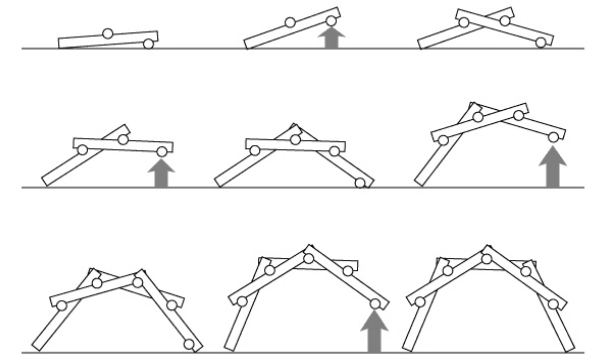




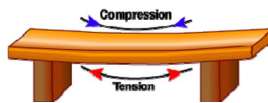
Da Vinci Bridges:

A Da Vinci Bridge is a self-supporting arch bridge. It requires no specific skills to manufacture the parts. Vinci bridge can also be carried by a handful of men into any battlefield. It requires no nails or ropes to hold it together and the bridge is self supporting and would be capable of holding a substantial amount of weight.

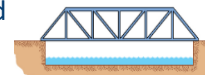


Bridges can **collapse** if they are not strong enough, or if they are put under too much force. This can be due to **worn out or inferior parts and materials** during construction and maintenance, **adverse weather** or **too much load** or traffic. Therefore, regular safety checks are very important.

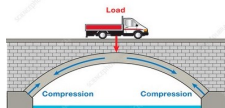
Beam bridge – The force of compression manifests itself on the top side of the beam bridge's deck/ roadway. This causes the upper portion of the deck to shorten causing tension in the lower portion of the deck making the lower portion of the beam lengthen.



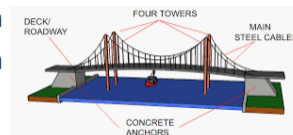
Cantilever/Truss bridge - cantilevers that project horizontally into space, supported on only one end. Small footbridges have simple beams; and Large bridges are built to hold more weight. They also use trusses built from structural steel, or box girders built from prestressed concrete.



Arch bridge - a curved design. Load forces are conveyed along the curve of the arch to the supports on each end. These abutments carry the load of entire bridge and hold the arch in the precise unmoving position. Conveying of forces is done on the top of the arch.



Hanging/Suspension bridge - suspend the roadway by cables, ropes or chains from two tall towers. These support the majority of the weight as compression pushes down on the suspension bridge's deck and travels up to transfer compression to the towers. The towers then dissipate the compression directly into the earth.



Key Vocabulary

Vocabulary	Definition
abutments	Supports that carry the load of the bridge.
compression	What happens when you push down on a spring and collapse it? - You compress it, and shorten its length.
Keystone/ locking stone/ voussoirs	Forces are carried across the arch via the keystone because its weight pushes the surrounding stones down and outwards.
pressure	Continuous physical force exerted on or against an object.
support	A thing that bears the weight of something or keeps it upright.
tension	What happens to a rope during a game of tug-of-war? - It undergoes tension

Games <https://wordwall.net/resource/6464316/we-are->