




Curriculum Subject: Design and Technology

Subject Leader: Elliott Lawson

Curriculum Overview and Statement of Intent, Implementation and Impact.

	<p><u>Vision</u></p> <p>'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.'</p>	<p><u>Values</u></p> <p>Compassion</p> <p>Courage</p> <p>Community</p>
<p><u>Motto</u></p> <p>Learning to make a difference through God's love. <i>Jesus said, 'Love one another as I have loved you' John 13:34</i></p>		
<p><u>Mission</u></p> <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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.



Newport CE Junior School: Curriculum Progress Map for Design and technology

	Year 3	Year 4	Year 5	Year 6
Autumn	Unit Title: Torches	Unit Title: Polar sleeping bag	Unit Title: Buggies	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 Circuits Switch Cell Motor Thrust Drag Acceleration Aerodynamics Forces Wheel axle gears chassis	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength support Stability structure Fix Brace
	Key Knowledge: <ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities about the simple working characteristics of materials and components Links to science curriculum 	Key Knowledge: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> how mechanical systems such as cams or pulleys or gears create movement. how more complex electrical circuits and components can be used to create functional Products that mechanical and electrical systems have an input, process and output Links between science curriculum 	Key Knowledge: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> measure, mark out, cut and shape materials and components with some accuracy assemble, join and combine materials and components with some accuracy 	Key Skills: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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,
Spring	Unit Title: Shields	Unit Title: Bridges	Unit Title: Marble rollercoasters	Unit Title: Tudor rose
	Vocabulary: Purpose Plan Design Skills Evaluate Product Fixing Strength Support Aesthetics	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 Needle Thread Material Cutting Joining Sewing Measure Fasten
	Key Knowledge: <ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities how freestanding structures can be made stronger, stiffer and more stable Links to topic curriculum 	Key Knowledge: <ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities how freestanding structures can be made stronger, stiffer and more stable 	Key Knowledge: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 apply a range of finishing techniques, 	Key Skills: <ul style="list-style-type: none"> 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 apply a range of finishing techniques, 	Key Skills: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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,
Summer	Unit Title: Lower KS2 Crest award	Unit Title: Viking purse	Unit Title: Bird table	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 Needle Thread Material Cutting Joining Sewing Measure Fasten Aesthetics	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength Support Stability Structure Aesthetics Practical Cutting Joining Fixing Brace Hand saw Jig Glue Drill Wood	Vocabulary: Purpose Plan Design Skills Evaluate Product Discussion Objective Teamwork Cooperation Pitch Review Dilemma International Epidemic
	Key Knowledge: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources 	Key Skills: <ul style="list-style-type: none"> measure, mark out, cut and shape materials and components with some accuracy assemble, join and combine materials and components with some accuracy 	Key Skills: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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

NJS DT Progression map - Autumn

	Year 3	Year 4	Year 5	Year 6
Autumn	Unit Title: Torches	Unit Title: Polar sleeping bag	Unit Title: Buggies	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 Circuits Switch Cell Motor Thrust Drag Acceleration Aerodynamics Forces Wheel axle gears chassis	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength support Stability structure Fix Brace
	Key Knowledge: <ul style="list-style-type: none"> ○ that materials have both functional properties and aesthetic qualities ○ about the simple working characteristics of materials and components ○ Links to science curriculum 	Key Knowledge: <ul style="list-style-type: none"> ○ 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: <ul style="list-style-type: none"> ○ how mechanical systems such as cams or pulleys or gears create movement. ○ how more complex electrical circuits and components can be used to create functional Products ○ that mechanical and electrical systems have an input, process and output ○ Links between science curriculum 	Key Knowledge: <ul style="list-style-type: none"> ○ 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: <ul style="list-style-type: none"> <input type="checkbox"/> use a wider range of materials and components than KS1, including construction materials <input type="checkbox"/> and kits, textiles, food ingredients, mechanical components and electrical components <input type="checkbox"/> measure, mark out, cut and shape materials and components with some accuracy <input type="checkbox"/> assemble, join and combine materials and components with some accuracy 	Key Skills: <ul style="list-style-type: none"> <input type="checkbox"/> measure, mark out, cut and shape materials and components with some accuracy <input type="checkbox"/> assemble, join and combine materials and components with some accuracy 	Key Skills: <ul style="list-style-type: none"> <input type="checkbox"/> accurately measure, mark out, cut and shape materials and components <input type="checkbox"/> accurately assemble, join and combine materials and components <input type="checkbox"/> accurately apply a range of finishing techniques, 	Key Skills: <ul style="list-style-type: none"> <input type="checkbox"/> select materials and components suitable for the task <input type="checkbox"/> explain their choice of materials and components according to functional properties and <input type="checkbox"/> aesthetic qualities <input type="checkbox"/> accurately measure, mark out, cut and shape materials and components <input type="checkbox"/> accurately assemble, join and combine materials and components <input type="checkbox"/> accurately apply a range of finishing techniques,

NJS DT Progression map - Spring

	Year 3	Year 4	Year 5	Year 6
Spring	Unit Title: Shields	Unit Title: Bridges	Unit Title: Marble rollercoasters	Unit Title: Tudor rose
	Vocabulary: Purpose Plan Design Skills Evaluate Product Fixing Strength Support Aesthetics	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 Needle Thread Material Cutting Joining Sewing Measure Fasten
	Key Knowledge: <ul style="list-style-type: none"> ○ that materials have both functional properties and aesthetic qualities ○ how freestanding structures can be made stronger, stiffer and more stable ○ Links to topic curriculum 	Key Knowledge: <ul style="list-style-type: none"> ○ that materials have both functional properties and aesthetic qualities ○ how freestanding structures can be made stronger, stiffer and more stable 	Key Knowledge: <ul style="list-style-type: none"> ○ 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: <ul style="list-style-type: none"> ○ 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: <ul style="list-style-type: none"> <input type="checkbox"/> use a wider range of materials and components than KS1, including construction materials <input type="checkbox"/> and kits, textiles, food ingredients, mechanical components and electrical components <input type="checkbox"/> measure, mark out, cut and shape materials and components with some accuracy <input type="checkbox"/> assemble, join and combine materials and components with some accuracy <input type="checkbox"/> apply a range of finishing techniques, 	Key Skills: <ul style="list-style-type: none"> <input type="checkbox"/> use a wider range of materials and components than KS1, including construction materials <input type="checkbox"/> and kits, textiles, food ingredients, mechanical components and electrical components <input type="checkbox"/> measure, mark out, cut and shape materials and components with some accuracy <input type="checkbox"/> assemble, join and combine materials and components with some accuracy <input type="checkbox"/> apply a range of finishing techniques, 	Key Skills: <ul style="list-style-type: none"> <input type="checkbox"/> accurately measure, mark out, cut and shape materials and components <input type="checkbox"/> accurately assemble, join and combine materials and components <input type="checkbox"/> accurately apply a range of finishing techniques, 	Key Skills: <ul style="list-style-type: none"> <input type="checkbox"/> accurately measure, mark out, cut and shape materials and components <input type="checkbox"/> accurately assemble, join and combine materials and components <input type="checkbox"/> 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: Viking purse	Unit Title: Bird table	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 Needle Thread Material Cutting Joining Sewing Measure Fasten Aesthetics	Vocabulary: Purpose Plan Design Skills Evaluate Product Strength Support Stability Structure Aesthetics Practical Cutting Joining Fixing Brace Hand saw Jig Glue Drill Wood	Vocabulary: Purpose Plan Design Skills Evaluate Product Discussion Objective Teamwork Cooperation Pitch Review Dilemma International Epidemic
	Key Knowledge: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources 	Key Skills: <ul style="list-style-type: none"> measure, mark out, cut and shape materials and components with some accuracy assemble, join and combine materials and components with some accuracy 	Key Skills: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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