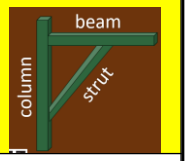
Year 5: Problem: I need to make a marble run that is free standing structure

Subject Specific Vocabulary

Modelling	the process of making a 3-D representation of a structure or product.
Structure	A structure is a combination of materials and or parts that supports a load
Strut	These are used to create triangles between the columns and beams to increase strength and stability
Frame	A structure assembled from long thin strips of material
Triangulation	the use of triangular shapes to strengthen a structure. 
Prototype	A model of a design that shows how it works, what it looks like and can be tested to see if it works as it should
Reinforce	To strengthen or stiffen a product so that I can perform its function better
Innovative	An idea or a product that is new
Theming	Theming is designing and decorating a product based on a central idea
Stable	Fixed, firm, or in position; not shaky or easily moved 
Mass Production	Producing identical products in huge quantities

Tom Karen (1926 –2022)

The industrial designer was born in Vienna, Austria, and arrived in England in 1942 during World War Two.
He is famous for being a successful and influential toy inventor. His products were unique and colourful. They included: the Raleigh chopper bicycle, the bond bug (a 3 wheeled car), Luke Skywalker's Land Cruiser in Star wars and the marble run.



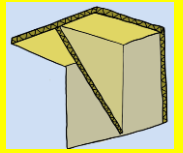
Careers

Architects - create designs for new construction projects, alterations and redevelopments

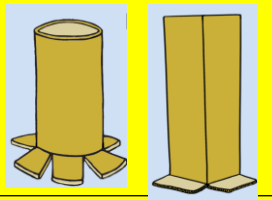
Civil engineers - responsible for designing and building bridges and other highway-related structures. Typical tasks for bridge engineers include designing and maintaining bridge structures, minimizing environmental impact, and supervising the creation of it.

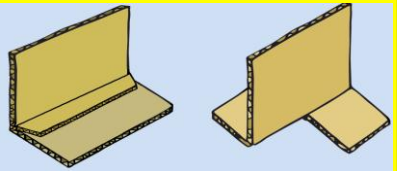
Industrial Design– Tom Karen was an Industrial Designer. This means he designed products that were manufactured by mass production.

Sticky Knowledge

To know that brackets are the use of triangular shapes to strengthen a structure 

Scoring cardboard makes it easier to bend of fold 

Flange joints are used to connect pipes and tubes 

Tabs are used to join two pieces of cardboard together 

A marble run is toy which has a track which marbles run down from start to finish .



