



Curriculum Subject: Design and Technology

Subject Leader: Laurie Bold

Curriculum Overview and Statement of Intent, Implementation and Impact.

	<u>Vision</u> 'We aspire to ensure that our inclusive, welcoming and loving church school gives children and adults the opportunity to reach their full potential, so that through God's love they can make a difference to the world around them.'	<u>Values</u> Compassion Courage Community
	<u>Motto</u> Learning to make a difference through God's love. <i>Jesus said, 'Love one another as I have loved you' John 13:34</i>	
	<u>Mission</u> • Ensure that children are safe and demonstrate compassion for others. • The school and its community work together to promote mental health and wellbeing and ensure that everyone feels respected. • Unify the school family enabling it to flourish through collective worship, inclusive extra curricular provision and a broad, balanced curriculum. • Encourage inclusively high expectations enabling children to personally and academically thrive. • Deliver an inspirational, creative curriculum to meet the needs of our aspirational children. • Ensure that children and adults acquire and apply knowledge that gives them the courage to fulfil their aspirations. • Create an environment that builds confidence for the school family to grow resilience. • Enable children to persevere on a journey of social, moral, cultural and spiritual growth.	

Intent

Our intent of design Technology **prepares** children to deal with tomorrow's rapidly changing world in **wondrous** and **creative** opportunities. It **encourages** children to become **independent**, creative problem-solvers as individuals and as part of a team. The **varied** topics relate to a range of employment areas **empowering** positive changes to their quality of life.

Design and Technology at Newport Junior School's intention is to Introduce pupils to all areas of product innovation through specific planned topics relating to the wider curriculum. DT incorporates many aspects of the manufacturing world, from evaluations of previous products to designing with specific purposes in mind. With opportunities to develop knowledge around a wide range of materials and tools including the correct techniques and skills essential to create their product.

With a **creative** curriculum, designed at **flourishing** the interest of all learners the intent aims to ignite the '**love laugh and learn**' culture towards their education.

Implementation

Design and technology is implemented through a termly focus on a specific **product**. Pupils will first gain **understanding** of the **purpose** a product has through detailed research using a range of sources. Previous products will be **evaluated** with pupils **understanding** why manufacturers make certain choices.

Pupils are then taught **key skills** they will use to create their product in the future with opportunities to practically apply them to specific tasks. Pupils will then plan how they will create their final product, with keen **consideration** into their previous research and experiences of practical skills. Individually or in groups.

Through the **manufacturing** stage, pupils will be given **materials** and **tools** required to complete the product. This will be pupil lead however pupils are under constant supervision to ensure **safety** is the main priority. Following the completion of the product pupils will **evaluate** their finished article against previously researched products.

As Pupils progress through the school, a larger focus will apply to the **aesthetics** of products, with firm discussions around products **practicality** and their pose. These discussions will introduce the impact of design in the **products market**.

Impact

The impact of Design and Technology is to give **all pupils** the **opportunity to develop skills, knowledge and understanding** of designing and making **functional products**. By understanding products around them, we aim to enhance pupils understanding of the things they buy and use creating **critical thinkers** around modern and historical products. We feel it is vital to nurture **creativity** and **innovation** through design, and by exploring the designed and made world we can further understand the world we live in and the **future** it could hold.

Design and Technology encompasses many areas of the **curriculum** creating simple **links** between subjects, these links highlight the importance of all subjects for **future job potential**. With many practical and topical products being made areas of **engineering** and **manufacturing** will be introduced to the pupils. As enthusiasm towards these industries increases, pupils can look towards the future developing an understanding where their **career** may go and how they can make steps to **achieve** this now.

NJS DT Progression map - Autumn

	Year 3	Year 4	Year 5	Year 6
Autumn	Unit Title: Torches	Unit Title: Roman Shields	Unit Title: Viking purses	Unit Title: Shelters
	Vocabulary: Purpose Plan Design Skills Evaluate Product Circuits Switch Bulb Wires Cell	Vocabulary: Purpose Plan Design Skills Evaluate Product Insulation Conditions Practical Needle Thread Material Cutting Joining Sewing Measure	Vocabulary: Purpose Plan Design Skills Evaluate Product Needle Thread Material Cutting Joining Sewing Measure Fasten Aesthetics	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength support Stability structure Fix Brace
	Key Knowledge: ○ that materials have both functional properties and aesthetic qualities ○ about the simple working characteristics of materials and components ○ Links to science curriculum	Key Knowledge: ○ that materials have both functional properties and aesthetic qualities ○ that a 3-D textiles product can be assembled from two identical fabric shapes ○ Links to topic curriculum	Key Knowledge: ○ Understand that materials have both functional properties and aesthetic qualities ○ Know that a 3-D textiles product can be assembled from two identical fabric shapes ○ Links to topic curriculum	Key Knowledge: ○ how to reinforce and strengthen a 3D framework ○ how to make strong, stiff shell structures ○ that materials can be combined and mixed to create more useful characteristics ○ how freestanding structures can be made stronger, stiffer and more stable
	Key Skills: ❑ use a wider range of materials and components than KS1, including construction materials ❑ and kits, textiles, food ingredients, mechanical components and electrical components ❑ measure, mark out, cut and shape materials and components with some accuracy ❑ assemble, join and combine materials and components with some accuracy	Key Skills: ❑ measure, mark out, cut and shape materials and components with some accuracy ❑ assemble, join and combine materials and components with some accuracy	Key Skills: ❑ Measure, mark out, cut and shape materials and components with some accuracy ❑ Assemble, join and combine materials and components with some accuracy	Key Skills: ❑ select materials and components suitable for the task ❑ explain their choice of materials and components according to functional properties and aesthetic qualities ❑ accurately measure, mark out, cut and shape materials and components ❑ accurately assemble, join and combine materials and components ❑ accurately apply a range of finishing techniques,

NJS DT Progression map - Spring

	Year 3	Year 4	Year 5	Year 6
Spring	Food technology- Egyptian Bread	Unit Title: Shelters	Unit Title: Electric buggies	Unit Title: Tudor rose
	Vocabulary: Purpose Plan Design Skills Evaluate Product Egyptian, archaeologist, flour, bread,	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength support Stability structure Fix Brace	Vocabulary: series circuit, parallel , circuit, names of switches and components, input , device, output device, system, monitor, control, program, flowchart	Vocabulary: Purpose Plan Design Skills Evaluate Product Needle Thread Material Cutting Joining Sewing Measure Fasten
	Key Knowledge: - Know that materials have both functional properties and aesthetic qualities - Think about the simple working characteristics of materials and components - Links to science curriculum	Key Knowledge: - how to reinforce and strengthen a 3D framework - how to make strong, stiff shell structures - that materials can be combined and mixed to create more useful characteristics - how freestanding structures can be made stronger, stiffer and more stable	Key Knowledge: - Understanding of the essential characteristics of a series circuit and experience of creating a battery powered, functional, electrical product. - To know and understand an electrical circuit.	Key Knowledge: - that a 3D textiles product can be made from a combination of fabric shapes - how to reinforce and strengthen a 3D framework - Links to Topic curriculum
	Key Skills: - use a wider range of materials and components than KS1, including construction materials and kits, mechanical components and electrical components - measure, mark out, cut and shape materials and components with some accuracy	Key Skills: - select materials and components suitable for the task - explain their choice of materials and components according to functional properties and - aesthetic qualities - accurately measure, mark out, cut and shape materials and components - accurately assemble, join and combine materials and components - accurately apply a range of finishing techniques,	Key Skills: - Develop an authentic and meaningful design brief with the children. - Ask the children generate innovative ideas by drawing on research and develop a design specification. - Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit - diagrams. Drawings should indicate the design decisions made, including the location of the electrical - components and how they work as a system with an input, process and output.	Key Skills: - accurately measure, mark out, cut and shape materials and components - accurately assemble, join and combine materials and components - accurately apply a range of finishing techniques,

NJS DT Progression map - Summer

	Year 3	Year 4	Year 5	Year 6
Summer	Unit Title: Lower KS2 Crest award	Unit Title: Bridges	Unit Title: Rollercoaster	Unit Title: Crest upper KS2 Award
	Vocabulary: Purpose Plan Design Skills Evaluate Product Discussion Objective Teamwork Cooperation Pitch	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength Support Structure Brace	Vocabulary: Purpose Plan Design Skills Evaluate Product Structure Support Brace Card Prism Gravity	Vocabulary: Purpose Plan Design Skills Evaluate Product Discussion Objective Teamwork Cooperation Pitch Review Dilemma International Epidemic
	Key Knowledge: ○ work confidently within a range of contexts, such as the home, school, leisure, culture, ○ enterprise, industry and the wider environment ○ describe the purpose of their products ○ indicate the design features of their products that will appeal to intended users ○ explain how particular parts of their products work	Key Knowledge: ○ Understand that materials have both functional properties and aesthetic qualities ○ Know how freestanding structures can be made stronger, stiffer and more stable	Key Knowledge: ○ that materials have both functional properties and aesthetic qualities ○ that mechanical and electrical systems have an input, process and output ○ how freestanding structures can be made stronger, stiffer ○ and more stable	Key Knowledge: ○ work confidently within a range of contexts, such as the home, school, leisure, culture, ○ enterprise, industry and the wider environment ○ describe the purpose of their products ○ identify the needs, wants, preferences and values of particular individuals and groups ○ develop a simple design specification to guide their thinking
	Key Skills: ❑ generate realistic ideas, focusing on the needs of the user ❑ make design decisions that take account of the availability of resources	Key Skills: ❑ Use a wider range of materials and components than KS1, including construction materials ❑ Mark , measure cut and use components with growing accuracy	Key Skills: ❑ accurately measure, mark out, cut and shape materials and components ❑ accurately assemble, join and combine materials and components ❑ accurately apply a range of finishing techniques,	Key Skills: ❑ carry out research, using surveys, interviews, questionnaires and web-based resources ❑ generate innovative ideas, drawing on research ❑ make design decisions, taking account of constraints such as time, resources and cost ❑ demonstrate resourcefulness when tackling practical problems