Primary Specification



Design and Technology

The Rowan Learning Trust

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Trust Level

Children are matched against 'stage descriptors' (in other words what pupils are expected to know and be able to do in computing for their year group or phase) when being assessed by their teachers in their computing lessons. Where appropriate, teachers will provide opportunities for children to apply computing knowledge and skills in other curriculum areas and may use this information as part of their assessments. Teachers use this information to form an overall picture for each child, to determine whether they have met the stage descriptors for the end of their year group or phase

School Level

Formal assessments may be administered in different ways depending on the school. E.g. gradings offered, end of unit mini assessments, knowledge review weeks, termly or half termly assessment periods etc.

In addition to formal assessments, schools will assess pupils informally in accordance with the schools guidelines. At school level the KS2 specification document for each subject will be supported by the school own planning documents/ portals which also include LTPs, MTPs, Schemes of work and associated resources.

Medium Term Plans map the outline learning for each of the learning focusses of each half term in each year group. These provide more detailed information into the steps to facilitate a differentiated approach ensuring that content and skills are covered. The number of activities / objectives covered may vary dependent on the length of a half term and the frequency of lessons in a given subject. There are 5 planning cycles in the year. Autumn 1, Autumn 2, Spring, Summer 1 and Summer 2.

Schemes of Work may vary from subject to subject allowing the specialists in schools to develop suitable activities and topics ensuring ownership of planning for progress. Please note that no external schemes are followed to the book and when used, are merely a starting point for start.

SOW – Guiding Principles

- Skills and content based
- Form part of the 'big picture' e.g.show progression over the 7 years in school
- Provide suggested resources
- Allow for teacher ownership and/or creativity of lessons
- Allow for appropriate differentiation

The national curriculum for Design and Technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

OBJECTIVES	
KS1	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: Design • design purposeful, functional, appealing products for themselves and other users based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make • select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Evaluate • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria Technical knowledge • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Cooking and Nutrition • use the basic principles of a healthy and varied diet to prepare dishes

	• understand where food comes from.
KS2	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: Design • 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 • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Make • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • 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 Evaluate • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • understand how key events and individuals in design and technology have helped shape the world Technical knowledge • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products. 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.

SUBJECT INTENT

We are committed to providing children with a progressive and relevant Design Technology education, to prepare them for life in the wider world. We believe that high quality DT lessons will inspire children to think independently, innovatively and develop creative procedural and technical understanding. The skills that are developed in this subject can be transferred across the curriculum. Children will build up and acquire a range of knowledge and techniques through working with mechanisms, structures, food, textiles and electrical systems. Children will be taught how to cook and apply the principles of nutrition and healthy eating, allowing them to maintain a healthy lifestyle and equip them with the crucial life skill of how to feed themselves and others affordably and well, in later life. By the time our pupils leave, they will be able to select resources, take risks and solve problems, to become capable citizens.

DESIGN AND TECHNOLOGY IMPLEMENTATION

Across school, an adaptation of Kapow's schemes of work will be employed to ensure a consistent approach and progression of skills within all key strands of the DT curriculum. The areas of mechanisms, textiles and structures will be revisited within each key stage to ensure that knowledge and skills are retained and developed overtime. Electrical systems will be taught twice during Key Stage Two.

A focus will be placed on cooking and nutrition, which will be taught within each year group, learning to prepare predominantly healthy savoury dishes. Children will be taught food provenance and seasonality.

The long-term plans ensure that children build a repertoire of knowledge and techniques, such as building structures of increasing difficulty and progressing from simple mechanisms towards mechanical systems. These are based on constructions in our locality and reflect the importance of key events and individuals that have influenced some designs that have helped to shape the world around them. Our pupils gain the practical skills in textiles to be able to perform everyday tasks.

Children also have access to 'Woodwork sessions' where they apply skills into creating school-based projects – this roll out is beginning with Upper KS2 on a rota. All classes

DESIGN AND TECHNOLOGY IMPACT

Children will be able to demonstrate an understanding of purpose and user, in relation to the designs and products that they produce.

Children will be confident when researching, designing, making and evaluating quality products, based on an initial design criteria.

They will be able to select the appropriate skills, tools and techniques, working safely to solve a problem. Children will critique their own *and others'** designs *(*UKS2)*, assessing their final products against the initial design criteria, making suggestions for further adaptations and improvements.

Children will confidently be able to suggest a range of healthy ingredients to enable them to cook a nutritious, healthy and affordable meal, with an awareness of seasonality and food provenance.

Summary of Subject Content

Our scheme of work aims to inspire pupils to be innovative and creative thinkers who have appreciation for the product design cycle. We want pupils to develop the confidence and be reflective learners.

Through using the Kapow scheme of work we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful citizens. The scheme of work enables pupils to meet the end of key stage attainment targets in the national curriculum.

Farington Primary School Yearly Overview – Design & Technology

	Autumn	Spring	Summer
EYFS	Cooking and Nutrition – Pumpkin Soup	Junk Modelling	Textiles: Bookmarks
Year 1	**Textiles: Puppets** Explore methods of joining fabric. Design and make a character-based hand puppet using a preferred joining technique, before decorating.	**Mechanisms: Making a moving storybook** Explore slider mechanisms and the movement they output to design, make and evaluate a moving storybook from a range of templates.	**Cooking and nutrition: Fruit and vegetables** Learn to distinguish between fruit and vegetables and where they grow. Design a fruit and vegetable smoothie
Year 2	**Structures: Baby Bear's chair** Explore stability and methods to strengthen structures, to understand Baby Bear's chair weaknesses and develop an improved solution for him to use.	**Cooking and nutrition: Balanced diet** This cooking and nutrition unit will help the children learn about the importance of a balanced diet and use that knowledge to create a tasty wrap.	**Mechanisms: Making a moving monster** Explore levers, linkages and pivots through existing products and experimentation, use this research to construct and assemble a moving monster.
Year 3	**Textiles: Cross-stitch and appliqué** Learn and apply two new sewing techniques – cross-stitch and appliqué. Utilise these new skills to design and make a cushion or Egyptian collar.	**Mechanical systems: Pneumatic toys** Explore pneumatic systems, then apply this understanding to design and make a pneumatic toy including thumbnail sketches and exploded diagrams.	**Cooking and nutrition: Eating seasonally** Investigating seasonal food in the UK and applying pupils' understanding to create a seasonal food tart.
Year 4	**Structure: Pavilions** Investigate and model frame structures to improve their stability, then apply this research to design	**Electrical systems: Torches** Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their	**Cooking and nutrition: Adapting a recipe** Our refreshed Y4 cooking and nutrition unit including opportunities for children to learn

	create a stable, decorated pavilion.	features, then develop a new functional torch design.	a basic biscuits recipe and adapt it to suit a target audience.
Year 5	**Mechanical systems** Design an eco-bike with gears and pulleys to harness the energy from an exercise bike or create a functional pop-up book using levers, sliders, layers and spacers to create paper-based mechanisms.	**Textiles: Stuffed toys** Design a stuffed toy (Easter egg) and make decisions on materials, decorations and attachments (appendages), after learning how to sew a blanket stitch.	**Cooking and nutrition: Developing a recipe** Our refreshed Y5 cooking and nutrition unit including opportunities for children to learn a simple Bolognese recipe and adapt it to improve nutritional content.
Year 6	**Structures: Playgrounds** Research existing playground equipment and their different forms, before designing and developing a range of apparatus to meet a list of specified design criteria.	**Electrical systems: Steady hand game** Understand what is meant by fit for purpose design and form follows function. Design and develop a steady hand game using a series circuit, including housing and backboard.	**Cooking and nutrition: Come dine with me** Our refreshed Y6 cooking and nutrition unit including optional opportunities to learn about the basic tastes and complementary flavours. Cooking will be based on Jamie Oliver's recipes.

STAGE DESCRIPTORS	
EYFS	• Safely use and explore a variety of materials, tools and techniques, experimenting with design, texture, form and function • Share their creations, explaining the process they have used • Make use of props and materials when role playing characters in narratives and stories • Return to and build on their previous learning, refining ideas and developing their ability to represent them • Create collaboratively, sharing ideas, resources and skills
KS1	Design: • Explore and evaluate a range of existing products • Know the purpose of their product • Design a product for a particular purpose or user • Communicate a design for their product Make: • Follow a simple design • Select and use appropriate tools, materials and techniques • Perform practical tasks, including cutting and joining • Create a product based on their designs • Follow safety rules and use equipment correctly Evaluate: • Identify strengths and weaknesses of a product • Discuss whether their product hasmet the design criteria Technical Knowledge: • Build structures that are strong and stable • Use mechanisms in theirproduct Cooking and Nutrition: • Follow a simple recipe • Use the basic principles to prepare dishes • Show an understanding of where the food they are using comes from
LKS2	Design: • Identify the design features of existing products and how they are fit for purpose • Know the purpose of their product • Design a product for a particular purpose or user • Generate and communicatemy design ideasin a variety of ways Make: • Follow their own design accurately • Select and use appropriate tools, materials and techniques, explaining their choices • Perform practical tasks, including cutting and joining, with greater precision • Create a product that reflects their original design

	• Follow safety rules and use a wider range of equipment correctly Evaluate: • Evaluate their ideas and products against their own design criteria • Discuss whether their product has met the design criteria Technical Knowledge: • Build more complex structures that are strong and stable • Understand and use mechanisms in their product Cooking and Nutrition: • Prepare and cook healthy dishes • Understandthe principles of a healthy varied diet • Show an understanding of seasonality and where a range of food comes from
UKS2	Design: • Use their knowledge of a broad range of innovative, functional and appealing existing products to help generate their ideas for the intended purpose or user • Design innovative, functional and appealing products • Generate, communicate, develop and justify my design ideas in a variety of ways Make: • Select and use a wider range of appropriate materials and techniques with precision and accuracy, taking into account functional properties and aesthetic qualities • Create a product that reflects their original design with adaptations, if needed • Follow safety rules and identify potential dangerswhen using a wider range of equipment correctly Evaluate: • Evaluate their ideas and products against their own design criteria taking into account the views of others in order to improve their work • Discuss whether their product has met the design criteria • Discuss how key events or individuals have influenced some designs, inventions and products that have helped shape the world Technical Knowledge: • Apply their knowledge to strengthen, stiffen and reinforce complex structures • Understand and use a wider range of mechanisms in their product and justify choices • Understand and use electrical systems in their products • Apply their understanding of computing to program, monitor and control products Cooking and Nutrition: • Prepare and cook a range of healthy dishes • Use a range of cooking techniques when creating dishes • Apply the principles of a healthy and varied diet to the dishes they create and know the source of a variety of ingredients

Assessment Criteria

What we do

1. We implement an inclusive curriculum so that all children, including those with SEND, can make progress and demonstrate success in a range of ways.
2. We conduct baseline assessments, checking the pupils' existing knowledge and skill level.
3. We review and re-cap prior learning and link it to new and current study. We identify curriculum links so that learning can be applied and assessed in new contexts.
4. Teachers use a range of assessment activities in their class, including the review of knowledge organisers, mini assessments, sketch books, independent tasks, work in books, pupil chats in lessons. We incorporate longitudinal study where appropriate, including geography and history to assess long term knowledge retention.
5. To meet the expected standard, pupils should demonstrate a broad understanding of the key facts in the end points for that year (as outlined in the subject key specification document). In addition, they retain key knowledge from prior learning.
6. At the greater depth standard, pupils demonstrate knowledge and understanding of every aspect of the key specification to the highest degree.
7. We enter a mid-year and end of year attainment grade onto FFT. Subject leaders analyse the data and report to governors annually.
8. Bi-annual peer audits provide quality assurance, moderation of standards and training across trust schools.

Our logo was carefully chosen to represent the children, young people and adults in our learning community who strive for excellence through high aspiration and high expectation.

The Rowan Learning Trust

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