

**St. Benedict's Primary School**  
**Design and Technology**  
**KNOWLEDGE AND SKILLS BUILDER**

Design and Technology element from the National Curriculum – DESIGN/GENERATE/DEVELOP

Phase	Context for learning	Knowledge and Skills
EYFS	<p><b>Reception</b>  <b>Topic Traditional Tales Spring 2</b>            Big Question How many characters can you name from traditional tales?            Context – Designing a puppet/mask of a character from Red Riding Hood.            Exploring and using media and materials</p>	<p><b>Skills</b> Choosing appropriate materials for a specific task  <b>Knowledge</b> Some materials are better for some jobs. Think carefully about what you need.</p>
KEY STAGE 1	<p><b>Year 1 Autumn 2 ILP Bright Lights Big City</b>  <b>Big Question – How is a city different to the countryside?</b>            Context – Innovate task: Making souvenirs            Programmes of Study            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>	<p><b>Skills</b> Create a design to meet simple design criteria.  <b>Knowledge</b> Design criteria are the explicit goals that a project must achieve</p>
	<p><b>Year 1 Spring 1 ILP Superheroes</b>  <b>Big Question – What is a superhero?</b>            Context – Mask making            Programmes of Study            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>	<p><b>Skills</b> Create a design to meet simple design criteria.  <b>Knowledge</b> Design criteria are the explicit goals that a project must achieve</p>
	<p><b>Year 1 Summer 2 ILP Paws Claws and Whiskers</b>            Big Question –            Context – Make animal enclosures            Programmes of Study</p>	<p><b>Skills</b> Create a design to meet simple design criteria.  <b>Knowledge</b> Design criteria are the explicit goals that a project must achieve.</p>

<p>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>	
<p><b>Year 1 Summer 2 ILP Paws Claws and Whiskers</b> Big Question – Context – Food packaging and labelling Programmes of Study 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>	<p><b>Skills</b> Create a design to meet simple design criteria. <b>Knowledge</b> Design criteria are the explicit goals that a project must achieve.</p>
<p><b>Year 1 Summer 2 ILP Paws Claws and Whiskers</b> Big Question – Context – Create an imaginary pet Programmes of Study 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>	<p><b>Skills</b> Create a design to meet simple design criteria. <b>Knowledge</b> Design criteria are the explicit goals that a project must achieve.</p>
<p><b>Year 2 Autumn 1 ILP Street Detectives Autumn 1</b> Big Question– What do you find on a street? Context – Make take care signs to put around the community Programmes of Study 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>	<p><b>Skills</b> Generate and communicate their ideas through a range of different methods. <b>Knowledge</b> Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.</p>
<p><b>Year 2 Autumn 1 ILP Street Detectives Autumn 1</b> Big Question– What do you find on a street? Context – Design and make a model of a shop, house or building Programmes of Study Design purposeful, functional, appealing products for themselves and other users based on design criteria.</p>	<p><b>Skills</b> Generate and communicate their ideas through a range of different methods. <b>Knowledge</b> Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.</p>

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	<p><b>Year 2 Spring 1 ILP Muck, Mess and Mixtures</b></p> <p>Big Question– What impact does heating and cooling have on materials</p> <p>Context – Design and help set up an outdoor kitchen for messy, muddy fun.</p> <p>Programmes of Study</p> <p>Design purposeful, functional, appealing products for themselves and other users based on design criteria.</p> <p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p>	<p><b>Skills</b> Generate and communicate their ideas through a range of different methods.</p> <p><b>Knowledge</b> Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.</p>
	<p><b>Year 2 Spring 2 ILP Towers, Tunnels and Turrets</b></p> <p>Big Question– What was life like inside a castle?</p> <p>Context - Making a fortress for the three little pigs</p> <p>Programmes of Study</p> <p>Design purposeful, functional, appealing products for themselves and other users based on design criteria.</p> <p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p>	<p><b>Skills</b> Generate and communicate their ideas through a range of different methods.</p> <p><b>Knowledge</b> Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.</p>
LOWER KEY STAGE 2	<p><b>Year 3 Autumn 1 ILP Heroes and Villains</b></p> <p>Big Question – What is the difference between a hero and a villain?</p> <p>Context – Make a simple flip book animation</p> <p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Skills</b> Develop design criteria to inform a design.</p> <p><b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
	<p><b>Year 3 Spring 1 ILP Tremors</b></p> <p>Big Question – What causes tremors on earth?</p> <p>Context – Make it Rumble! Design and make a seismograph to record the magnitude of a mini earthquake.</p> <p>Programmes of Study</p>	<p><b>Skills</b> Develop design criteria to inform a design.</p> <p><b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>

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<p><b>Year 3 Spring 2 ILP Mighty Metals</b></p> <p>Big Question – How do different forces effect metals?</p> <p>Context – Make a simple spinner</p> <p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Skills</b> Develop design criteria to inform a design.</p> <p><b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
<p><b>Year 3 Spring 2 ILP Mighty Metals</b></p> <p>Big Question – How do different forces effect metals?</p> <p>Context – Design and make a magnetic travel game</p> <p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Skills</b> Develop design criteria to inform a design.</p> <p><b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
<p><b>Year 3 Spring 2 ILP Mighty Metals</b></p> <p>Big Question – How do different forces effect metals?</p> <p>Context – Innovate task: A friend for the Iron Man. Make a sketch to show your design ideas.</p> <p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Skills</b> Develop design criteria to inform a design.</p> <p><b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
<p><b>Year 3 Summer 1 ILP Scrumdiddlyumptious!</b></p>	<p><b>Skills</b> Develop design criteria to inform a design.</p>

<p>Big Question - Context – Design and make packaging for a fantastical fruit or silly sweet. Programmes of Study 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>	<p><b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
<p><b>Year 3 Summer 1 ILP Scrumdiddlyumptious!</b> Big Question - Context – Inventing a smoothie: Plan a recipe for a tempting smoothie Programmes of Study 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>	<p><b>Skills</b> Develop design criteria to inform a design. <b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
<p><b>Year 3 Summer 2 ILP Tribal Tales</b> Big Question - What is a tribe? Context – Stone Age Tool: Design and make an ancient hunting tool that meets the needs of a Stone Age hunter-gatherer Programmes of Study 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>	<p><b>Skills</b> Develop design criteria to inform a design. <b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>
<p><b>Year 3 Summer 2 ILP Tribal Tales</b> Big Question - What is a tribe? Context – Design an Iron Age brooch, pin or piece of jewellery. Programmes of Study 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</p>	<p><b>Skills</b> Develop design criteria to inform a design. <b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user</p>

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<p><b>Year 3 Summer 2 ILP Tribal Tales</b>          Big Question - What is a tribe?          Context –Constructing a monument: Draw a plan of your monument from an aerial perspective          Programmes of Study          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>	<p><b>Skills</b> Develop design criteria to inform a design.  <b>Knowledge</b> Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product’s use, appearance, cost and target user</p>
<p><b>Year 4 Autumn 1 ILP I Am Warrior</b>          Big Question – Why were the Romans so successful?          Context – Becoming a Roman soldier: Design a cassis’ or ‘galea’ to protect your head          Programmes of Study          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>	<p><b>Skills</b> Use annotated sketches and exploded diagrams to test and communicate their ideas.  <b>Knowledge</b> Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p>
<p><b>Year 4 Autumn 2 ILP Potions</b>          Big Question – What is the difference between a solid, liquid and gas?          Context – Creating a potion: Design a label and bottle for the potion          Programmes of Study          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>	<p><b>Skills</b> Use annotated sketches and exploded diagrams to test and communicate their ideas.  <b>Knowledge</b> Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p>
<p><b>Year 4 Spring 1 ILP Traders and Raiders</b>          Big Question – Where did the Anglo Saxons settle and why?          Context – Plan how to make a trading item</p>	<p><b>Skills</b> Use annotated sketches and exploded diagrams to test and communicate their ideas.</p>

	<p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Knowledge</b> Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p>
	<p><b>Year 4 Spring 2 ILP Burps, Bottoms and Bile</b></p> <p>Big Question – How does the body digest food?</p> <p>Context – Plan how to make a model of a working digestive system</p> <p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Skills</b> Use annotated sketches and exploded diagrams to test and communicate their ideas.</p> <p><b>Knowledge</b> Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p>
	<p><b>Year 4 Summer 1 ILP Misty Mountain Sierra</b></p> <p>Big Question- What are the features of a mountain?</p> <p>Context – Plan to create a 3-D model of a mountain range</p> <p>Programmes of Study</p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p><b>Skills</b> Use annotated sketches and exploded diagrams to test and communicate their ideas.</p> <p><b>Knowledge</b> Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.</p>
UPPER KEY STAGE 2	<p><b>Year 5 Autumn 1 ILP Stargazers</b></p> <p>Big Question: What happens when there is no gravity?</p> <p>Context – Rocket Launch: Design a rocket, sketch ideas using pencil and paper or design software.</p> <p>Programmes of Study</p> <p>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.</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>	<p><b>Skills</b> Use pattern pieces and computer-aided design packages to design a product.</p> <p><b>Knowledge</b> A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.</p>

<p><b>Year 5 Spring 1 ILP Alchemy Island</b>  Big Question –  Context – Design a new board game called Alchemy Island  Programmes of Study  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>	<p>Use pattern pieces and computer-aided design packages to design a product.  <b>Knowledge</b> A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.</p>
<p><b>Year 6 Autumn 2 ILP Blood Heart</b>  Big Question -  Context – Make an effective homemade stethoscope.  Programmes of Study  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>	<p><b>Skills</b> Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.  <b>Knowledge</b> Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>
<p><b>Year 6 Autumn 2 ILP Blood Heart</b>  Big Question -  Context – Innovate task: Heart charity fundraiser  Programmes of Study  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>	<p><b>Skills</b> Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.  <b>Knowledge</b> Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>