

There are some techniques you can use to make your structures more sturdy:

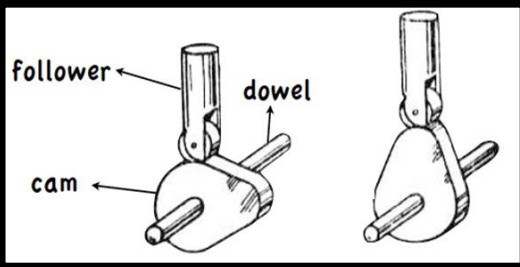
You can use a cardboard triangle to reinforce corners.



If you are making a wooden frame you can use a piece of wood to create a triangular reinforcement.



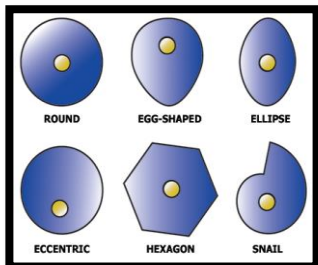
## Cam Mechanism



This is Alexander Graham Bell, the inventor of the telephone.

He was born in 1847 in Edinburgh and was fascinated by sound from a young age. His mother had very little hearing and his father worked with deaf children, teaching them to speak by feeling the vibrations their vocal chords made, something Bell carried on himself.

## Types of CAMS



## Materials:

### Cam:



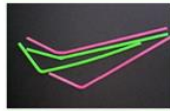
### Dowel:



### Wood and dowelling:



### Straws:



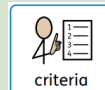
## Tier 2 Vocabulary



To judge how a product meets chosen criteria



A plan or drawing of your ideas



A list that shows you what the thing you make should be like

## Topic (Tier 3) Vocabulary

### Cam mechanism

a mechanism made up of a cam, follower and a dowel

### Rotary movement

moving round and round

### Linear movement

moving up and down

### Cam

the rotating part of a mechanism

### Dowel

a peg used to hold components together

### Follower

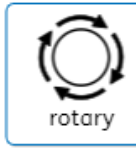
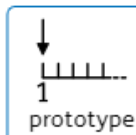
roller needle used to turn the cam

### Prototype

a quick 3-D model used to check a design

### Product

something that is made



# National Treasures

British toy shops



## Prior learning

How to strengthen materials Working to design criteria (KS1 and Y3)

## Rights of the Child/Global Goals

### Article 13

Every child must be free to express their thoughts and opinions and to access all kinds of information, as long as it is within the law.

### Global Goal 9

Industry, innovation and infrastructure

## DT Big Ideas

### We Are Engineers

**Design:** we use criteria to design products that do a job for a person or group.

**Make:** we make products that do a job or solve a problem.

**Evaluate:** we reflect on our work all the time, we study other people's products and we look for ways to improve.

**Technical Knowledge:** we use our understanding to make products that work.

## Beating, Whisking and Whipping



Use a fork to mix eggs



Whisking puts tiny bubbles in some liquids which makes them thicker. You need a bowl and a balloon whisk.

## Folding



Folding is gently mixing to stop the bubbles from bursting. You need a large spoon or spatula. Very slowly combine the ingredients.

## Slicing and Dicing



When slicing keep your fingers out of the way and aim to have the pieces the same size.



Dicing is when you chop the ingredients in to cubes.

carrot broccoli courgette tomato new potato pumpkin

	carrot	broccoli	courgette	tomato	new potato	pumpkin
January						
February						
March						
April					✓	
May					✓	
June	✓		✓	✓	✓	
July	✓		✓	✓	✓	
August	✓	✓	✓	✓		
September	✓	✓	✓	✓		
October		✓		✓		✓
November						✓
December						✓

## Tier 2 Vocabulary



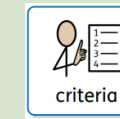
evaluate

To judge how a product meets chosen criteria



design

A plan or drawing of your ideas



criteria

A list that shows you what the thing you make should be like

## Topic (Tier 3) Vocabulary



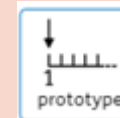
seasonal food

food that grows locally during the season we are in



product

a quick 3-D model used to check a design



prototype

something that is made

# National Treasures

## British Produce



# Prior learning

## Healthy eating plate



# Rights of the Child/Global Goals

## Article 24

Every child has the right to the best possible health. Governments must provide good quality health care, clean water, nutritious food, and a clean environment and education on health and well-being so that children can stay healthy.

## Global Goal 3

Good health and wellbeing

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**Technical Knowledge:** we use our understanding to make products that work.

**Cooking and Nutrition:** we use what we know about food to safely prepare healthy meals.



## Making secure connections

Connecting block



Bulb holder –  
Bend wire around screw  
in direction of turning  
when tightening

Twist strands of  
wire together



Wrap ends  
around

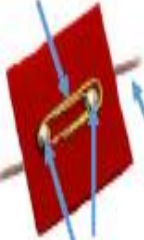


Tape over with  
insulating tape



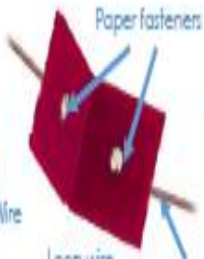
## Handmade switches

Paperclip



Paper fasteners

Paper fasteners

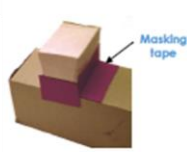


Loop wire  
around paper  
fasteners

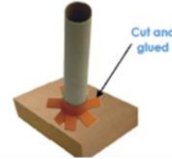


Foil on inside  
surfaces

You can join boxes using tape, glue and tabs.

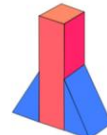
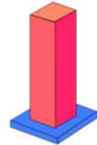


Masking  
tape

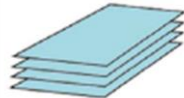


Cut and  
glued

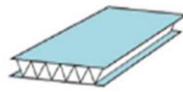
Wide bases make structures stronger.



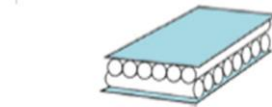
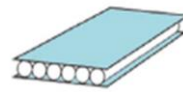
Stiffening and strengthening sheet materials:



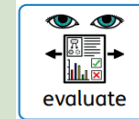
**Laminating:** glue together  
layers of card



**Corrugating:** zigzag card in  
between two layers of card



## Tier 2 Vocabulary



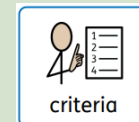
evaluate

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design

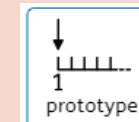
A plan or drawing of  
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criteria

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## Topic (Tier 3) Vocabulary



prototype

A quick 3-D model used  
to check a design



product

Something that is made



CAD

Computer Aided Design

# National Treasures

British board games



# Prior learning

Electrical circuits from science lessons on electricity

Working to design criteria (Y3)

## Rights of the Child/Global Goals

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