Crawley Down Village C of E School

Design Technology curriculum progression document

Crawley Down Village C of E School aspires to be a learning community where love and respect are at the heart of all we do. We aim to be a school that lives life in all its fullness; encouraging and supporting each other to be the best we can be.

Learning together, flourishing together: “With God, all things are possible.” Matthew 19:26

Intent

We aim to provide students with the opportunities to develop their knowledge, understanding, and abilities necessary to participate in an interactive design and making process through a variety of creative, explorative, technical, imaginative thinking and practical activities. We will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens through evaluation of past and present design and technology, develop a critical understanding of its impact on daily life and the wider world. We strive to develop a range of relevant contexts for our children to build upon their design skills throughout their learning journey at Crawley Down Village C of E School.

WHOLE SCHOOL OVERVIEW

	AUTUMN		SPRING		SUMMER	
RECEPTION	**Structures/Joins -** Construction kits **Materials-** Card/paper Paper Glue **Joining** Falange **Tools** Scissors safely **Cooking**	Previous + **Materials** Recycled **Joining** PVA/ Wood glue **Tools** - Knives to spread Hammers **Talk** about their model	Previous + **Joining** -Masking tape Sellotape **Mechanisms** -Split pins **Finishing techniques** **Tools-** Knives to cut	Previous + **Textiles** -Pinch sewing **Joining**-Hole punches and treasury tags **Cooking**	Previous + **Joining** -Slot joints **Tools** -Hammer and nails **Cooking** **Talk** about and share processes	Previous + **Joining** - Hinge joints **Tools** - Saw **Adapt** models where necessary
YEAR 1	**Textiles** *Project: To design and make a teddy bear puppet for a child to use at a picnic puppet show*		**Structures** *Project: To design and make a model of a castle which includes a drawbridge for King Henry VIII*		**Mechanism/Mechanical Systems** *Project: To design and make a vehicle for Town Mouse to visit Country Mouse*	
YEAR 2	**Cooking and Nutrition** *Project: To design, make and evaluate a bread roll and healthy filling to sell in the baker's shop*		**Structures** *Project: To design, make and evaluate an African musical instrument to play accompanying African music*		**Mechanisms/Mechanical Systems** *Project: To design, make and evaluate a moving picture for an exhibition*	
YEAR 3	**Structures** *Project: To design, make and evaluate a Picture Frame to give as a Christmas present.*		**Mechanisms/Mechanical Systems** *Project: To design, make and evaluate an Easter card that uses leavers and linkages*		**Textiles** *Project: To design, make and evaluate a bag/wallet for the soldier to carry his money/belongings*	
YEAR 4	**Cooking and Nutrition** *Project: To design, make and evaluate a healthy soup for a local supermarket*		**Structures/Mechanisms** *Product: To design, make and evaluate a model of a Shaduf for the Pharaoh*		**Electrical Systems** *Project: To design, make and evaluate a model of a working lighthouse*	
YEAR 5	**Mechanisms/Mechanical Systems** *Project: To design, make and evaluate a model of a moon buggy to travel 1 metre*		**Structures/Mechanisms** *Project: Design, make and evaluate a movable Board game based on the labyrinth, fitting it and its packaging to an intended audience.*		**Textiles** *Project: To design, make and evaluate a tunic for a modern-day Anglo-Saxon bear.*	
YEAR 6	**Electrical Systems** *Project: To design, make and evaluate a light to use in Narnia*		**Cooking and Nutrition** *Project: To design, make and evaluate a healthy meal for Henry VIII*		**Structures** *Project: To design, make and evaluate a bridge to carry a weigh to cross the river.*	

EYFS							
	Autumn 1 **Once Upon a Time – Wonderful Me & Families**	**Autumn 2** **Once Upon a Time – Traditional Tales**	**Spring 1** **Move it!**	**Spring 2** **Move it!**	**Summer 1** **Mammoth to Mini - Dinosaurs**	**Summer 2** **Mammoth to Mini – Minibeasts and planting**	**Expressive Arts and Design Early Learning Goals: Creating with Materials**
	By the end of the Autumn 1 term it is expected that children will be able: To create simple representations of people – head, body, arms, legs and facial features. To use construction kits to create models of people To join materials (paper, card) using glue sticks To use scissors safely To follow a simple recipe- porridge	**By the end of the Autumn 2 term it is expected that children will be able:** To share their creations To join materials (Glue Stick, PVA/wood glue) To use recycled materials to make a character in a traditional tale. To use knives safely to spread. To use hammers - pins in boards (finger gym)	**By the end of the Spring 1 term it is expected that children will be able:** To make 3D models of vehicles using construction kits and recycled materials. To use finishing techniques (painting, adding other materials) To join using glue, PVA/Wood glue, masking tape and Sellotape To use a split pin join to make an astronaut To use knives safely to cut – healthy fruit salad/veg soup	**By the end of the Spring 2 term it is expected that children will be able:** To sew using a basic stitch - to make star constellations To know how to make flange joins To use hole punches and treasury tags to join card and paper To follow a recipe to make star biscuits.	**By the end of the Spring 2 term it is expected that children will be able:** To share their creations and talk about the process To know how to make slot joins To make salt dough to create their own fossil To use hammers and nails (finger gym)	**By the end of the Summer 1 term it is expected that children will be able:** To adapt work where necessary To know how to make hinge joins with string/treasury tags To use a saw safely To make a musical instrument	**By the end of the Summer 2 term it is expected that children will be able:** To safely use and explore a variety of materials tools and techniques, experimenting with colour, design, texture, form and function. To share their creations, explaining the process they have used. To make use of props and materials when role playing characters in narratives and stories.

Year 1

By the end of the year the children will know these National Curriculum skills:

Design

- To design appealing products for a particular user based on simple design criteria.
- To generate initial ideas based on simple ideas and design through own experience.
- To develop and communicate these ides through talk and drawings and mock ups where relevant

Making

- To select and use simple tools and equipment to perform a job safely and marking out
- To select from a range of materials according to their characteristics to create a chosen product

Evaluate

- To explore and evaluate a range of products to determine the intended user's preference for the product.
- To evaluate their ideas throughout and finished products against design criteria, including the intended user and purpose.

Autumn - Paddington	Spring – Crowns and Castles	Summer – A Gardeners' World
Textiles **The autumn term end points are:** **Knowledge:** • To understand how simple 3-D textile products are made, using a template to create two identical shapes. • To understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • To explore different finishing techniques • To know and use technical vocabulary relevant to the project. *Project: To design and make a teddy bear puppet for a child to use at a picnic puppet show*	**Structures** **The spring term end points are:** **Knowledge** • To know how to make freestanding structures stronger, stiffer and more stable. • To know and use technical vocabulary relevant to the project. *Project: To design and make a model of a castle which includes a drawbridge for King Henry VIII*	**Mechanisms/Mechanical systems** **The summer term end points are:** **Knowledge** • To explore and use wheels, axles and axle holders. • To distinguish between fixed and freely moving axles. • To know and use technical vocabulary relevant to the project. *Project: To design and make a vehicle for Town Mouse to visit Country Mouse*

Year 2

By the end of the year the children will know these National Curriculum skills:

Design

- To generate ideas based on simple design criteria and their own experiences, explaining what they could make.
- To develop, model and communicate their ideas through talking, mock-ups and drawing

Making

- To plan by suggesting what to do next.
- To select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices.
- To select materials, components, reclaimed materials and construction kits to build and create their products.
- To use simple finishing techniques suitable for the products they are creating.

Evaluate

- To explore a range of existing products related to their design criteria.
- To evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria

Autumn – London's Burning	Spring - Africa	Summer – What a Wonderful World
Cooking and Nutrition **The autumn term end points are:** **Knowledge** • To understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • To evaluate texture taste and smell of a variety of bread rolls • To know how to use appropriate equipment and utensils to prepare and combine food safely. • To know about good hygiene when handling food. *Project: To design, make and evaluate a bread roll and healthy filling to sell in the baker's shop*	**Structures** **The spring term end points are:** **Knowledge** • To know how to make freestanding structures stronger, stiffer and more stable. • To know and use technical vocabulary relevant to the project. • To research existing African drums and evaluate their appearance, sound and quality *Project: To design, make and evaluate an African musical instrument to play accompanying African music*	**Mechanisms/ Mechanical systems** **The summer term end points are:** **Knowledge** • To explore and use sliders and levers. • To understand that different mechanisms produce different types of movement. • To know and use technical vocabulary relevant to the project *Project: To design, make and evaluate a moving picture for an exhibition*

Year 3

By the end of the year the children will know these National Curriculum skills:

Design

- To generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
- To use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, to develop and communicate ideas.

Making

- To plan the main stages of making.
- To select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product.
- To select from and use finishing techniques suitable for the product they are creating

Evaluate

To investigate a range of 3-D textile products and lever and linkage products relevant to their project.

- To test their product against the original design criteria and with the intended user.
- To evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Autumn – Home Is Where The Heart Is	Spring – Mission Impossible	Summer - Invasion
Structures	**Mechanisms/Mechanical systems**	**Textiles**
The autumn term end points are: **Knowledge** • To develop and use knowledge of how to construct strong, stiff structures. • To know and use technical vocabulary relevant to the project. *Project: To design, make and evaluate a Picture Frame to give as a Christmas present.*	**The spring term end points are:** **Knowledge** • To understand and use lever and linkage mechanisms. • To distinguish between fixed and loose pivots. • To know and use technical vocabulary relevant to the project. *Project: To design, make and evaluate an Easter card that uses leavers and linkages*	**The summer term end points are:** **Knowledge** • To know how to strengthen, stiffen and reinforce existing fabrics. • To understand how to securely join two pieces of fabric together. • To understand the need for patterns and seam allowances. • To know and use technical vocabulary relevant to the project. *Project: To design, make and evaluate a bag/wallet for the soldier to carry his money/belongings*

Year 4

By the end of the year the children will know these National Curriculum skills:

Design

- To generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
- To use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop and communicate ideas.

Making

- To plan the main stages of making.
- To select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product.
- Select from and use finishing techniques suitable for the product they are creating

Evaluate

- To investigate a range of ingredients relevant to their project.
- Test their product against the original design criteria and with the intended user.
- Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Autumn – Inside Out

Cooking and Nutrition

The autumn term end points are:

Knowledge

- Know how to use appropriate equipment and utensils to prepare and combine food.
- Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.
- Know and use relevant technical and sensory vocabulary appropriately.

Project: To design, make and evaluate a healthy soup for a local supermarket

Spring – A Glimpse of Gold

Structures

The spring term end points are:

Knowledge

- Develop and use knowledge of how to construct strong, stiff shell structures.

Mechanisms/Mechanical systems

- Distinguish between fixed and loose pivots.
- Know and use technical vocabulary relevant to the project

Product: To design, make and evaluate a model of a Shaduf for the Pharaoh

Summer – Water, water everywhere

Electrical Systems

The summer term end points are:

Knowledge

- Understand and use electrical systems in their products linked to science coverage.
- Know and use technical vocabulary relevant to the project.

Project: To design, make and evaluate a model of a working lighthouse

Year 5

By the end of the year the children will know these National Curriculum skills:

Design

- Generate innovative ideas through research including surveys, interviews and questionnaires. And discussion with peers to develop a design brief and criteria for a design specification.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.
- Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design

Making

- Produce detailed lists of equipment and fabrics relevant to their tasks
- Write a step-by-step plan, including a list of resources required.
- Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine materials and resources

Evaluate

- Investigate and analyse products linked to their final product.
- Compare the final product to the original design specification and record the evaluations.
- Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve their work

Autumn – Mission to Mars

Mechanisms/Mechanical systems

The autumn term end points are:

Knowledge

- To understand that mechanical and electrical systems have an input, process and an output.
- To understand how gears can be used to speed up, slow down or change the direction of movement.
- To know and use technical vocabulary relevant to the project
- To understand how to strengthen, stiffen and reinforce 3-D frameworks.

Project: To design, make and evaluate a model of a moon buggy to travel 1 metre

Spring – Groovy Greeks

Structures

The spring term end points are:

Knowledge

- To know and use technical vocabulary relevant to the project.
- To understand how to strengthen, stiffen and reinforce 3-D frameworks.

Mechanisms/Mechanical systems

- To understand that systems have an input, process and an output.
- To know and use technical vocabulary relevant to the project.
- To use a Beebot

Project: Design, make and evaluate a movable Board game based on the labyrinth, fitting it and its packaging to an intended audience.

Summer – Sea-Faring invaders

Textiles

The summer term end points are:

Knowledge

- To understand how simple 3-D textile products are made, using a template to create two identical shapes.
- To understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.
- To explore different finishing techniques
- To know and use technical vocabulary relevant to the project.

Project: To design, make and evaluate a tunic for a modern-day Anglo-Saxon bear.

Year 6		
By the end of the year the children will know these National Curriculum skills: **Design** • To use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products. • To develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • To generate and develop innovative ideas and share and clarify these through discussion. • To communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. **Making** • To formulate a step-by-step plan to guide making, listing tools, equipment, materials and components • To competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. • To use finishing and decorative techniques suitable for the product they are designing and making **Evaluate** • To continually evaluate and modify the working features of the product to match the initial design specification. • To critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • To test the system to demonstrate its effectiveness for the intended user and purpose		
Autumn – Portals, People and Places	**Spring – Off with Their Heads**	**Summer – Survival of the Fittest**
Electrical Systems **The autumn term end points are:** **Knowledge** • To understand and use electrical systems in their products linked to science coverage. • To know and use technical vocabulary relevant to the project *Project: To design, make and evaluate a light to use in Narnia*	**Cooking and Nutrition** **The spring term end points are:** **Knowledge** • To know how to use utensils and equipment including heat sources to prepare and cook food. • To understand about seasonality in relation to food products and the source of different food products. • To know and use relevant technical and sensory vocabulary *Project: To design, make and evaluate a healthy meal for Henry VIII*	**Structures** **The summer term end points are:** **Knowledge** • To understand how to strengthen, stiffen and reinforce 3-D frameworks. • To know and use technical vocabulary relevant to the project. • To cost up materials and plan to a budget *Project: To design, make and evaluate a bridge to carry a weigh to cross the river.*