to weight ratio
	79	35909	43.3	829.3
	137	62272	57.4	1084.9
	144	64545	51.1	1263.1
	133	60455	47.1	1283.5
	130	60454	40	1511.4
	146	66360	43.5	1525.5
	184	83636	49.4	1693.0
	122	55454	31	1788.8
	272	123636	57.5	2150.2
	262	119091	46.2	2577.7
	250	113636	40	2840.9
	336	152727	52.6	2903.6
	322	146363	48.5	3017.8

"Greatness is not measured by the walls we build, but the bridges" (DaShanne Stokes)