

Information on Science and Art for week beginning the 11th of May

Bridge Experiment and Triangles

- Try making the following shapes with straws, spaghetti, lollipop sticks - a square, a hexagon, a parallelogram and a triangle
- Which shape is the most stable?
- The triangle is the strongest 2D structure. All the others will want to collapse when pushed.
- See can you find a picture of a 'truss bridge' and what shapes are used most often. Are there actually any squares?
- Ask your parents about the attic in your house.

Objectives/Task:

- Build a bridge using spaghetti.
 - The bridge needs to span at least 1.5 spaghetti lengths
 - The bridge will need to carry a load e.g. 1, 2 or 3 dinky cars or jenga blocks or whatever is on hand.
 - Use as little spaghetti as possible
 - The best bridge will have a high load-to-weight ratio
- 1: First build a deck for your bridge - 'the road' - this should be a strip of light cardboard. Make this from a strip of cereal box about 5cm wide.
 - 2: Demonstrate that the road, only on a base of spaghetti, will not be able to carry a load - it will need the support of the trusses.
 - 3: Use dry spaghetti and marshmallows for the joints
 - 4: The marshmallows are important as the joints need to be flexible, to be able to transfer the load from one element to another - that means one spaghetti stick to another.
 - 5: It might take a few attempts to get your spaghetti lengths correct.
 - 6: Diagonal supports will be the longest
 - 7: If you are having trouble visualising your bridge just look and think of your house.
 - 8: Have lots of fun and let me know how it all goes!!