



DESIGN TECHNOLOGY

EXPECTATIONS:

EYFS - Early Learning Goals

Expressive Arts and Design (Creating with Materials)

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;
- Share their creations, explaining the process they have used;

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
<p>Design Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Make Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Evaluate Pupils should be taught to:</p> <ul style="list-style-type: none"> • explore and evaluate a range of existing products; • evaluate their ideas and products against design criteria. <p>Technical Knowledge Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Cooking and Nutrition Pupils should be taught to:</p> <ul style="list-style-type: none"> • use the basic principles of a healthy and varied diet to prepare dishes; • understand where food comes from. 	<p>Design Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Make Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Evaluate Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Technical Knowledge Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. <p>Cooking and Nutrition Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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.



STATEMENTS OF:

INTENT

We believe that Design and Technology is an inspiring, rigorous and practical subject which has a vital role in creating the problem solvers of the future. Our aim is to encourage pupils to use their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Pupils will become confident and proficient in designing and creating products for purpose. Pupils will develop technical knowledge to enhance their thinking and making skills. Pupils will develop knowledge of cooking and nutrition. At Riverside, we ensure the progressive development of knowledge and skills, enabling to become resourceful, innovative, enterprising and capable global citizens.

IMPLEMENTATION

Riverside pupils develop their skills through themed units of work which facilitate their progression across each age phase. Each unit comes with a thinking and reasoning element, specific skill and technique to ensure continued interest in the subject as well as acquiring new knowledge of processes. Pupils combine practical skills with an understanding of aesthetic, social and environmental issues, as well as of functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impact.

IMPACT

Riverside pupils recognise the importance and value of the Design and Technology curriculum. Pupils express their enjoyment of the subject, see themselves as designers and problem solvers. Pupils improve their practical skills, technical knowledge and inquisitiveness about the world around them, leading to a greater awareness of the impact of Design and Technology on the wider world. Pupils leave Riverside with a designer and technologist foundation that provides a springboard for a variety of opportunities throughout secondary school and beyond.



SUBJECT OVERVIEW

PROGRESSION:

	EYFS	KS1	LKS2	UKS2
DESIGN	<p>Pupils can</p> <ul style="list-style-type: none"> • be exposed to a range of stimulus to inform their experiences. • respond to what they see, hear and observe to develop their imaginations. • develop their own ideas by exploring materials and selecting resources for purpose. • explore their ideas through <ul style="list-style-type: none"> ◦ Drawing ◦ Talking ◦ Making 	<p>Pupils can</p> <ul style="list-style-type: none"> • generate ideas to design a product for a purpose, based on a design criteria • develop and communicate design ideas by using <ul style="list-style-type: none"> ◦ spoken and written form ◦ pictures to record ideas they have generated. • design a product for self that is functional, based on design criteria. • begin to design a product that is appealing to a specified group of other users • begin to develop templates [and/or mock-ups] of a design idea. • begin to describe what needs to be done and know the next step • use information and communication technology [if appropriate] to model and share design. 	<p>Pupils can</p> <ul style="list-style-type: none"> • develop and communicate ideas through discussion and annotated sketches/diagrams • develop design criteria to inform the appeal of a product for a targeted group • design a product incorporating a functional electrical system • plan and decide upon a sequence of actions to make a product. 	<p>Pupils can</p> <ul style="list-style-type: none"> • develop design criteria to inform the innovative and functional design of a product that are fit for purpose. • design a product that is fit for a targeted group.



SUBJECT OVERVIEW

		EYFS	KS1	LKS2	UKS2
CREATE		<p>Pupils can</p> <ul style="list-style-type: none"> • explore the textures, movement, feel and look of different media and materials. • use tools safely to manipulate materials to create effects <ul style="list-style-type: none"> ○ Shape ○ Join ○ Assemble 	<p>Pupils can:</p> <ul style="list-style-type: none"> • select tools, equipment and materials and components appropriate to a task • use tools appropriately to perform practical tasks including <ul style="list-style-type: none"> ○ cutting, ○ shaping, ○ joining ○ finishing • create and use a template to mark out materials that need to be cut 	<p>Pupils can:</p> <ul style="list-style-type: none"> • develop and adapt initial designs, and begin to critically test ideas and products • use a range of tools and materials correctly when making their own product using an electrical system. • develop model or prototypes to communicate ideas. • understand and use electrical systems [e.g. series circuits incorporating switches, bulbs, motors and buzzers] and use these to create a product that use light or sound • use a wide range of tools and equipment to accurately perform a particular task such as joining. • apply their understanding of how to strengthen, stiffen and reinforce complex structures. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • select from a wide range of materials/components [textiles, construction materials, ingredients] according to functional properties. • measure and mark selections when using materials and components. • use mechanical systems in own products [e.g pulleys, cams, levers] • begin to check their work as it develops and solve technical problems.
		EYFS	KS1	LKS2	UKS2
TECHNICAL KNOWLEDGE		<p>Pupils can:</p> <ul style="list-style-type: none"> • explore how to use a range of tools for purpose. • explain the steps taken to make their creation. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • explore and make observations about different mechanisms <ul style="list-style-type: none"> ○ levers, sliders ○ wheels, axles • use different mechanisms in when making own products • use technical vocabulary to describe existing and own products eg rotation and sliding. • build structures exploring how they can be made stronger and more stable. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • draw and sketch existing products and components to help understand how they are made and how they work • begin to select from a wide range of materials and components [textiles, construction materials, ingredients] according to functional properties to make their product. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • begin to understand how key events in DT have helped shape the world e.g. iconic designs, development of materials and computing technologies • understand how key individuals in DT have helped shape the world [e.g. Tim Berners-Lee, Steve Jobs, James Dyson] • apply an understanding of computing to programme, monitor and control products. • use computer-aided design programs when appropriate.
		EYFS	KS1	LKS2	UKS2



SUBJECT OVERVIEW

				<ul style="list-style-type: none"> • gain a secure understanding of how mechanical systems work [e.g. gears, pulleys, cams, levers] • draw and sketch existing products, develop and communicate ideas through cross-sectional and exploded diagrams • propose realistic suggestions as to how a design may be achieved. Eg a cam operated toy.
EVALUATION	<p>Pupils can:</p> <ul style="list-style-type: none"> • share their creations and explain their process and outcome. • talk about features, strengths and differences of their work and of others. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • explore and evaluate existing products according to and against a design criteria eg a moving picture • evaluate the purpose of the product made according to design criteria • evaluate the function of the product made according to design criteria • evaluate the appeal of the product made according to the specified user • begin to make suggestions, using appropriate vocabulary, as to what could be done differently next time 	<p>Pupils can:</p> <ul style="list-style-type: none"> • evaluate the product made (including food against own design criteria concerning (taste) appeal to the targeted group. • make suggestions about how to improve others' work. • consider the suggestions of others in improving own work 	<p>Pupils can:</p> <ul style="list-style-type: none"> • evaluate the product made against own design criteria concerning innovation and function. • begin to evaluate the question: Which is more important: design or function? • make suggestions about how to improve others' work.



SUBJECT OVERVIEW

<p>COOKING AND NUTRITION</p>	<p>Pupils can:</p> <ul style="list-style-type: none">• learn and describe where different food comes from (trees, other plants, animals) – UK focus.• understand that we need food to grow, be active and maintain health.• learn and describe what a healthy and varied diet consists of.• plan a healthy dish giving reasons for choices made in terms of:<ul style="list-style-type: none">◦ ingredients◦ presentation• prepare healthy, varied dishes.• work safely and hygienically when preparing food.	<p>Pupils can:</p> <ul style="list-style-type: none">• know where a variety of foods are grown, reared, caught and processed - European focus.• learn about the seasonality of food and begin to develop an awareness of the range of modern food production eg hothousing.• design a healthy and varied meal, selecting foods for a particular purpose with an awareness of seasonality and affordability.• prepare a variety of predominantly savoury dishes using a range of preparation techniques eg slicing, grating, combining.	<p>Pupils can:</p> <ul style="list-style-type: none">• develop an understanding that we eat different foods depending on the occasion and lifestyle eg vegetarian.• design a healthy and varied meal, understanding the importance of nutrition, food groups and select foods for a particular purpose, including affordability – Global focus.• use a range of cooking equipment safely and hygienically.• weigh and measure ingredients using scales, jugs and spoons.• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques [e.g. boiling, oven cooking] – Global Focus.
------------------------------	---	---	---