D&T Year 7 -Moving Toy Project - Using Hand Tools and D&T Machines safely and accurately

Key Concepts – Core skills I am learning this half term

- Learn about types of wood like softwood and hardwood.
- I will design and develop a range of ideas for the moving toy.
- Learn to produce a template out of card to be used on wood for batch production.
- Learn to use hand tools and machine tools safely and accurately.
- Learn to measure and mark on wood.
- Learn about Concentric and Eccentric circles.
- Learn how to produce a round wheel from a square block of Pine wood.
- I will assemble all the parts together to produce a moving toy to take home.

Vocabulary	
Marking Out	Measure in mm using a pencil and a steel rule for accuracy.
Try Square	A try-square will allow you draw ay 90 degrees against a straight piece of material.
Drilling holes	Different drills and drill bits allow you to drill holes into different types of materials.
Dowel	A solid cylindrical rod, usually made from wood, plastic, or metal.
Orthographic	Front, plan and side view of a three dimensional object.
Isometric	A drawing representing a 3D shape using 30 degree angles.
Sustainability	A natural resource material that can be reproduced.
Sanding belt	Sand paper rotates continually to remove excess.
Steel rule	A metal ruler that measures directly from the end point.

Hand tools

Coping saw is used to cut rounded and intricate shapes with accuracy. The coping saw blade has the teeth pointing towards the handle, therefore, cuts on the pull stroke.

Tenon Saw has a metal blade that is used to cut wood, it does not cut metal. It is used for straight cuts that do not go deep into the wood.

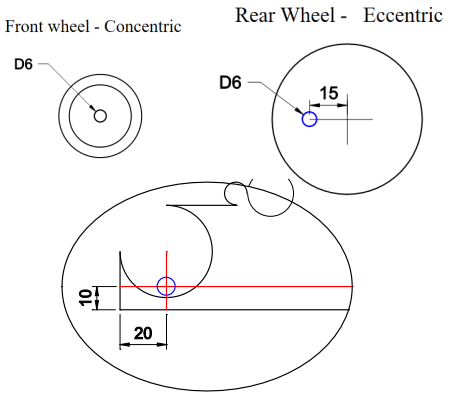
Hand File is a tool used to remove fine amounts of material. Made of a steel bar of rectangular, square, triangular, or round cross-section, with a wooden or plastic handle.

Hand drill is a tool fitted with a cutting tool attachment or driving tool attachment, usually a drill bit or driver bit, used for boring holes in various materials or fastening various materials together.

Numeracy: Mechanism Parts

Concentric circles have the same centre point.

Eccentric circles although being within each other have different centre points



Reading dimensions and marking them out. 1cm = 10 mm. If there are no units on the drawing, it is mm by default.

Types of Wood

Softwoods come from **coniferous** trees. (they do not loose their leaves)
Softwoods have **needles** instead of **leaves**.
Softwoods grow **faster** than **hardwoods** this makes them cheaper. Trees grow tall and straight which makes it easier for the **manufacturer** to cut long straight planks of wood.

Hardwoods come from deciduous or **broad-leafed** trees. They are generally **slow** growing which tends to make them harder and more **expensive.**
Not all hardwoods are hard, **Balsa** which is very soft and is often used for model planes.

Pine is a softwood which is a pale yellow colour. It is light weight, straight grained and fairly easy to work with.
MDF is a manufactured board made from particles of wood, resin and wax. Due to the non-directional grain, MDF provides a good all-round gluing surface. Cheap sheet material in many thicknesses.
Plywood is made from veneers of timber with each grain layer being at right angles to each other and bonded together by resin and pressure. This makes a very strong manufactured board.

Some keywords/questions to use:
Aesthetics – How it looks, its colour, shape [FORM] patterns, textures. If something is 'aesthetically pleasing' it looks nice!
Ergonomics – How comfortable is it to hold or use? Does it 'fit' the user well?
Function - How well do you think it works? Why do you think this?
Target Users - Who do you think the users are and why? Is the toy suitable?
Environment – Where would the toy be used do you think?

Scales of Production

One off: when you make a unique item
Batch: when you make a few/set amount
Mass: when you make thousands
Continuous: open ended production

Spellings

- Grain
- Template
- Specification
- Ergonomics
- Aesthetics
- Function
- Annotation
- Manufactured Board
- Concentric
- Eccentric
- Dowel rod
- Scale

Y7 FP&N 1 About Food

Week 1. H&S Why we need food
Week 2. **Practical:** Fruit salad
Week 3. Where food comes from
Week 4. **Practical:** Couscous salad
Week 5. Seasonal food. Assessment
Week 6. **Practical:** Pitta pizza
Week 7. International food

What influence does seasonality have on our food supply?

- In non-tropical regions, plants only crop for a limited duration at a specific time.
- This means that produce that is harvested at their cropping time are only available for a limited time.
- Harvested food crops need to be stored, processed and preserved so that they can be eaten outside their cropping time.
- In any seasonal climate, crops are harvested at different times – most are harvested in late summer and autumn. Not all – some are harvested before or after.

Fruit salad Ingredients:

- 1 apple
- 1 banana
- 1 orange
- Optional: Mango, grapes, strawberries, kiwi fruit, peach or nectarine.
- Small juice box

Airtight container to take fruit salad home.

Key words:

- Bacteria
- Pathogenic
- Hygiene
- Survival
- Food chains
- Carbon cycle
- Provenance
- Bacteria
- Pathogenic
- Hygiene
- Survival
- Bacteria
- Pathogenic
- Hygiene
- Survival
- Cuisine
- Season
- Availability
- Food miles
- Variety
- Germinate

Home learning:

- Why we eat food.
- Equipment table.
- Investigation into food miles.
- How food is cooked.
- The advantages of buying and eating locally grown food.
- World cuisine investigation

Seasonal Food

Food that is caught

Fish and shellfish such as mackerel, haddock, mussels, scallops and salmon can be caught in the seas around the UK.

Food that is reared

- Cows, sheep and goats and for meat and milk.
- Pigs for meat
- Chicken (and other fowl) for meat and eggs

Food that is harvested

Fruit and vegetables such as apples, potatoes, carrots, lettuce and sprouts, and soft fruit such as raspberries and strawberries, are grown in the UK, because they are suited to the soil and climate.

Key concepts:

Food chains: A series of organisms each dependent on the next as a source of food.

The carbon cycle: Carbon is one of the main elements that make up our foods. One of the main ways that plants accumulate (gather) the raw materials to make new tissues (that we eat) is through the carbon cycle.
Using energy from the sun, carbon from the atmosphere, and decomposing organic matter from the ground – plants grow and build new materials.

Food provenance means knowing: Where food is grown, caught or reared, how it is produced, how it is transported.

International food: Food from different parts of the world are influenced by different climates, culture and traditions. Easier travel, migration and communication mean that we can easily learn about and experience food from all over the world.

Couscous salad

Necessary ingredients:

- 100grams couscous
- 1 veg or chicken stock cube
- 1 small pepper
- 2 medium tomatoes
- 1 small onion or spring onions
- 1 small chilli

Optional ingredients:

- Small can of sweetcorn
- 50grams feta cheese
- Fresh green herbs – parsley, coriander, chives
- 3 – 4 dried apricots

Airtight container to take fruit salad home

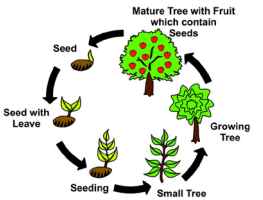
Why do we need to eat food?

- To give us energy
- To keep us warm
- Allow us to grow
- To provide us with all the nutrients our bodies need
- To keep us healthy
- Encourage us to socialise or spend time with others
- It is nice!

Safety Rules:

1. Always wash your hands in hot soapy water before starting practical work.
2. Wear an apron and tie long hair back.
3. Keep all perishable ingredients and prepared food in the refrigerator.
4. Wash all equipment. Work surfaces, the sinks and the top of the cooker when you have finished cooing.
5. Exercise caution when using, carrying and storing sharp knives.

PLANT Life Cycle



Pitta pizza

Necessary ingredients:

- 4 pitta breads
- 1 small onion
- 1 small tin of tomatoes
- 1 tbsp tomato puree
- 1 clove garlic
- 70g grated cheese – cheddar, mozzarella
- ***Optional ingredients:*** pepperoni, cooked ham, pineapple, mushrooms

Airtight container to take fruit salad home

D&T Year 7 Hand Stitching Techniques – Pencil Case

Vocabulary
Embroidery
Thread
Needle
Secure
Aesthetics
Testing
Pattern
Decorative stitches
Biodegradable
Organic
Woven Fabric
Bonded Fabric
Knitted Fabric
Synthetic Fibres
Natural Fibres
Filament Fibre
Staple Fibre
Repair
Button
Consistent
Accurately
Inspiration
Presentation
Creativity
Embellishment

Key Concepts – Core skills I am learning this half term

Learning how to sew - Threading the needle and securing the thread to create pencil case design work on fabric.

Embroidery - is the craft of decorating fabric using a needle to apply thread or yarn. Embroidery may also incorporate other materials such as pearls, beads, and sequins. In modern days, embroidery is usually seen on caps, hats, coats, blankets, shirts, denim, dresses, and sports wear. Embroidery is available with a wide variety of thread or yarn colour.

Sew a button to fabric – you will learn how to sew a button to fabric, this will give you the skill to always be able to repair your own clothes later in life.

Stitching sequins to fabric – by knowing how to stitch on sequins on to fabric (French knot) you will be able apply decoration to any clothing you might want to decorate with a pattern.

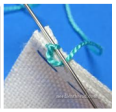
Hand stitching is a construction method – when we sew on buttons and do a hem. Decorative stitching is called Embroidery

Techniques

How to thread a needle

How to tie a knot

Securing the thread

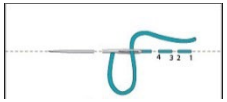


After threading the needle, before sewing, tie a knot at the end of the thread to stop the stitches coming out. The thread may be double or single – one long tail, one short tail.

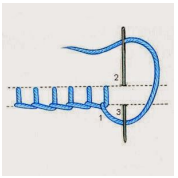
When you have finished stitching, tie a knot at the back of your work.

Type of Stitches

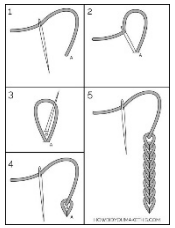
Running stitch



Blanket stitch

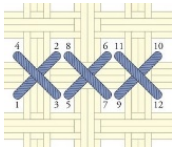


Chain stitch



Back stitch

Cross stitch



Health & Safety

Equipment:

Do not stick pins or needles in skin
Do not point or wave around scissors
Do not point or wave around unpicker
Do not use dyes or chemicals with permission, training and supervision

General:

Never run in the classroom
Never sit on a table
Do not act dangerously
Never distract others completing practical work
Follow instructions given by teacher
No shouting

Properties and characteristics of fibres and fabrics.

Fabrics and fibres behave in different ways this can be good or bad thing, the way they behave is known as properties and characteristics.

Good properties- strong, absorbent, comfortable, hard wearing, drapes well, does not crease, cheap, environmentally friendly.

Bad properties- expensive, creases easily, shrinks, burns easily, bobbles, itchy, weak when wet, takes a long time to dry.

Properties and use of natural fibres

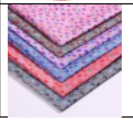
Natural Fibre	Properties	Uses
Cotton	Strong, absorbent, cool to wear, hard wearing, creases easily, easy to care for	Clothing, soft furnishings
Wool	Warm, absorbent,	Warm outer wear e.g. jumpers, carpets, blankets, soft furnishings
Silk	Comfortable to wear, soft, absorbent, expensive, natural sheen	Luxury clothing and furnishing

Fabric construction

Woven

Knitted

Bonded

Key word	Description	Image
Fibre	Fine hair like structure	
Yarn	Fibres which are twisted together to create a yarn/ thread	
Fabric	Cloth made from fibres or yarns	

- Natural fibres: fibres from plant and animal sources
- Synthetic fibres: fibres manufactured from oil-based chemicals
- Blended/mixed fabrics: fabrics that contain two or more fibres