DT Knowledge Organisers

Spring One - 2025

Year 1

No DT this term.

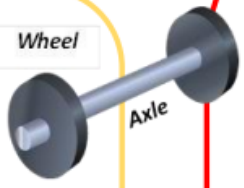
Year 2

Hanslope Primary School
Design Technology Knowledge Organiser

Year 2: Mechanisms (wheels and axles)

Overview:

Mechanisms are the parts that make something work.



-Mechanisms are all around us! Most objects that help us in our lives are made up of different mechanisms.

Wheels and Axles are mechanisms that help things to move.

-Wheels are circular objects that roll on the ground, helping vehicles and other objects to easily move.

-Axles are rods that help wheels to rotate. The wheel can either rotate freely on the axle, or be attached to (and turn with) the axle.

How does this link to my future learning?

- **Year 3** Mechanisms (Levers and Linkages)

National Curriculum Links:

- Design, make and evaluate products
- Technical knowledge: understand and use mechanical systems in their products [for example, gears, pulleys]

What key vocabulary will I learn?

Mechanism, wheel, axis, axle holder, friction, dowel, chassis, design, make, evaluate.

What steps will I follow to create my final product?

Designing

Chassis
-The chassis is the frame or base on which the vehicle is built. A chassis should be strong and rigid enough to hold the vehicle.
-The chassis should include axle holders. These designed so that the axles do not have too much friction against them.

Axle
-Consider what you will make your axle from. It needs to be strong enough to hold the wheels, and fit freely in the axle holder.

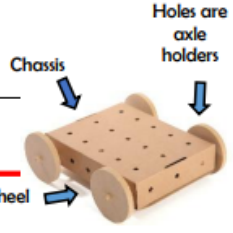
Wheel
-Consider whether your wheels will be fixed to the axle, or free.
-If fixed, they need to be firmly attached. If not, they need a stopper to prevent them from falling off.
-Some materials allow the wheel to move more freely on surfaces.

Making

-Wheels could be made from wood, card, MDF, plastic, cotton reels, or foam-covered reels.
-Axles could be made from dowels or paper sticks.

Free Axles - Fixed Wheels
-The axles move with the wheels. Loose-fitting axle-holder, tightly fixed wheels.

Fixed Axles - Free Wheels
-The axles will remain fixed to the chassis. The wheels move alone. Tight-fitting axle-holder, loose-fitting wheels.



Evaluating

-How well does your mechanism work? Does it move smoothly?
-Does it meet its purpose?
-Who would use your mechanism? What would they like about it?
-How did you stop any unwanted friction? How did this effect the mechanism?
-What else could you do to improve your mechanism?

Health and Safety

-Remove any jewelry and tie back long hair.
-Wear an apron and roll up your sleeves.
-Walk safely and calmly around the classroom/ workshop.
Keep your work area and floor area clear – keep your belongings well clear.
Follow the teacher's cutting instructions carefully.
Make sure that you are wearing the correct equipment for tasks.
If you need to move around with scissors, hold around the closed blades, facing down.
Report all spillages & clean up properly after yourself.

Year 3

Hanslope Primary School
Design Technology Knowledge Organiser

Year 3: Textiles (2D and 3D products)

Overview

Textiles are flexible materials woven from fibres

-Textiles are used to make clothing, sheets, towels, linen, carpets, rugs and wide variety of other products.

-Sewing involves the joining of different textile fabrics using a needle and thread.

-Sewers can use a range of different sewing styles to produce strong joins.

-Some stitches also create an attractive-looking seam (a line of stitching joining fabrics together). Thinking about the way a product looks is called 'aesthetics', and is highly important in textiles.

What key vocabulary will I learn?

Textiles, sew/stitch, thread, needle, applique, seam, aesthetics, running stitch, back stitch, over-sew stitch, blanket stitch.

How does this link to my future learning?

- Year 5 Textiles (combining different fabric shapes)

National Curriculum Links:

- Design, make and evaluate products
- Technical knowledge: select from and use a wide range of materials and components, including textiles.

What steps will I follow to create my final product?

Design:

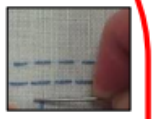
Fabrics -Different fabrics have different properties (characteristics) which make them good for different purposes. For example, some are soft and provide a cushion (e.g. felt) whilst others can be thin and lightweight (e.g. silk, cotton). This can make them easier to join/ decorate with.

Joining – There are lots of different stitches that you could use to join the fabrics together (see below). Some are easier and quicker, (e.g. running stitch) some are more secure and do not show the seam as obviously (e.g. backstitch), some help to improve certain fabrics (e.g. overstitch) and some are more aesthetically pleasing (e.g. blanket stitch).

As a part of the design process, you should be able to sketch and annotate different ideas. You should also be able to plan the main stages of making, using either a checklist, a storyboard, or a flowchart.

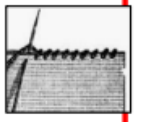
Making:

Running Stitch – This is the simplest stitch. It creates a dotted line effect. Remember to leave a space from the previous stitch.



Back Stitch – Similar to the running stitch, except that the thread doubles back so that there is no visible spacing between stitches. It is a very strong and secure stitch.

Over Sew Stitch – The over sew stitch is a good way to neaten the raw edge of fabrics. It involves sewing over the edge of the fabrics.



Blanket Stitch – Another way to reinforce the edges of thick materials. This stitch is popular as it is thought to be aesthetically-pleasing.

Evaluating:

-How does your textile look? Would your user like it? Why or why not? How could you improve the way it looks?
-Are your attached fabrics secure? How did you achieve this? Which stitch did you use? How could they be joined more securely?
-Which materials did you choose? Why? Does your product serve its purpose well? What do you like about your product? How could you improve your product?

Health and Safety

-Remove any jewelry and tie back long hair.

-Walk safely and calmly around the classroom/ workshop.

-When using a needle, keep your fingers well clear. Use a thimble where available.

-When you are not using your needle, keep it in the same safe place.

If using a sewing machine, follow staff instructions carefully.

Make sure that you are wearing the correct equipment for tasks.

If you need to move around with scissors, hold around the closed blades, facing down.

Report any accidents & clean up properly after yourself.

Year 4

No DT this term.

Year 5

No DT this term.

Year 6

Hanslope Primary School
Design Technology Knowledge Organiser

Year 6: Food celebrating culture and seasonality (including cooking and nutrition requirements for KS2)

Preparing and cooking processes.

Preparing Processes - Preparing processes are the different ways that we get food ready to be eaten.

-*Slicing*: cutting food using a knife.

-*Mixing:* to blend ingredients together, using a spoon, blender, or whisk.

-*Weighing/measuring*: to get the right amount of an ingredient, using scales, table/teaspoons

Grating: to peel a layer off something (like carrots or cheese) using a peeler or grater.

-*Serving:* making food look nice on the plate.

Cooking Processes- Cooking processes are the different ways that we heat food before it is eaten.

-Baking: to cook food in a heated oven.

-Boiling: to cook food in boiling (100°C) water.

-Frying: to cook food in a pan of heated oil.

-Grilling: to cook food by putting it under a hot grill (like a radiator in a cooker).

-Steaming: to cook using steam, normally from boiled water.

How does this link to my future learning?

- **Cooking and nutrition KS3 -** understand the source, seasonality and characteristics of a broad range of ingredients.

What key vocabulary will I learn:

Healthy & varied diet, food/meal plan, saturated fat, adding/ substituting, griddling, steaming, poaching, seasonal produce, seasonality, sustainability, health & safety.

National Curriculum Links:

- Cooking and Nutrition: understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

What will I know by the end of the unit?

Seasonality

-In the northern hemisphere, spring takes place between March and May. In the southern hemisphere, spring is September to November. Therefore, foods are in season in different places at different times of the year.

Eating Sustainably

-With modern technology, it is possible to grow and rear food out of season.

-However, growing and rearing foods out of season consumes a lot of energy, because the process takes place in artificial conditions, and needs a lot of resources, for example heat, light, water and nutrients.

-Eating sustainably is about finding the right balance between your food needs and your food choices. It helps to reduce our carbon footprint.

A Varied Diet

--In order to stay healthy, it is important that we eat a balanced diet of foods from each of the five food groups. Too much of any one food group is not healthy for us.

-You should be able to create a weekly food plan, incorporating a healthy and varied diet of foods across each day and the week.
-Your plan should apply your understanding of which foods within groups have advantages and disadvantages (e.g. 'fish has less fat than red meat' and 'use a low-fat butter alternative).

Health and Safety

-Remove any jewellery and tie back long hair. Ideally, wear a hair net.	-Wear an apron and roll up your sleeves. Tie your apron securely.	-Wash your hands with hot water and antibacterial soap, for at least 20 seconds.	Washing your hands should be done before, during and after preparing food.	Use different chopping boards and knives for raw meat & other foods. This stops bacteria spreading.	Use a food thermometer to check that food is cooked through.	Check the dates on food, and check for allergies & diet e.g. vegetarian, vegan.	Make sure that you clean up properly after yourself.