



Design Technology Medium Term Planning

Year 4



Construction	Mechanisms	Sewing/ textiles	Cooking and nutrition	Woodwork
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Topic	Knowledge - Children will learn	Children will be able to...	Prior Knowledge	Key Vocabulary
Treasure	To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. To evaluate their ideas	Project objective: I can create a working metal detector to test items to see if they are/ not magnetic. Gustave Trouvé – invented Metal detector - To explore what items need electricity. To explore using a metal detector on the KS2 field. To explore making a circuit to check the buzzer works. To draw a diagram of the electricity circuit needed to make the buzzer beep when the metal object touches the sensor. - To design and draw what the metal detector will look like and label with annotations of materials, size and equipment needed to create it. To plan my design and consider how to implement it. To design a product that is fit for purpose. To develop a plan based on design criteria – (buzzer, wires, bulb,	Children will recall vocabulary used for electricity. Children will think of an idea and plan what it will look like. Children can choose tools and materials and explain why they have chosen to use them. Children can explain what went well with their design to write a detailed evaluation.	Innovative, functional, appealing, practical, cutting, shaping, joining, finishing, accurately, products, improve, design, circuit, sensor, adapt, change, measure, improvement, create, evaluation, purpose, appearance, detector, final, draft, two-dimensional, quality, aesthetics, function,

and products against their own design criteria and consider the views of others to improve their work.

battery)

- To make a functioning metal detector.

To select from and use a wide range of tools and equipment.

To create a circuit using appropriate materials.

- To test the product and evaluate against a set of given criteria.

To reflect and evaluate plans independently and with peers.

To predict and solve arising problems.

To explain what went well with my work.

To evaluate my work.

To explain what went well with my work — consider effectiveness and fitness for purpose.

Explain what was easy and what was hard.

To reflect and use this knowledge for future projects



<https://www.youtube.com/watch?v=hDVQnik5ixA>

ergonomics, usability, environment and safety.

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Frozen Kingdom	To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. To look at designs of sledges and use this to design and plan their own. To look at their original work and adapt their ideas as necessary.	Project objective: I can make a sledge which holds the weight of a toy figure. - To look at different sledges and the materials they are made from. To explore how and why products have been created. To consider what materials are suited for which purpose. To create a checklist of materials required for a product. To reflect on the effectiveness of products designed for particular groups or individuals. - To design and plan for a sledge and explain its purpose. To plan my idea using inspiration from real life examples. Create observational drawings and consider how they will create their design. Consider how a product fits the needs of individuals. - To make a sledge using woodwork. To use tools to measure accurately. To preserve and adapt work when original ideas do not work To use appropriate tools to measure. To follow and reflect on the effectiveness of a drawn plan.		Children will know and name materials and their properties. Children will be able to use tools to measure accurately. Children can choose materials for both its suitability and appearance. Children will know how to use running stitch. Children will know how to thread a needle.	Effectiveness, sledge, materials, product, measure, design, structure, woodwork, quality, aesthetics, function, ergonomics, usability, environment, safety, sturdy, stitch, sewing, thread, cotton, needle, mittens, evaluate, appearance.
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		● To evaluate the effectiveness of their sledge and think about any improvements for future work. To test a product created for a specific reason — considering effectiveness and fitness for purpose. To explain what went well with my work and what improvements could be made. Explain what was easy and what was hard.		
	To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Marc Jacobs Famous designer Nationality- American Project objective: I can make a set of gloves/ mittens which fit my hand. ● To explore a range of gloves and mittens to investigate their materials and stitches ● To sketch a design for my mittens and add annotations for size, colour and material. ● To sew a set of mittens. To measure and mark out material to the nearest mm to make mittens allowing for the pattern and		

seam allowance. To explore different types of stitch to join two pieces of material together.

To consider appropriate tools for sewing.

To sew using a needle and thread.

To use a sewing needle safely.

To explore a range of stitch techniques and consider the effectiveness.

To sew two pieces of material together.

To thread cotton onto a plastic needle.

To use tools to enable effective measuring.

To measure accurately to a specific measurement.

To shape textiles using templates.

To cut and shape fabric to make a simple design.

- To preserve and adapt work when original ideas do not work.
- To evaluate the effectiveness of their mittens and think about any improvements for future work.

To reflect regularly on the success of a piece of work.

To use reflections as improvements in future work.

To explain what went well with my work.

To evaluate my work.

To explain what was easy and what was hard.



Construction	Mechanisms	Sewing/ textiles	Cooking and nutrition	Woodwork
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Romans and Celts	To research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	Project objective: I can create a working chariot which can be pulled along. Vitruvius (Cross curricular to art) Nationality-Roman - To research and look at photographs of Roman chariots and explain how they moved (pulled by horses) To describe how they were made considering the size and number of wheels. To explore modern horse and carts and compare the difference to Roman chariots. To explore how wood could be used to create a chariot for a toy person to stand in. - To plan and design a new Roman chariot from inspiration from photographs. To explore how products have been created To plan my idea and consider how to implement it using inspiration from real life and pictures. Use different pencils to sketch considering size, shape and different features. Create observational drawings and consider how they will create design. - To design and plan what they would need to make their chariot using wood. - To consider the effectiveness of different materials. - To consider a design that is fit for purpose. - To create a checklist of materials required. - To choose tools and materials and explain why I have chosen them. (wood, glue gun, wooden reels, saw) - To choose and use appropriate tools and resources effectively including saw, glue gun to secure wheels and ensure vehicle moves. - To choose tools and materials and explain why I have chosen them.	 	Children can choose a material for both its suitability and appearance. Children can select the most appropriate tools and techniques for a given task. Children can prove that my design meets a set criteria.	strong, stable, structure, column, foundation, measure, accurate, precise, make,
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To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

To understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

To measure materials to use in a structure or model. (Using a ruler, measuring tape)
To assemble, combine and join materials and components together using a variety of temporary methods e.g glue and masking tape.

To make my model stronger and join items together.

Measure, mark, cut and shape materials and components

To choose appropriate materials and joins to enable a product to move.

To use and choose appropriate finishing techniques to improve the appearance of their product

- To use junk modelling resources for the chariot shape. To paint and use a range of materials to decorate the chariot

To choose from a range of materials to support the design of a product.

To assemble, combine and join materials and components together using a variety of temporary methods e.g. glue and masking tape.

To make my model stronger and join items together.

To use and choose appropriate finishing techniques to improve the appearance of their product.

- To evaluate the vehicles effectiveness.

To explain what went well with my work. To evaluate my work.

Explain what was easy and what was hard. Improvements to be made in future projects. Consider effectiveness and fitness for purpose.



Hunting
and
Farming

To research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose aimed at particular individuals or groups.

To select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities.

To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

To understand and use mechanical systems in their products (For example gears, pulleys, cams, levers

Project objective: I can follow a moving picture using a lever and linkage.

- To research farming tools and machinery and describe photographs of what the machinery is made from. To explore moving levers and linkages. To name and annotate machinery and how they move using levers, pulleys and gears.

- To make the prototype to explore how levers and linkages work

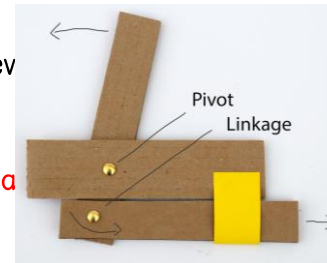
To measure materials to use in a structure or a model (using a ruler, measuring tape)

To assemble, combine and join materials and components together using a variety of methods to ensure movement.

- To plan and design a moving picture with a lever and linkage. To add annotations of size and materials needed.

- To create a moving picture with levers and linkages linked to an animal on the farm jumping over an object (e.g sheep, horse, cow, dog)

To plan my idea and consider how to implement it using inspiration from real life.



Children can follow a step by step plan choosing the right equipment and materials

Children can create products using sliders, pivot and levers.

Use tools safely.

Children can work accurately to measure and make cuts and make holes.

Children can choose a material for both its suitability and its appearance.

Photographs, farming, tools, machinery, quality,

design, evaluate, improve, safety, aesthetics, function,

ergonomics, equipment, materials, linkages, lever, create,

adjust, change, environment, usability, sketch, pulleys,

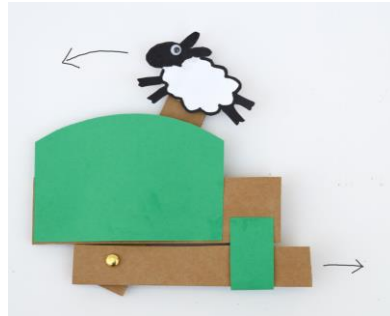
and linkage).

To choose appropriate materials and components to create a moving picture.
To choose tools and materials and explain why I have chosen them.

- To evaluate the moving picture

To explain what went well with my work. To evaluate my work.

Explain what was easy and what was hard. Improvements to be made in future projects. Consider effectiveness and fitness for purpose.



gears and
annotate.

Construction	Mechanisms	Sewing/ textiles	Cooking and nutrition	Woodwork
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Rain Forests	To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their aesthetic qualities. To make a fruit and vegetable curry using ingredients that could be found in a rainforest.	Project objective: I can create an edible fruit and vegetable curry. Ainsley Harriott- Nationality – English - To taste a range of fruits and vegetables To know where different foods originate from/ are grown. To research where foods come from and how they are grown. To consider importation and exportation. To create a world map showing food origins. To know how the climate/environment helps food to grow. To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed Consider the effect of weather upon food growth. To understand what climate is. To understand how food grows and how this can be affected. To create a timeline showing a food journey from growth to shelves. To understand the different groups of people involved in food journeys. (Primary stage, Secondary Stage, Tertiary Stage, Quaternary Stage) To taste a range of fruits and vegetables and explain where they originate from, how they are grown, how they are eaten (raw, cooked or both) what they look like, if I like or dislike them and whether I would or would not add them to a curry. - To explore recipes created by others as inspiration for my own. To make a fruit	Children can read and follow a set of instructions. Children can describe how food ingredients come together. To name and understand how to use equipment required for a recipe.	food, cooking, healthy, prepare, cook, make, ingredients, equipment, hands, clean, instructions, first, second, next, grate, chop, peel, slice, hygiene, curry, fruit, vegetable, cook, savoury, dishes, techniques, season, grow, reared, processed,
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and vegetable curry using ingredients that could be found in a rainforest.

Consider ingredients and instructions for making a food dish.

To cut, peel or grate ingredients safely.

To cut and prepare food safely and hygienically.

To measure or weigh using measuring cups and scales.

To assemble and cook healthy ingredients.

To follow safe procedures for food safety and hygiene whilst cooking.

Wash your hands before and after touching food, tie any long hair back, wear an apron, wash vegetables before cooking, move carefully and safely in the kitchen, wipe up any spillages, be careful when using knives, use oven mitts when moving hot pans, wash all utensils in hot, soapy water.

To name cooking equipment required for my recipe. (Hob, oven, measuring jug, measuring scales, chopping board, knife)

To describe the ingredients I am using. (onions, potatoes, carrots, leek, peas, tomatoes)

To use the correct cutting technique to cut vegetables. (Claw and bridge)

- To evaluate my curry considering the views of others and the intended customer.

Consider effectiveness and fitness for purpose.

To explain what went well with my work. To evaluate my work.

Explain what was easy and what was hard. Improvements to be made in future projects. Consider effectiveness and fitness for purpose.

To seek and reflect on the opinion and experience of peers.

