

# Truss Design

Since the strength of a beam is determined by its depth, the deeper the beam the stronger it is. A solid deep beam is heavy and expensive so one solution is to build it out of sticks. We call this a truss.

Since parallelograms are not stable under a load and triangles are, we find that triangular shapes are the best for trusses.

The deck of the bridge may be **on top** of the truss, **below** the truss or **through** the truss.

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|-----------------|------------------|------------------|------------------------|
| <b>Pros</b>     |                  | <b>Cons</b>      |                        |
| * high strength | * deck placement | * maintenance \$ | * precisely engineered |
| * economical    | * long spans     |                  |                        |

