

DT Knowledge Organisers

Spring Two - 2024



Hanslope Primary School

Design Technology Knowledge Organiser

Year 1: Mechanisms: Sliders and levers

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.


Sliders and Levers are mechanisms that make things move.

-Sliders help to move things from side to side and up and down.

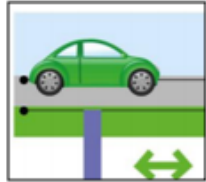
Levers are slightly more complex. They use a **fulcrum** (a fixed point around which the lever can pivot) to make things move in arc (curve).



What key vocabulary will I learn:



- Mechanism
- Slider
- Slot
- Lever
- Fulcrum
- Pivot
- Guide/ Bridge
- Design
- Make
- Evaluate



National Curriculum Links:

- Design, make and evaluate products.
- Technical knowledge: explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

How does this link to my future learning?

- Mechanisms – Wheels and axels (Year 2)

What steps will I follow to create my final product?

Designing: -Effective sliders and levers should move smoothly

-You need to think about who your product is for – what is its purpose and who is going to use it?

Sliders

-Consider where you will place the slot, and how long it will be. This will change how far your slider can slide! You also need to consider where to put your guide, so that the slider only moves where you want it to.

Levers

-Consider where you will position the fulcrum. The further it is from the object, the more that the subject at the end of your lever can move!

Making: -Sliders and levers can be made using card, lollipop sticks, or another thin, firm material.

Sliders

-Use a hole punch to as the starting point for your slot. Instead of a slot, you could attach a card strip to the back of your product.

-Guides can be made using strips of card fixed with masking tape.

Levers

-To create the hole for the fulcrum, place the card backdrop over a piece of Blu Tack and pressing a pencil through. The fulcrum can be attached using a paper fastener.

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-What else could you do to improve your mechanism?

Health and Safety

- Remove any **jewellery** 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 2

No DT this term.

Year 3

No DT this term.



Hanslope Primary School

Design Technology Knowledge Organiser

Year 4: Electrical systems (simple circuits and switches – programming and control)

Overview: Simple Circuits

Electricity is a type of energy. It is used to power lots of things

- Electricity can flow through wires and cables. It can also be stored in batteries or cells.
- Electricity can flow through circuits. A circuit is the path the electric current follows. It must have no breaks in it (a closed circuit) for electricity to flow.



The electricity flowing through a circuit is known as the current. The current can be deliberately allowed to flow or broken using a switch.

How does this link to my future learning?

- **Electrical systems (complex switches and circuits – programming monitoring and control) - (Year 6)**

What key vocabulary will I learn:

Simple Circuit	Battery/ Cell
Switch	Switch
Current	Input/ Output Device
Short Circuit	Conductor
	Insulator

National Curriculum Links:

- Design, make and evaluate products.
- Technical knowledge: understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

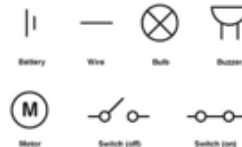
What steps will I follow to create my final product?

Designing: - You need to think about who your product is for – what is its purpose and who is going to use it?

-Consider the materials that you will use – what type of input device (e.g. battery/cell), conductor (e.g. wires) and output device (e.g. bulb) are best for your purpose and audience?

-Consider whether to create a homemade switch or use a bought switch.

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:

-In order to ensure that your circuit is closed, it is hugely important that your connections are secure.

-Connecting blocks and bulb holders are useful pieces of equipment for ensuring this.

-Twisting strands of wire and taping wire are also useful strategies for creating a secure connection.



Evaluating: -How well does your electrical system work? Does it work as planned? Does it meet its purpose? What would your audience think about your product? What would they like about it? What would they not like? What type of switch did you choose to use? Why? What are the pros and cons

Health and Safety

-Remove any jewellery and tie back long hair. Wear an apron.

-Do not put fingers or objects in outlets.

-Never use anything with a plug, wire or cord around water.

Keep metal objects away from electrical heat sources – e.g. knife away from toaster.

Never pull a plug out by its cord.

Follow electrical signs and guidance carefully.

Return all equipment to the correct zoned areas of the classroom/ workshop.

Remember that electricity can cause burns, shocks, serious injury & even death.



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Year 5: 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.

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

How does this link to my future learning?

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

Food from around the world

Seasonal Foods around the World

-It is important to remember that the seasons are different in different places over a year.

-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. Cucumbers can be naturally grown in the northern hemisphere March-June, and in the southern hemisphere October-December.

UK Seasonal Foods

Winter: Apples, Beetroot, Sprouts, Cabbage, Leeks, Mushrooms, Onions, Parsnips, Pears, Turnips.

Spring: Artichokes, Asparagus, Aubergines, New Potatoes, Rhubarb, Rocket, Spinach, Spring Greens, Spring Onions.

Summer: Blackcurrants, Broad Beans, Cherries, Chillies, Courgettes, Gooseberries, Garlic, Strawberries, Water Cress.

Autumn: Butternut Squash, Cauliflowers, Chicory, Elderberries, Marrow, Pumpkin, Wild Mushrooms, Squash.

What key vocabulary will I learn:

Healthy & Varied Diet	Food/Meal Plan	Calories	Saturated Fat	Adding/ Substituting
	Steaming	Seasonal Produce	Seasonality	Sustainability
	Poaching			



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.

Year 6

No DT this term.