Bridge Project

Mr. Holbrook

- **Challenge:**
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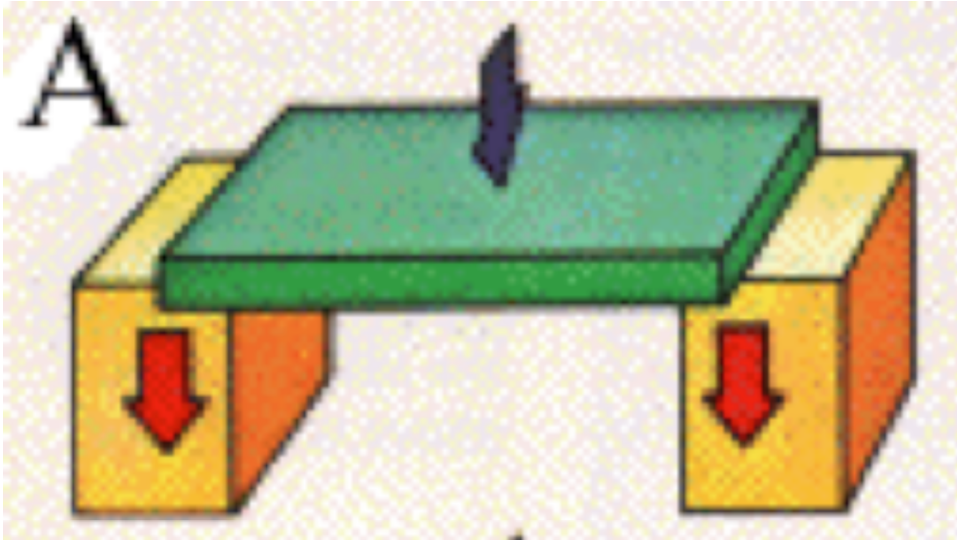
- Your bridge will have to cross a 16 inch gap and withstand down forces and weight. Your bridge must be 18 inches long. 1 inch of each side will rest on the holding jig.



- You will be supplied with 20ft of 1/8 steel wire (pencil rod)
- No other materials may be used
- You may build any style bridge but must only use the supplied materials

- The weight hook (it will be a large C shape) must be able to attach to your bridge in the middle.
- We will add more weight up to a specific number to be announced later until the bridge is close to failing.

- Bridges may be **mig welded, spot welded, or oxyacetylene welded.**
- Welds are only to be used on joints and not to "thicken" up the wire to add weight or strength. Failure to comply with this rule will result in disqualification. If the majority of your wire has been ‘doubled’ in size you are disqualified.

- The design phase is a very important process with this project as there will be no extra materials given. Detailed plans of your bridge including different angles of view and measurements must be included with your final project team booklet. We will go over in class what a proper scale drawing looks like.
- The planning booklet makes up 40% of your grade. The planning booklet needs to be handed in prior to metal being given out

- **Groups:**
- Teams are to be no more than 4 people

- **Grading:**
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  Planning booklet: 40%
- Design and build quality: 50%
- Competition marks: 10%

- **Questions for the individual groups:**

- 1.How did you come up with the initial design for your bridge?
- 2.Did your design change as you built your bridge?
- 3.Which geometric shapes did you use in your bridge? Why?
- 4.How does the strength of the bridge compare to the weight of the bridge?
- 5.Would you make any changes in the design of your bridge?
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- **Questions for the whole class:**
- 1. Which bridge was the longest? Tallest? Strongest? Heaviest? Why?
- 2. What materials do you envision being used in future bridges?
- 3. How can computers help design bridges?

Pratt

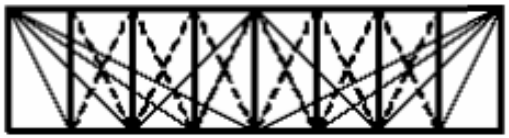
Parker

K-Truss

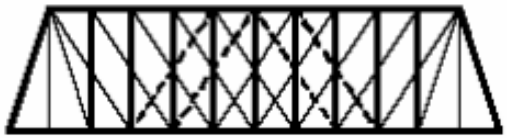
Howe

Camelback

Warren



Fink

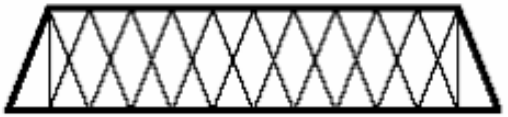


Double Intersection Pratt

Warren (with Verticals)

Bowstring

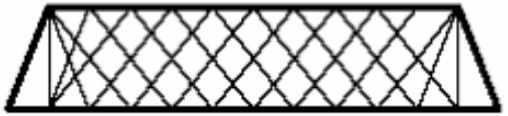
Baltimore



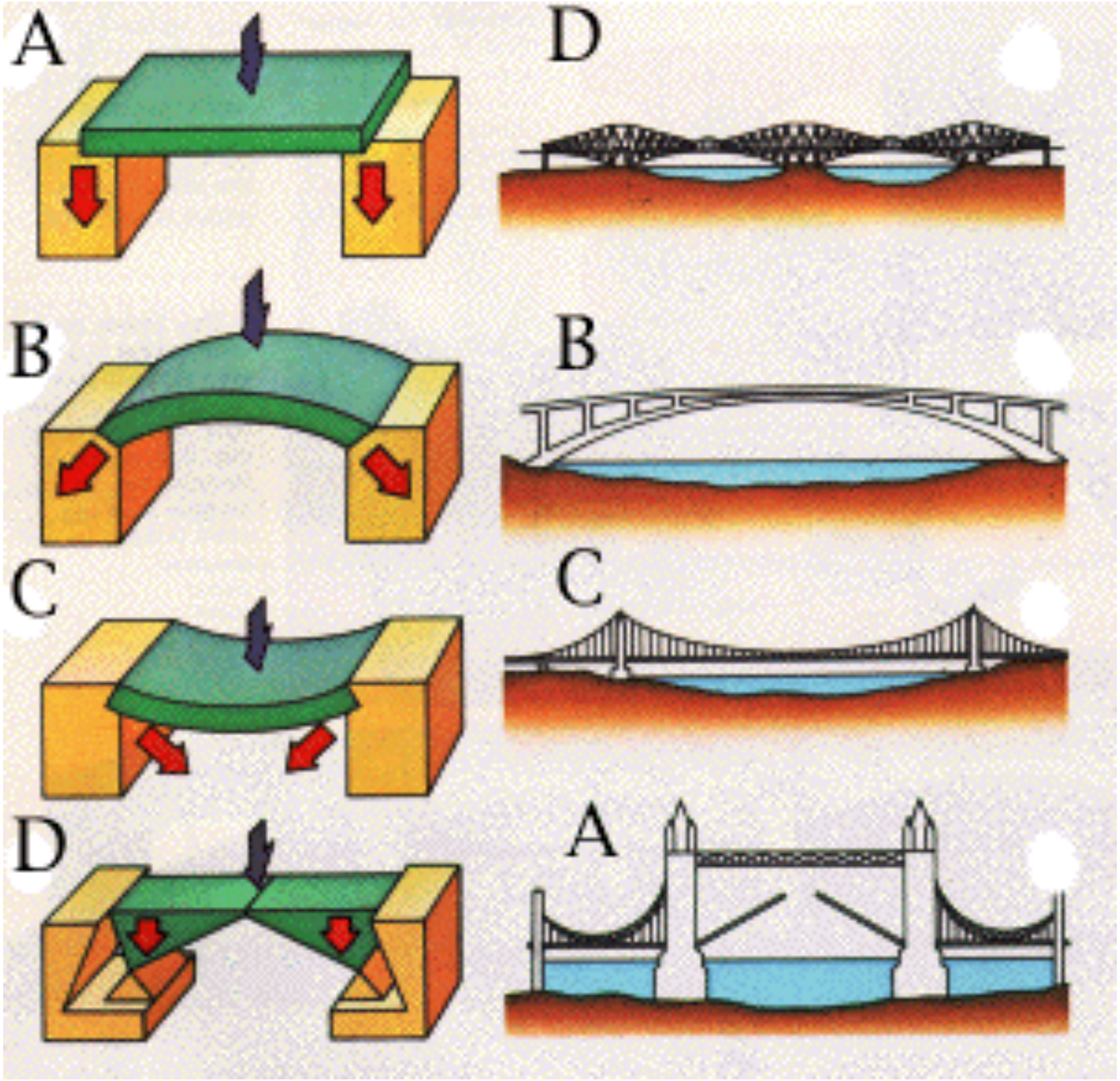
Double Intersection Warren

Waddell “A” Truss

Pennsylvania



Lattice


A
B
C
D
D
B
C
A

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