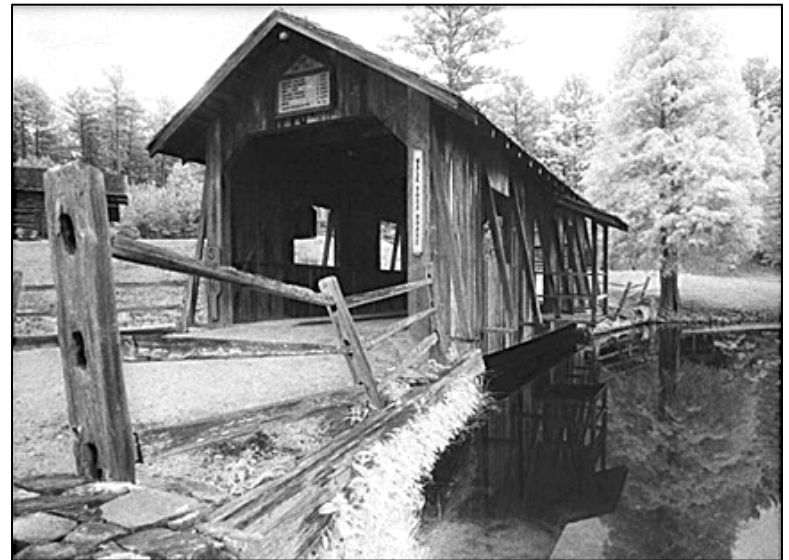


Bridge Building



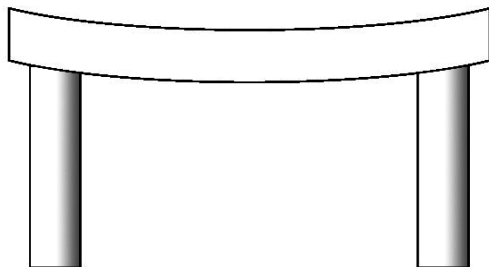
Beam Bridges

Advantages & Disadvantages:
(for each, circle one)

Inexpensive or **Moderate Cost** or **Expensive**
Easy to Build or **Moderate to Build** or **Hard to Build**
Large Span or **Medium Span** or **Small Span**

What other advantages do beam bridges have?

Draw arrows for the forces in compression ($\rightarrow\leftarrow$) and forces in tension ($\leftarrow\rightarrow$) on the beam bridge below.



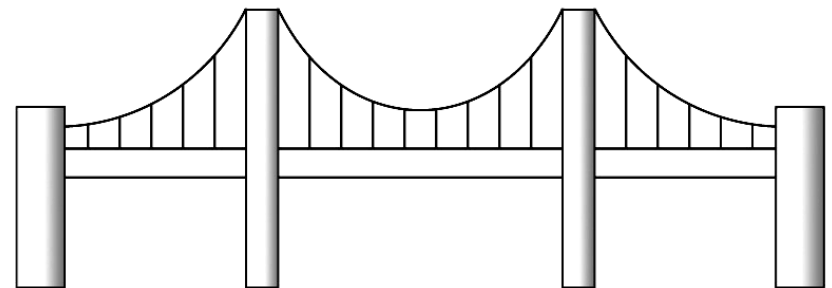
Suspension Bridges

Advantages & Disadvantages:
(for each, circle one)

Inexpensive or **Moderate Cost** or **Expensive**
Easy to Build or **Moderate to Build** or **Hard to Build**
Large Span or **Medium Span** or **Small Span**

What other advantages do suspension bridges have?

Draw arrows for the forces in compression ($\rightarrow\leftarrow$) and forces in tension ($\leftarrow\rightarrow$) on the beam bridge below.



Arch Bridges

Advantages & Disadvantages:
(For each, circle one)

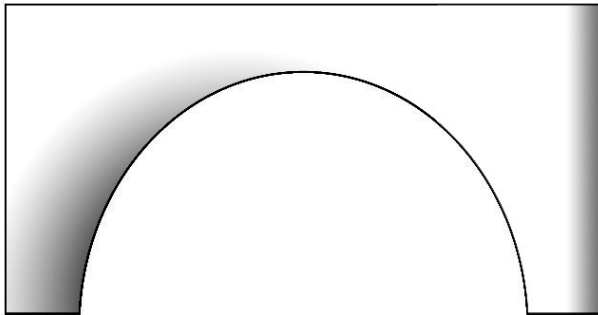
Inexpensive or **Moderate Cost** or **Expensive**

Easy to Build or **Moderate to Build** or **Hard to Build**

Large Span or **Medium Span** or **Small Span**

What other advantages do arch bridges have?

Draw arrows for the forces in compression ($\rightarrow\leftarrow$) and forces in tension ($\leftarrow\rightarrow$) on the beam bridge below.



Trusses

Why would you want to use a truss on a bridge?

How many extra supports does it take to make a square truss stable?

What shapes do the extra supports create?

What shape truss pattern is the most stable?
(circle one)

Triangle or **Square** or **Pentagon**

Your Drinking Straw Beam Bridge

Feel free to sketch a diagram of your bridge design in the space below.

Your bridge must:

- Span the gap below (5 inches)
- Be freestanding (it cannot be taped to the tables)
- Come in on budget (use only the materials provided)
- Support at least the bucket

