

# D&T Year 7 Hand Stitching Techniques – Card Project



Vocabulary
Embroidery
Applique
Reflective
Yarn
Aesthetics
Testing
Pattern
Decorative stitches
Biodegradable
Weave
Buttons
Texture
Repair
Organic
Tailored
Natural Fibres
Patchwork
Accurately
Consistent
Inspiration
Neat
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 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 you will be able apply decoration to any clothing you might want to decorate with a pattern.

**Hand stitching is constructional – when we sew on buttons and hemming. Decorative stitching is called Embroidery**

## Techniques

### How to tie a knot



### How to thread a needle



### 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.

Health and safety	
<b>Iron:</b> NO talking whilst using iron No distracting others when using iron No touching base of iron either when on or off Do not use iron around water Unplug iron when not in use Stand iron on platform when not in use Do not walk around with the iron	<b>Sewing Machine:</b> No talking whilst using sewing machine No distracting others when using sewing machine Sew at a safe speed Turn off machine if a problem occurs Never try to mend machine Never use sewing machine unless supervised by a teacher
<b>Equipment:</b> 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 without permission	<b>General:</b> Do not run in classroom Do not act dangerously 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.

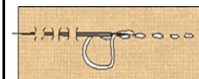
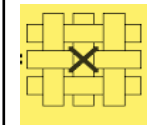
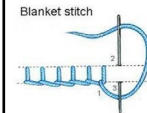
**Good properties**- strong, absorbent, comfortable, hard wearing, drapes well, does not crease, cheap, environmentally friendly.

**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

### Type of Stitches



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

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

## 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 at 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.

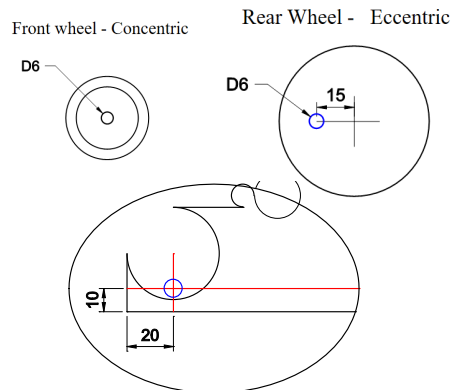
**Hand File** is a tool used to remove fine amounts of material. Made of a steel bar of rectangular, square, triangular, or round cross-section, with a wooden or plastic handle.

**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 lose 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

## Food & Nutrition Diet & Good Health



**Diet:** What you consume (food & drink) on a daily basis.  
\*everyone is on a diet! It doesn't mean losing weight

**Balanced Diet:** A diet containing all of the correct nutrients in the correct amount, contributing to good health.

### Government Guidelines

1. Base your meals on starchy carbohydrates
2. Eat lots of fruit and vegetables
3. Eat more fish, including a portion of oily fish
4. Cut down on saturated fat and sugars
5. Eat less salt
6. Get active and be a healthy weight
7. Don't get thirsty
8. Don't skip breakfast



### Eatwell Guide

**Fruit & Vegetables** (Vitamins & Minerals)  
5 a day. (a variety).  
Fresh, frozen, tinned, dried & juiced all count - fruit juice/ smoothies should be limited to 150ml per day in total & dried fruit should be limited to 1 tablespoon per day.  
1 portion = 80g  
Tips: grate or blend vegetables into a Bolognese. Add fruit to cereal. Swap potato chips for sweet potato.



### Traffic Light Labelling

To help consumers see nutrition at a glance & compare products. Shows amounts per 100g & per portion. Colour-coded. (not for energy due to varying requirements)

**Percentage Reference Intake (%RI)**  
How much of the daily intake is in a portion. i.e. 50% RI of salt means that the serving contains 1/2 the daily intake for salt & so try to choose options lower in salt for the rest of the day.  
Shows energy, sugar, fat, sat. fat & salt

Each serving (150g) contains

Energy	1046kJ / 250kcal	Fat	3.0g	Saturates	1.3g	Sugars	34g	Salt	0.9g
		LOW	LOW	HIGH	MED				
		13%	4%	7%	38%	15%			

recommended daily intake of nutrients

(per 100g)	High	Medium	Low
Sugar	>15g	5-15g	<5g
Fat	>20g	3-20g	<3g
Sat. fat	>5g	1.5-5g	<1.5g
Salt	>1.5g	0.3-1.5g	<0.3g

**Foods to avoid:** High in the 3 'S's. Salt, Sugar, Saturated fat  
Use food labels to help you choose foods lower the 3 'S's  
**Salt:** Adults - <6g per day & even less for children. High salt = increased risk of developing high blood pressure = greater risk of stroke & heart disease.  
**Sugar:** Too much sugar, especially between meals, can increase risk of tooth decay and will add extra calories so cut down on cereal, cakes, biscuits and sugary drinks.  
**Saturated fat:** Foods high in saturated fat can lead to high blood cholesterol, which narrows arteries and leads to coronary heart disease. Usually from animal sources i.e. Animal fat, butter, cheese.

**Beans, pulses, fish, eggs, meat & other protein** (protein)  
Animal sources - meat such as chicken, pork, beef., eggs And fish such as salmon, tuna, cod. Plant sources - beans, lentils, pulses. Plant sources have less saturated fat and are more environmentally friendly. Aim for >2 portions of sustainably sourced fish per week, including a portion of oily fish (a portion = 140g). Oily fish - salmon, sardines, mackerel & trout, are sources of vitamin D & omega 3.

**Hydration** Aim for 6-8 glasses of fluid per day. Water is the best choice as it hydrates you without adding any extra calories to your daily intake. Unsweetened tea and coffee, sugar free drinks and low fat milk all count

**Bread, rice, potatoes, rice, paste & other carbohydrates** (carbohydrates and fibre if wholemeal)  
Choose wholegrain or higher fibre versions with less added fat, salt and sugar.

**Oils and spreads** (Unsaturated fat)  
This includes olive, vegetable & rapeseed oil, and margarine which is oil hardened to a solid by pumping hydrogen through it. This is the healthier fat. It lowers blood cholesterol rather than raising it like saturated fat. It is however still very high in energy (kcal) so it is a very small proportion.

**Energy requirements** (kcal)  
Shows the average energy requirements for adult males and females. Females -2000 kcal and males - 2500kcal. If energy intake is greater than energy expenditure (i.e. From exercise), = weight gain. These are only averages - depends on age, gender, activity level & body size.

**Dairy & Alternatives** (Calcium)  
Dairy sources come from milk. Cheese, yogurt and cream are made from milk so are also included.  
Non dairy alternatives include milk and products made from soya, coconut, almond etc. These are not made from milk and are suitable for lactose intolerant and are lower in saturated fat. Food in this group can be high in saturated fat and sugar (i.e. Cheese, whole milk, sweetened yogurts) so choose low fat & sugar versions

**Composite foods**  
A dish or meal with more than 1 kind of food component in them. E.g. pizzas, pies, lasagne and sandwiches are all made with ingredients from more than one food group.

### Diet Related Health Problems

**Obesity** - When the body has too much fat.  
BMI (Body Mass Index) is used to calculate body mass  
BMI of 18.5 - 25 is normal, 30+ is obese.  
Cause: energy in > energy out; Eating too many high energy foods (fat & sugar); Low exercise levels.  
Problems: High blood pressure and cholesterol = heart problems; Increased risk of type 2 diabetes & cancer  
Breathing difficulties, fatigue & low self esteem.

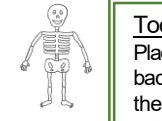


**Diabetes** - Blood glucose levels can't be controlled.  
Insulin helps glucose be absorbed by the body. The body produces more insulin when blood glucose levels are too high in the blood.  
Type 2 Diabetes - the body can't produce insulin so blood sugar levels get too high.

**Coronary Heart Disease**  
Arteries clogged up with fatty cholesterol.  
Cause: saturated fats, low physical activity, smoking & high blood pressure.  
Health Problems: Blood cannot pass through arteries properly which causes heart to pump faster and harder, causing chest pains (angina); blood flow and oxygen to the heart gets blocked which causes heart attacks.



**Bone Health**  
Rickets (soft and weak bones in children)  
Cause: lack of vitamin D or calcium.  
Leads to bone pain, deformed growth (i.e. Bowed legs) and increased risk of fractures.  
Osteoporosis (bone disease, brittle bones in elderly)



**Anaemia**  
Caused by a lack of iron. Iron helps make red blood cells which carry oxygen round the body.  
People who are anaemic lack red blood cells  
Cause: not enough iron in the diet (i.e. Red meat, green leafy veg) women who lose blood through menstruation; pregnant women who pass their iron to their baby.  
Health problems: fatigue (tiredness); pale skin



**Tooth Decay**  
Plaque is a substance which contains bacteria. This builds up from food in the mouth. Bacteria feed on sugars and form acids which eat away at tooth enamel and cause tooth decay (caries/cavities) Cause: high sugar foods.



**Key Words**

- Sustainably sourced** - production of food, plant or animal products using farming techniques that protect the environment. i.e. Fishing that doesn't reduce the species' population.
- Lactose intolerant** - a common digestive problem where the body is unable to digest lactose, a type of sugar mainly found in milk and dairy product
- Cholesterol** - a fatty substance. Too much cholesterol in a person's blood can cause heart disease.
- Blood pressure** - a measure of the force that your heart uses to pump blood around your body.
- Kcal** - unit to measure energy.
- Obesity** - a condition where the body accumulates too much fat
- BMI** - Body Mass Index - a measure of body mass. 18.5-25 = normal weight, 30+ = obese
- Diabetes** - a condition where blood glucose levels stay too high as insulin isn't produced by the body
- Insulin** - produced by the body to control blood sugar levels
- Coronary heart disease** - caused by a build up of cholesterol in the arteries, restricting blood flow
- Osteoporosis** - a bone disease where bones weaken and become brittle
- Rickets** - a condition in children where bones are soft, weak and deformed.
- Anaemia** - condition where there are a lack of red blood cells
- Plaque** - a substance on teeth which reacts with sugar and causes tooth decay.

### Modifying meals, recipes & diets

**Reduce salt**  
Less processed meat (i.e. ham, bacon, sausage)  
Less ready-made foods (pasta sauces in jars, ketchup) - make your own  
Be cautious of naturally salty foods - cheese, olives, soy sauce  
Use other seasoning such as herbs and spices  
Foods can be preserved in brine (salted water). Choose non brine alternative (i.e. Tuna)  
Use low salt stock cubes



**Reduce saturated fat**  
Swap butter for low fat spreads made from unsaturated oils  
Eat lean cuts of meat or trim off the visible fat  
Grill, bake, steam instead of frying  
Allow fat to drain away when cooking  
Swap high fat snacks like muffins, pastries for lower fat alternatives such as fruit loaf or rice cakes with houmous.



**Reduce sugar**  
Often listed as sucrose, glucose etc. Look out for 'ose' ending.  
Use less sugary sauces (ketchup, beans, BBQ)  
Swap fizzy drinks for dilute juice/water & lemon  
Avoid sugary breakfast cereals.  
Reduce sugar in hot drinks & baking.  
Sweeten plain yogurt with fruit  
Swap sugar for natural sweetener (not artificial)  
Choose tinned fruit in natural juices rather than in syrup



**Increase fibre**  
Swap white starchy foods such as pasta, rice, bread, flour) for wholemeal  
Use more lentils, beans in meals  
Keep skin on potatoes  
Add more fruit and vegetables to the diet.  
Keep frozen vegetables in the freezer so they are always available  
Choose high fibre cereals



- Recipes or dishes you will make in Year 7:**
1. Fruit salad
  2. Cous cous salad
  3. Pitta pizza
  4. Chicken fajita
  5. Apple crumble

- Practical Skills you will learn and use:**
- ❖ Knife skills
  - ❖ Measuring
  - ❖ Using the cooker
  - ❖ Washing up



**Food Hygiene is very important in the Food room. You will learn about:**

- What causes food poisoning
- How to prevent food poisoning
- High risk foods - foods that are most likely to cause food poisoning

