Year 7 Design & Technology– Knowledge Organiser

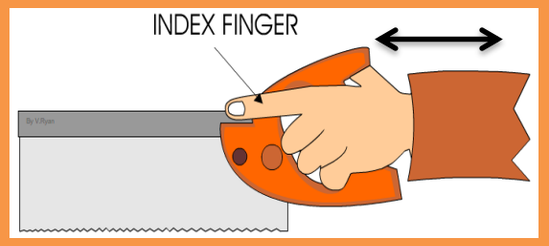
What is design and technology?

Design and technology gives young people the skills and abilities to engage positively with the designed and made world and to harness the benefits of technology. They learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including digital technologies, to improve the world around them.

Practical: - Booklets in the middle of the table. Hair tied back. Wear an apron. Stools stacked in four.

Equipment: Pencil, ruler, scissors, glue stick, hole punch, pliers, Tenon saw, bench hook, hot glue gun, file, brush.

How to use Tenon saw



1. The saw has to be held in the hand carefully.
2. The index finger must point in the direction of sawing and it also helps to support the whole saw as it moves forward.
3. The saw must not move from side to side or it will jam in the wood making sawing difficult.

Budget

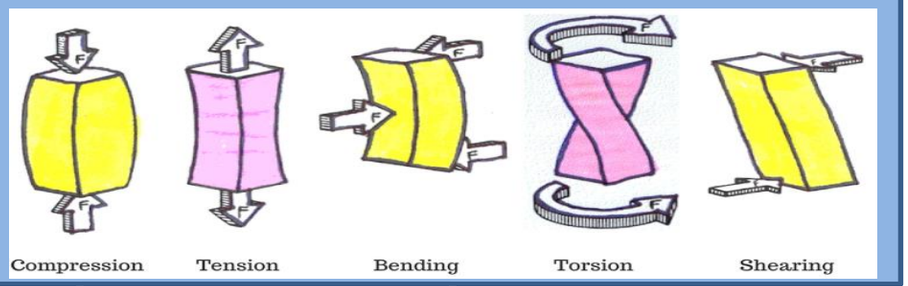
BUILDING MATERIALS
2 A4 sheets of card
Wire – 1m
600mm length of MDF x2
Glue stick
Additional BUILDING MATERIALS can be bought 100,000 fund

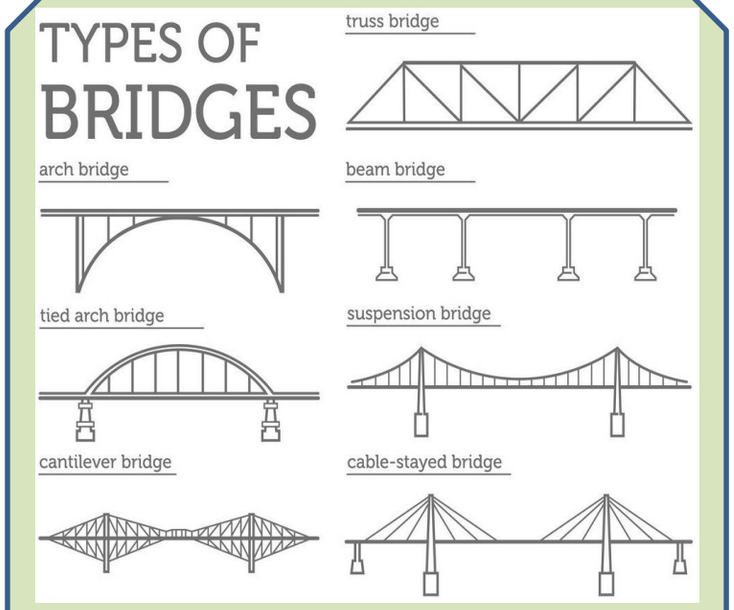
A4 sheets of card	**£10,000**
Wire – 200mm	**£3,000**
Or x5	**£10,000**
600mm length of MDF	**£25,000**
Tape 300mm	**£3,000**

Planning

Part	Draw the part of the bridge you will making.	Tools needed	Quantity	Time (mins)
1				
2				
3				

Forces on structures





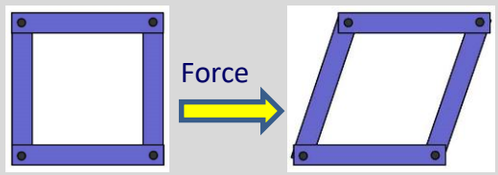
Good Practice for cleaning up.

1. Work together as a team.
2. Throw big off cuts into the bin.
3. Brush sawdust slowly to the floor.
4. Put tools into the toolbox.
5. Any tools taken from the tool cupboard to be replaced.
6. Ask the teacher to check equipment before putting away.
7. Collect your stools.
8. Hang up the aprons
9. Use a dishcloth to clean the sink, bowl, area around the sink and work area.

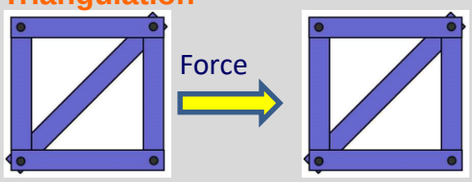
Triangulation

Unstable structures can sometimes be made more rigid by adding triangles to the shape.

No triangulation



Triangulation

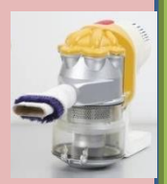


Practical products

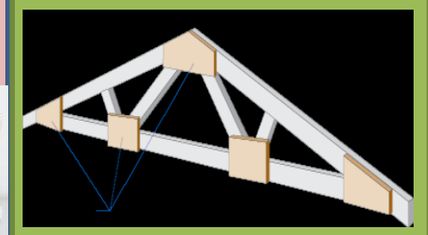
M**ock-up**, is a scale or full-size model of a design or device, used for teaching, demonstration, design evaluation and promotion.

A **prototype** is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from.

Model, a three-dimensional representation of a person or thing, or of a proposed structure, typically on a smaller scale than the original.



Gusset plate



A metal plate used to strengthen and support a structure.

Structures

Shell Structure
A structure made of a sheet of material.

Framed Structure
These have interlinked bars and struts which create a framework of parts.

Wider thinking / further reading: https://www.stem.org.uk/home-learning/secondary-design-technology

Year 7 Food – Knowledge Organiser

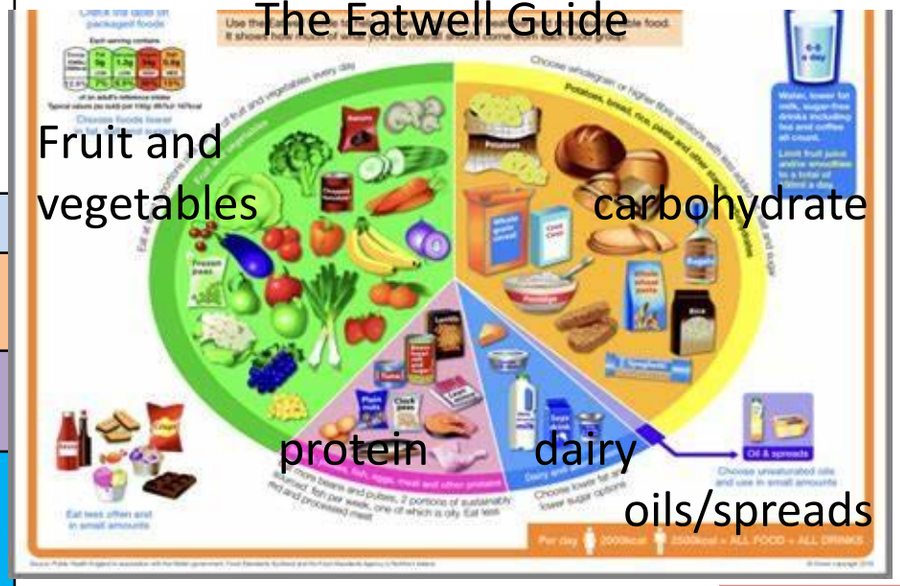
Clean hands. Hair tied back. Wear an apron. Wear blue plasters. Don't cough/sneeze over food. Use the bridge and claw grip methods for cutting/chopping.

What are Nutrients?

Nutrients are the building blocks that make up food and have specific and important roles to play in the body. Some nutrients provide energy while others are essential for growth and maintenance of the body.

Macro Nutrient	Role in the body	Food Example
Carbohydrate	The main source of energy for the body.	Bread, rice, pasta, potatoes
Protein	Provides the body with growth and repair.	Meat, poultry, beans, eggs, lentils, tofu, fish
Fat	Provides the body with insulation and a small amount protects vital organs. Provides essential fatty acids for the body.	Butter, oil, cheese, cream, nuts, oily fish, crisps

The Eatwell Guide



Weighing and Measuring

For good results in most recipes, accurate weighing and measuring is essential. When you are baking with flour, sugar and liquids, you must measure accurately or your cooking will be spoiled. If you weigh out too much sugar or too little raising agent, your cakes will not rise or you could spoil the taste and/or texture.

Food can be weighed in **Grams (g)** and there are **1000g** in a **Kilogram (kg)**.

Liquid is measured in **Millilitres (ml)** or **litres. 1000 Millilitres in a litre**

8 tips for healthy eating

1) Base your meals on starchy foods
2) Eat lots of fruit and vegetables
3) Eat more fish
4) Cut down on saturated fat and sugar
5) Eat less salt
6) Get active and be a healthy weight
7) Drink plenty of water
8) Don't skip breakfast

How do I use weighing scales?

1. Put bowl on scales.
2. Set to zero.
3. Carefully and slowly, add ingredients.

Sources of Food

Ingredients can be frown, gathered, caught, reared or made / manufactured.

This aspect of food is known as **FOOD PROVENANCE.**

Why do we need to know this?
How food is produced has an impact on its quality, its nutritional properties, the environmental, as well as its cost.
The general rule is **'the closer to its original form, the better the food is for us'.**

Cake Making methods:

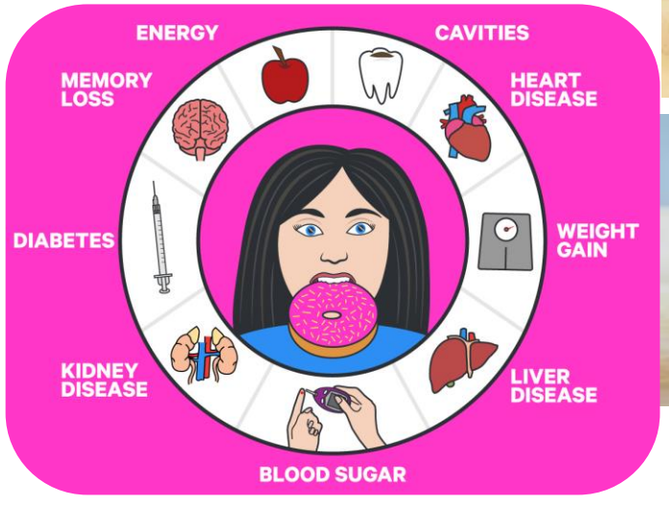
Rubbing in = Scones.
Creaming – Traditional and All-in-one = Cupcakes.
Melting = Flapjacks
Whisking = Swiss Roll
The main ingredients in cake making are fat, sugar, flour and eggs. All methods use a raising agent and often a liquid such as milk.

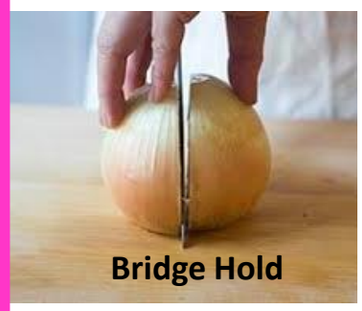
Good Practice for washing and drying up:

1. Use hot soapy water.
2. Use a dish cloth or washing up brush.
3. Rinse off bubbles.
4. Leave to drain.
5. Dry with a clean dry tea towel.
6. Check – make sure all food has been removed; ensure it is completely dry on top, bottom & inside.
7. Ask the teacher to check equipment before putting away.
8. Empty the bowl – rinse to remove the bubbles.
9. Use fingers to unblock any food from the plughole.
10. Use a dishcloth to clean the sink, bowl, area around the sink and work area.
11. Leave your work area dry.

4C's in relation to Personal Hygiene

Clothing
Clean Hands
Cover Hair (or put in a bobble)
Cover Cuts

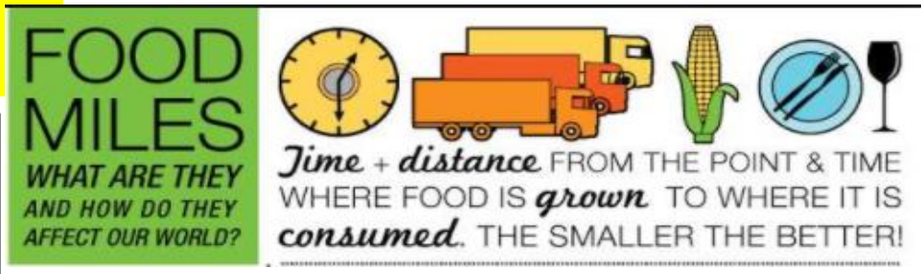




Knife safety rules

- Store in the knife block (RED Tray).
- Carry by the handle, at your side pointing downwards.
- Never run with a knife.
- A sharp knife is a safe knife.
- Never leave in the washing up bowl.
- When cutting; eyes on your blade.
- Always cut away from yourself.
- Never grab a falling knife.
- Clean knives safely.
- Only cut on a chopping board.

Equipment: Weighing scales, knife, chopping board, saucepan, wooden spoon, tablespoon, teaspoon, mixing bowl, grater, muffin tray, cooling rack, peeler.



Wider thinking / further reading: www.foodafactoflife.org.uk