

Pegasus Primary

Design and Technology

By the time our children leave Pegasus Primary School, they will be:

- Curious, creative and imaginative when designing and making products that solve real and relevant problems
- Risk takers when designing, making and evaluating
- Able to draw on disciplines such as mathematics, science, engineering, computing and art.

See Cornerstones 'Essential skills' (attached) for subject specific aspects in each year groups

What will children know?

NC subject content Key Stage 1

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 a range of existing products
- evaluate their ideas and products against design criteria
- 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

Pupils should be taught to:

- Use the basic principles of a healthy and varied diet to prepare dishes
- Understand where food comes from

NC subject content Key Stage 2

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
- 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

Pupils should be taught to:

- 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

	Autumn 1 Inventors Day	Evaluate <ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world 	
Year 1	Moon Zoom	<p>Design</p> <ul style="list-style-type: none"> to know how design purposeful, functional, appealing products for themselves and other users based on design criteria – alien space craft to know how to generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> to know how to select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] - materials <p>Evaluate</p> <ul style="list-style-type: none"> to know how to investigate and analyse a range of existing products – space toys to know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work – exhibition <p>Technical Knowledge</p> <ul style="list-style-type: none"> to know and be able to apply their understanding of how to strengthen, stiffen and reinforce more complex structures to know, understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Explore space vehicles – axles, levers etc 	<p>See Cornerstones Essential Skills Matrix for Year 1</p> <p>Knowledge and Understanding</p> <p>Practical</p>

	<i>Superheroes</i>	<p><i>D&T knowledge reinforced (taught discreetly through knowledge focus week/day dependent upon the skills to be delivered)</i></p> <p>Cooking and nutrition</p> <ul style="list-style-type: none"> To know how to use the basic principles of a healthy and varied diet to prepare dishes. To know where food comes from 	
Aut 1	<i>D&T Focus Day Inventors</i>	<p>Evaluate</p> <ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world 	
Year 2	<i>Tower, Tunnels and Turrets</i>	<p>Design</p> <ul style="list-style-type: none"> To know how to design purposeful, functional, appealing products for themselves and other users based on design criteria To know how to generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. <p>Make</p> <ul style="list-style-type: none"> To know how to select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing). To know how to select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. <p>Evaluate</p> <ul style="list-style-type: none"> To know how to explore and evaluate a range of existing products To know how to evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> To know how to build structures, to have explored how they can be made 	<p>See Cornerstones Essential Skills Matrix for Year 2</p> <p>Knowledge and Understanding</p> <p>Practical</p>

		stronger, stiffer and more stable.	
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		<input type="checkbox"/> Know how to explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products.	
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	<i>Muck, Mess and Mixture</i>	<p><i>D&T knowledge reinforced (taught discreetly through knowledge focus week/day dependent upon the skills to be delivered)</i></p> <p>Cooking and nutrition</p> <ul style="list-style-type: none"> To know how to use the basic principles of a healthy and varied diet to prepare dishes. To know how to follow a recipe and prepare food To know where food comes from To have explored a range of food products generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and, where appropriate, information and communication technology – messy kitchen 	
Aut 1	<i>D&T Focus Day Inventors</i>	Evaluate	<ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world
Year 3	<i>Mighty Metals</i>	<p>Design</p> <ul style="list-style-type: none"> to know how to 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>Make</p> <ul style="list-style-type: none"> to how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately to know how to select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their 	<p>See Cornerstones Essential Skills Matrix for Year 3</p> <p>Knowledge and Understanding</p> <p>Practical</p>

		<p>functional properties and aesthetic qualities</p> <p>Evaluate</p> <ul style="list-style-type: none"> • to know how to investigate and analyse a range of existing products • to know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	
	<p><i>Scrumdiddlyumptious Gods & Mortals</i></p>	<p>and Nutrition</p> <p>Design</p> <ul style="list-style-type: none"> □ to know how to 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>Make</p> <ul style="list-style-type: none"> □ to know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], □ accurately to know how to 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</p> <ul style="list-style-type: none"> □ to know to investigate and analyse a range of existing products □ to know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	

	<i>Tremors</i>	<p>Design</p> <ul style="list-style-type: none"> □ to know how to select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their 	
		<p>functional properties and aesthetic qualities</p> <ul style="list-style-type: none"> □ to know how to 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>Make</p> <ul style="list-style-type: none"> □ to know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • to know how to 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</p> <ul style="list-style-type: none"> • to know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <p>Technical Knowledge</p> <ul style="list-style-type: none"> • To know how to apply their understanding of how to strengthen, stiffen and reinforce more complex structures • to know understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	
Aut 1	<i>D&T Focus Day Inventors</i>	<p>Evaluate</p> <ul style="list-style-type: none"> ▪ understand how key events and individuals in design and technology have helped shape the world 	

Year 4	<i>Potions</i>	<p>Design</p> <ul style="list-style-type: none"> □ to know how to 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>Make</p>	<p>See Cornerstones Essential Skills Matrix for Year 4</p> <p>Knowledge and Understanding</p> <p>Practical</p>
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		<ul style="list-style-type: none"> • to know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • to know how to 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</p> <ul style="list-style-type: none"> • to know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	
	<i>Blue Abys</i>	<p>Technical Knowledge</p> <ul style="list-style-type: none"> • to know how to understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] <p>Evaluate</p> <ul style="list-style-type: none"> • to understand how key events and individuals in design and technology have helped shape the world 	

	<i>I am Warrior</i>	<p>Make</p> <ul style="list-style-type: none"> • to know how to 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 • to know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <p>Evaluate □</p> <p>to know how to evaluate their ideas and products against their own design criteria and consider the</p>	
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	<i>Traders & Raiders</i>	<p>views of others to improve their work</p> <p>Design</p> <ul style="list-style-type: none"> □ to know how to 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 □ To know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <p>Make</p> <ul style="list-style-type: none"> □ to know how to 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 	
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		<p>Evaluate</p> <ul style="list-style-type: none"> □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <p>Technical Knowledge</p> <ul style="list-style-type: none"> □ To know how to apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	
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	<i>Burps, Bottoms & Bile</i>	<p>Cooking and Food</p> <ul style="list-style-type: none"> □ to know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques <p>Design</p> <ul style="list-style-type: none"> □ to be know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <p>Make</p> <ul style="list-style-type: none"> □ to know how to select from and use a wider range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing), accurately. <p>Evaluate</p> <ul style="list-style-type: none"> □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	
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Aut 1	<i>D&T Focus Day Inventors</i>	<p>Evaluate</p> <ul style="list-style-type: none"> ▪ understand how key events and individuals in design and technology have helped shape the world 	
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Year 5	<i>Beast Creator</i>	<p>Design</p> <ul style="list-style-type: none"> □ To know how to 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>Make</p> <ul style="list-style-type: none"> □ To know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately □ To know how to select from and use a wider range of materials and components, including 	<p>See Cornerstones Essential Skills Matrix for Year 5</p> <p>Knowledge and Understanding</p> <p>Practical</p>
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		<p>Evaluate</p> <ul style="list-style-type: none"> □ construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	
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	<p><i>Star Gazers</i></p>	<p>Design</p> <ul style="list-style-type: none"> □ To know how to 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>Make</p> <ul style="list-style-type: none"> □ To know how to 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</p> <ul style="list-style-type: none"> □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work □ To know how to investigate and analyse a range of existing products <p>Technical Knowledge To know how to apply their understanding of how to strengthen, stiffen and reinforce more complex structure.</p>	
	<p><i>Pharaohs</i></p>	<p>Design</p> <ul style="list-style-type: none"> □ To know how to 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>Make</p>	

		<ul style="list-style-type: none"> • To know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <p>Evaluate</p> <ul style="list-style-type: none"> • To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • To know how to investigate and analyse a range of existing products 	
<p><i>Peasants, Princes and Paupers</i></p>		<ul style="list-style-type: none"> <input type="checkbox"/> Food and Nutrition To know, understand and apply the principles of a healthy and varied diet <input type="checkbox"/> To know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques <input type="checkbox"/> To know, understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed <p>Design</p> <ul style="list-style-type: none"> <input type="checkbox"/> To know how to 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>Make</p> <ul style="list-style-type: none"> □ To know how to 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</p> <ul style="list-style-type: none"> □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work □ 	
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	<i>Scream Machine</i>	<p>Design</p> <ul style="list-style-type: none"> • To know how to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Technical Knowledge</p> <ul style="list-style-type: none"> • To know how to apply their understanding of computing to program, monitor and control their products. • To know, understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	
Aut 1	<i>D&T Focus Day Inventors</i>	Evaluate understand how key events and individuals in design and technology have helped shape the world	

Year 6	Hola Mexico	<ul style="list-style-type: none"> <input type="checkbox"/> and Nutrition To know, understand and apply the principles of a healthy and varied diet <input type="checkbox"/> To know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques <input type="checkbox"/> To know, understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed <p>Design</p> <ul style="list-style-type: none"> <input type="checkbox"/> To know how to 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>Make</p> <ul style="list-style-type: none"> <input type="checkbox"/> To know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <input type="checkbox"/> To know how to select from and use a wider range of materials and components, including construction 	<p>See Cornerstones Essential Skills Matrix for Year 6</p> <p>Knowledge and Understanding</p> <p>Practical</p>
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		<p>materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate</p> <ul style="list-style-type: none"> <input type="checkbox"/> To know how to investigate and analyse a range of existing products <input type="checkbox"/> To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	
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<p>Revolution</p>	<p>Design</p> <ul style="list-style-type: none"> □ To know how to 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</p> <ul style="list-style-type: none"> □ To know how to 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</p> <ul style="list-style-type: none"> □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
<p>Child's War</p>	<p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • To know, understand and apply the principles of a healthy and varied diet • To know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • To know, understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed <p>Make</p> <ul style="list-style-type: none"> • To know how to select from and use a wider range of materials and components, including construction

		<p>materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate</p> <ul style="list-style-type: none"> To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <p>Technical Knowledge</p> <ul style="list-style-type: none"> To know, understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	
	<p>Gallery Rebels</p>	<p>Design</p> <ul style="list-style-type: none"> To know how to 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>Make</p> <ul style="list-style-type: none"> To know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately To know how to 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</p> <ul style="list-style-type: none"> To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <p>Technical Knowledge</p> <ul style="list-style-type: none"> To know, understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	

		<p>Design</p> <ul style="list-style-type: none"> □ To know how to 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>Make</p> <ul style="list-style-type: none"> □ To know how to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <p>Evaluate</p> <ul style="list-style-type: none"> □ To know how to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	
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Additional information

- What is the purpose of the [essential skills matrix](#) and the [identified knowledge](#) within each ILP? Both documents break down learning by year group or phase. Together they state what pupils are expected to know and be able to do at each stage of their education
- What is [progress](#)? Pupils make progress in the subject by knowing and remembering more. It is about connections and schematics, not isolated information.
- What are [components](#) and [composites](#)? Components are the sub-skills a pupil needs to be successful in a complex task (composite).
- What is the relationship between [knowledge](#) and [skills](#)? Both are intertwined - to get better at a subject, both knowledge and skills are required
 - ❖ Knowledge = **know**
ingredients – knowledge of vocabulary, events, people, places, ideas, procedure, transferable knowledge
 - ❖ Skills = **know how** *prepared meal*
- What are [schemata](#)? Schemata (concepts) are interconnected webs of prior knowledge which allow learning of new content

- How can we help pupils retain knowledge in the **long-term memory**? Retrieval practice strengthens memory because you have to recall something you have learnt previously
- How does **dual coding** help pupils learn? Dual coding theory suggests that representing information both visually and verbally enhances learning and retrieval from memory.
- What is **challenge**? Challenge should be considered as meeting curricular goals and ensuring pupils build up the relevant knowledge and skills over time.