



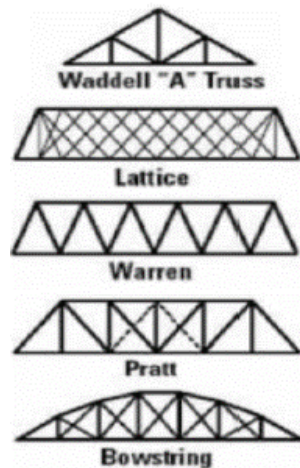
Vocabulary

structural members	the different parts of an object that are joined together to build a frame, for example columns, beams and arches
load	the amount of weight a structure has to carry
column	tall, upright, part that helps hold things up
beam	a strong, straight piece that goes across and helps holds structures up
tension	a pulling force that stretches a part of a structure
triangulation	using triangular shapes to make a structure stronger
stability	the condition of quality of a structure to prevent it falling over
gravity	a force that pulls objects down towards the ground

Truss and Triangulation

A **truss** is a group of beams joined together.

Triangulation helps the structure to become stronger. When you push on corner of a triangle, the other corners help share the force, so the structure stays strong and steady.



Complex Structures - Shelter

A **frame structure** is a skeleton that gives support, shape and can be a framework for outer coverings. They are built using different parts like **beams** and **columns**. Examples of frame structures include: buildings, bridges, gazebos and roller-coasters.



The strength of a frame structure depends on the materials it is made from and how the parts are joined together. Strong materials and well-designed shapes make the frame stronger and safer.



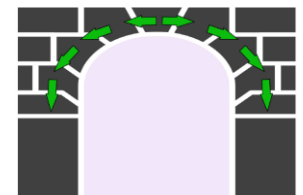
Gravity and Structures

This old roof is bending because of the downward force of gravity. **Gravity** pulls down on everything, and it can make parts of building, squeeze, twist or bend.



Bridges and Arches

Before the use of strong materials, people built bridges using bricks in the shape of arches. Arches help the spread the weight and push it to the pillars at each end.



Columns

A **column** is a tall, upright structure. It takes the weight from the top (like a roof) and passes it down to the ground.

