DT Knowledge Organisers

Autumn Two - 2024

Year 1

Hanslope Primary School
Design Technology Knowledge Organiser

Year 1: Textiles (Templates and Joining Techniques)

Overview

Textiles are flexible materials woven from fibres.

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

-Lots of materials are considered as textiles, for example wool, silk, cotton, nylon, felt and polyester.

-Textile production is one of the largest industries in the world – huge factories make millions of textiles each year.

-However, lots of small textiles producers still exist. Many still produce textiles by hand.

What key vocabulary will I learn?

Textiles, fibre, woven, cotton, thread, needle, appliqué, template, seam, sew, design, make, evaluate.

How does this link to my future learning?

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

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:

Designers of textile products need to think about the purpose (what does it do?) and the user (who will use it?)

Materials -Different materials have different properties (characteristics) which make them good for different purposes. For example, cotton is soft, polyester is durable, and PUL is waterproof.

Templates -Templates should be used to cut around, producing accurate shapes and patterns. They can be made out of card, paper, cardboard and other materials.

Joining – There are lots of different ways of joining fabrics together (see below). Some joins are quicker (e.g. stapling, safety pin) whilst some are more secure (e.g. sewing, gluing). Some joining techniques are easier to hide.

Making:

-Read your plan carefully. Make sure that you are properly prepared.
-Use masking tape or pins to attach your template, or use chalk/pastel to draw around it. If you are sewing, think about the type of stitch you will use (e.g. running stitch) in order to create your seam.
-Think about finishing techniques – for example glitter/ raised textile paints, adding sequins and shiny fabrics, or using fabric crayons.
-Remember your purpose – does it work?

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? How could they be joined more securely?
-Which materials did you choose? Why? 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 2

No DT this term.

Year 3

No DT this term.

Year 4

Hanslope Primary School
Design Technology Knowledge Organiser

Year 4 - Food - healthy and varied diet (including cooking and nutrition requirements for KS2)

Overview:

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 know that within each group, some foods have different benefits (e.g. fish has less fat than red meat).

-You should be able to design your own plate - think about foods that go well together, and promote a balanced diet.

-You should already know that some of our food is produced locally, whilst some may come from elsewhere in the world. Sometimes, foods can be easily made in lots of different countries. However, sometimes the conditions in a country make it perfect for producing certain foods.

-When we trade in foods from another country it is called **importing**. When we trade out foods to another country It is called **exporting**.

What key vocabulary will I learn?

Food group, balanced diet, healthy plate, slicing, measuring, grating, serving, boiling, frying, health & safety, produced, import, export.

National Curriculum Links:

Use the principles of a healthy and varied diet to prepare dishes

Understand where food comes from.

To know whether food is grown, caught or raised.

In order for us to get eggs, we need to raise chickens. Eggs are laid by female chickens.

In order for us to get tomatoes, we need to grow a tomato plant.

In order for us to have lobster, we have to catch the lobster.

How does this link to my future learning?

Year 5 - Food celebrating culture and seasonality (including cooking and nutrition requirements for KS2)

What steps will I follow to create my final product?

- Research where food comes from and the different sources – grown, caught or raised?
- Discuss the different food groups and how we need to balance them.
- Taste the different foods and which ones we like best
- Prepare the food using different utensils.
- Cook the food in different forms.

Health and Safety

-Remove any jewelry and tie back long hair.

-Wear an apron and roll up your sleeves.

-Wash your hands with hot water and antibacterial soap.

Washing your hands should be done before, during and after preparing food.

Use different chopping boards and knives for raw meat & other foods.

Check that food is cooked right the way through.

Check the dates on food, and check for allergies of those eating.

Make sure that you clean up properly after yourself.

Year 5

Hanslope Primary School
Design Technology Knowledge Organiser

Year 5: Mechanisms (pulleys or gears)

Overview:

Mechanisms are the parts that make something work.

-Mechanisms are all around us. A set of related mechanisms used to create movement is called a mechanical system.

-Gears are toothed wheels (cogs) that lock together and turn one another. When one gear is turned the other turns as well.

The wheels are usually different sizes, so that one gear speeds up to slow down the next gear. They therefore increase the power of a turning force.

-Pulleys are like gears, but the wheels do not lock together. The wheels are instead joined together by a drive belt. Pulleys can be used to affect the speed, direction or force of a movement.

National Curriculum Links:

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

What key vocabulary will I learn?

Mechanism, mechanical system, gear, pulley, lever, cogs, force, driver, follower, motor spindle.

What steps will I follow to create my final product?

Designing

Gears and Pulleys

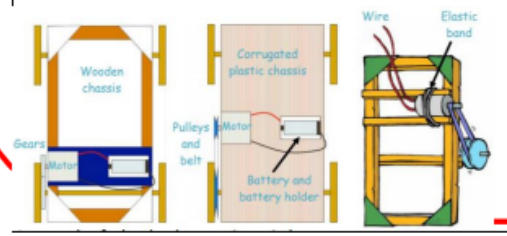
-The product can run using either a gear or pulley mechanical system.
-In either case, you need to understand the ratio (how often larger wheels turn in relation to smaller pulleys). With gears, this can be done by counting the number of teeth (see below).

Num. Teeth	Rotation (spins)
8 and 16	2:1
8 and 24	3:1
24 and 24	1:1
8 and 40	5:1

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 for the vehicle to move, it is essential that the mechanical system is planned effectively, and include an input, a process, and an output.
-e.g. Batteries hold stored power, accessed by using a switch (input) to enable a motor to set in motion the motor spindle Motor spindles can attach the motor to the gears/ pulley system (process)., which in turn propels the axles and/or wheels to move the vehicle forwards/ backwards (output).



Evaluating

-How well does your mechanism work? Does it move smoothly?
-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 problems did you face in constructing your mechanical system? What changes did you need to make?
What could you still improve about your product? How would you do things differently next time?

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 6

No DT this term.