CURRICULUM DESIGN for Design and Technology

Intent

At Canada Hill, we believe that Design and Technology should inspire children to become happy, inquisitive and creative learners who are confident in exploring ideas and solving problems. Through practical and purposeful experiences, pupils are encouraged to use their imagination, curiosity and growing knowledge to design and make products that meet real and relevant needs. Our DT curriculum develops children as determined learners, equipping them with the resilience to overcome challenges, refine their ideas and learn from mistakes throughout the design process. We encourage pupils to take pride in their work, persevere when things do not go as planned, and understand that innovation often comes through adapting and improving designs. Children are taught to be responsible designers and makers, considering the needs of others, the suitability of materials and the impact of their choices on the wider world. Through cooking and nutrition, they develop an understanding of healthy lifestyles and make informed choices that support their wellbeing. We nurture compassionate learners who design with empathy, considering how products can improve the lives of others and meet the needs of different users. Collaborative projects provide opportunities for pupils to listen, share ideas and work respectfully with their peers. Our curriculum encourages children to be reflective thinkers, evaluating products and their own work critically to identify strengths and areas for improvement. By learning from both success and failure, pupils develop confidence and independence as designers. Throughout their DT journey, children remain inquisitive, asking questions, exploring how things work and drawing connections between Design and Technology and other subjects such as science and computing. We aim for all pupils to leave Canada Hill with the knowledge, skills and confidence to approach challenges creatively, think innovatively and contribute positively to the world around them.

Implementation

At Canada Hill, Design and Technology is delivered through a carefully sequenced and progressive curriculum that develops pupils' knowledge, technical skills and understanding over time. Through engaging, purposeful projects, pupils follow the design process of investigating, designing, making and evaluating, applying their learning across structures, mechanisms, textiles, cooking and nutrition, and electrical systems. Teaching combines the explicit development of substantive knowledge with practical, hands-on experiences, enabling pupils to build confidence in using tools, materials and techniques safely and effectively. Knowledge and skills are revisited and built upon throughout the curriculum to ensure progression and secure long-term learning. Pupils are encouraged to think creatively, solve problems and evaluate their work critically, developing resilience and determination when refining their ideas. Cross-curricular links, particularly with science, mathematics and computing, provide meaningful opportunities for pupils to apply their learning in real-world contexts. Consideration of sustainability, healthy lifestyles and user needs supports pupils in becoming responsible and reflective designers. Assessment is embedded throughout the design process through observation, discussion, questioning and evaluation of outcomes, enabling teachers to identify misconceptions and inform future

learning. This approach ensures that all pupils develop the confidence, creativity and practical expertise needed to become inquisitive, responsible and capable designers and makers.

Impact

Children leave Canada Hill as confident, creative and reflective designers who can apply their knowledge and skills to solve real and relevant problems. Through a progressive sequence of learning experiences, pupils develop a secure understanding of designing, making and evaluating products, alongside the technical knowledge required to work with structures, mechanisms, textiles, food and electrical systems. Children demonstrate increasing independence as they move through the school. They develop resilience and determination by learning that refining ideas, overcoming setbacks and making improvements are valuable parts of the design process. Pupils become inquisitive learners who ask questions, investigate how existing products work and use research to inform their own designs. They learn to think critically and creatively, applying technical knowledge and practical skills across a range of contexts. Through opportunities to design for a purpose and specific audience, children develop empathy and compassion, considering the needs of others and the wider impact of their choices. Children acquire a strong understanding of healthy lifestyles and nutrition through practical food technology projects. They learn how to prepare food safely and hygienically, understand where food comes from and make informed choices about healthy eating. Opportunities to consider sustainability, resources and responsible consumption help pupils become thoughtful and responsible citizens. By the end of each key stage, pupils can confidently discuss their learning using appropriate technical vocabulary, explain the decisions they have made throughout the design process and evaluate the strengths and weaknesses of their products. Their work demonstrates clear progression in both knowledge and skills, from exploring materials and creating simple products in EYFS to independently designing, making and refining complex products in Key Stage 2. As a result, children leave Canada Hill equipped with the creativity, practical expertise, problem-solving abilities and confidence needed for the next stage of their education. They understand the role of design and technology in shaping the world around them and are prepared to contribute positively as innovative, responsible and reflective members of society

Progression of Knowledge

By the end of EYFS, children will know that: Objects and products are designed and made for a purpose. Different materials have different properties and can be chosen for specific uses. Everyday objects can be taken apart, joined together and changed to create something new. Tools and equipment can help us make things and should be used safely. Ideas can be communicated through talk, drawings, models and play. Designs can be adapted and improved during the making process. Structures need to be stable and strong to stand or work effectively. Food comes from different sources and can be prepared in different ways. Products can be evaluated by considering what works well and what could be improved. Designers, engineers, inventors and makers create products that help people solve problems and meet needs.

Year 1/2 Curriculum

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A	**Wheels and axels - Safari Trucks** Learning Goals / Outcomes: Year 1's will evaluate an existing vehicle, design, list materials and tools and evaluate their safari truck. Children can be extended to create more complete vehicles. Year 2's will evaluate 3 existing vehicles, design, list materials and tools and evaluate their safari truck, thinking about what they would change in more detail. Children can be extended to create more complete vehicles. GD: Children to be extended to make their truck using straws and pegs for moving axles.	Xmas Craft Share	**Puppets – Levers and mechanisms** Learning Goals / Outcomes: To understand the role puppets had in story telling in the past. To link the type of character they want to make to their design. To choose the materials they use by the characteristics of the material. To know how to plan, carry out and evaluate their ideas. To learn how to use a lever in their product to make a moving part.			**Savoury Scones** Learning Goals / Outcomes: Year 1's - Children will be able to draw picture to design their scones. They will have a picture to help them write a method for their scones. With support children will be able to grate, cut and chop their own ingredients. They will be able to talk about how they made their scones. Year 2's - Children will be able to draw picture to design their scones. Children will be able to grate, cut and chop their own ingredients. They will be able to talk about and write about how they made their scones independently. GD: Children to confidently use equipment. Children to provide a thoughtful evaluation.
Year B		**Binca Bookmarks** Learning Goals / Outcomes: Year 1's will be able to use at least a running stitch of different colours in their design, extending to a horizontal and diagonal stitch. They will be able to follow their design and		**Design and Make a Playground** Learning Goals / Outcomes:		**Potato Salad** Learning Goals / Outcomes: Children will learn how to cut ingredients using a knife. That all food comes from plants or animals That food has to be farmed, grown elsewhere (e.g. home) or caught.

		evaluate their bookmark thoughtfully. Year 2's will be able to use at least a running stick and horizontal stitch in their design, extending to a diagonal stitch and a running stitch of different lengths. They will be able to follow their design and evaluate their bookmark thoughtfully and suggest improvements. Xmas Decs Xmas Craft Share				How to prepare simple dishes safely and hygienically, without using a heat source

Year 3/4 Curriculum

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A		**Tudor Photo Frames** Learning Goals / Outcomes: Children will learn to design and make a picture frame which is free-standing and suited its purpose. It will also include a wall hanging feature. GD: Children make notes of things that they had to change during the making process. Children use innovative design ideas to make their photo frame suit its purpose.	**Sewing bags** Learning Goals / Outcomes: Children should be able to design and make a bag for a purpose. Children will learn the running stitch and how to sew a button. GD: Children make notes of things that they had to change during the making process. Children to also use innovative design ideas to make their bag.			**Pneumatic Toys** Learning Goals / Outcomes: Children to design, make and evaluate their rainforest moving toy. Children will be able to answer questions about toys that use air to work. Children will be able to draw and label the component parts of one of the pneumatic systems and explain how they think that it works. Children will be able to investigate how pneumatic systems work. Children will be able to use a simple electrical circuit to light up the toy. GD: Children will be able to explain in more detail how pneumatic toys work and use this knowledge to design and make their toy, problem solving and trying a range of strategies to make it work. **Savoury Wraps (Y3 only)** Children to design, make and evaluate a healthy wrap. Children to assess their planning based on their investigation and evaluation.
Year B		**Sewing – Stone Age Shoes** Learning Goals / Outcomes: Children to design and make their prototype shoe for a purpose.		**Pizza Making** Learning Goals / Outcomes: Children to research and use that research, along with a set of design success criteria to design their own pizza.They will make pizza		**Bird Hides** Learning Goals / Outcomes: Children design, make and evaluate a portable or permanent bird hide. Children will be able to

		Children to evaluate their shoe and whether it is fit for purpose. GD: Children able to design and make their prototype shoe for a particular purpose and add features to ensure it is aesthetically desirable. Children able to make notes of things that they had to change during the making process. Children to use innovative design ideas to make their prototype shoe		dough, chop and grate toppings to be appealing to the person eating it. They will evaluate their finished pizza and suggest improvements. GD: Children design and make their pizzas for a particular audience and add features to ensure it is aesthetically desirable. Children make notes of things that they had to change during the making process. Children to use innovative design ideas and advanced cooking techniques to make their pizza.		measure accurately to the nearest mm. Children to be able to use a saw to cut wooden batons (less than 1cm by 1 cm) at 90 degrees GD: To be able to use a saw to cut wooden batons (less than 1cm by 1 cm) at 45 degrees Savoury Wraps (Y3 only) Children to design, make and evaluate a healthy wrap. Children to assess their planning based on their investigation and evaluation.

Year 5/6 Curriculum

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A		**The Great Greek Bake off** Learning Goals / Outcomes: Children will design and make a bread product with support and guidance. • Explain why choices were made after discussion with the teacher. • Have demonstrated some skills when making the product. ...most children will be able to: • Use their experiences of food ingredients and cooking methods to help generate ideas. • Explain why they have chosen certain foods and processes and link them to their design criteria. • Produce an order of work which includes an annotated diagram and chosen equipment appropriately. • Make and evaluate their bread product against objective design criteria. GD: Use findings from their investigative work to draw up a design specification for a new bread product. • Draw on their understanding of the characteristics and properties of foods to select appropriate ingredients. • Work accurately to make bread products that match the sensory properties required; have implemented improvements as the design developed. • Evaluate how successful their product is with reference to their original design criteria.		**Sock Monsters** Learning Goals / Outcomes: Children will be expected to carry out market research to support their design. Following their design, they will make their sock monster. They will practice several stitching techniques such as overstitch and running stitch. Children will evaluate their designs. GD: Once made and evaluated, the children can investigate the costings of their product and also the sustainability of the product.		

Year B	**Building Bridges** Learning Goals / Outcomes: Children will design and build a bridge to span a 30cm gap, considering financial expense, strength and aesthetics. Children will research and develop design criteria to inform their own design.		**Moving Toys - Automata** Learning Goals / Outcomes: Children will create a moving toy based on our Coasts topic using mechanisms such as cams. Children will have created a sturdy structure using prior knowledge of bridge building to produce a moving toy using their knowledge of cams, rotary movement and linear movement. GD: All of the above, with the addition of a frame which is sturdy and aesthetically pleasing.			

	Curriculum experience AB or BA child						
	EYFS	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Sixth Year
AB	Children will have a wide range of opportunities to develop their fine motor skills through modelling using a range of small tools, including scissors, paint brushes and cutlery. Children will be encouraged to draw their designs and will begin to show accuracy and care when drawing. Children will have many opportunities to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children will be encouraged to share their creations, explaining the process they have used.	Wheels and axels - Safari Trucks Xmas Craft Share Puppets – Levers and mechanisms Savoury Scones	Binca Bookmarks Design and Make a Playground Potato Salad	Tudor Photo Frames Sewing bags Pneumatic toys Savoury wraps	Sewing – Stone Age Shoes Making pizzas Bird hides	The Great Greek Bake off Sock Monsters	Building Bridges Moving Toys - Automata

BA	Children will have a wide range of opportunities to develop their fine motor skills through modelling using a range of small tools, including scissors, paint brushes and cutlery. Children will be encouraged to draw their designs and will begin to show accuracy and care when drawing. Children will have many opportunities to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children will be encouraged to share their creations, explaining the process they have used.	Binca Bookmarks Design and Make a Playground Potato Salad	Wheels and axels - Safari Trucks Xmas Craft Share Puppets – Levers and mechanisms Savoury Scones	Sewing – Stone Age Shoes Making pizzas Bird hides Savoury wraps	Tudor Photo Frames Sewing bags Pneumatic toys	Building Bridges Moving Toys - Automata	The Great Greek Bake off Sock Monsters
End point:	By the end of EYFS, children confidently explore and create using a variety of materials, tools and techniques. They design and make simple products, solve practical	By the end of Key Stage 1, pupils confidently design, make and evaluate purposeful products. They have experience of preparing healthy foods, constructing structures, creating textile products and exploring simple mechanisms and wheel-and-axle systems. They can explain their choices, use tools safely and suggest improvements to their designs.		By the end of Key Stage 2, pupils can independently design, make and evaluate purposeful products that solve real and relevant problems. They apply their understanding of structures, textiles, mechanisms and food technology to create products that meet a range of user needs and design criteria. Through projects such as sewing bags and slippers, constructing bridges, bird hides and freestanding photo frames, developing pneumatic toys, creating sock monsters, and preparing and cooking pizzas, wraps and bread, pupils select appropriate materials, use tools and equipment safely and accurately, and evaluate their products to refine and improve their designs.			

	problems, develop fine motor control and begin to evaluate their work by talking about what they have created.		

The Skills of DT (Disciplinary Knowledge)

Mixed Year Group	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
Year 1/2	Design purposeful, functional, appealing products for themselves and other users based on design criteria Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Summer A – Savoury Scones Autumn B – Binca Bookmarks Spring B – Design and Make a Playground Summer B – Potato Salad Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Summer A – Savoury Scones	Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Summer A – Savoury Scones Autumn B – Binca Bookmarks Spring B – Design and Make a Playground Summer B – Potato Salad Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms	Explore and evaluate a range of existing products Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Summer A – Savoury Scones Spring B – Design and Make a Playground Summer B – Potato Salad Evaluate their ideas and products against design criteria Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Summer A – Savoury Scones Autumn B – Binca Bookmarks Spring B – Design and Make a Playground Summer B – Potato Salad	Build structures, exploring how they can be made stronger, stiffer and more stable Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Spring B – Design and Make a Playground Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Autumn A – Wheels and Axels, Spring A- Puppets Levers and Mechanisms Spring B – Design and Make a Playground	Use the basic principles of a healthy and varied diet to prepare dishes Summer A – Savoury Scones Summer B – Potato Salad Understand where food comes from. Summer A – Savoury Scones Summer B – Potato Salad

Mixed Year Group	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
	Autumn B – Binca Bookmarks Spring B – Design and Make a Playground Summer B – Potato Salad	Summer A – Savoury Scones Autumn B – Binca Bookmarks Spring B – Design and Make a Playground Summer B – Potato Salad			
Year 3/4	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 Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Spring B – Pizza Making Summer B – Bird Hides Summer Heatree Week Y3 -Savoury Wraps Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Summer B – Bird Hides Summer Heatree Week Y3 -Savoury Wraps	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Spring B – Pizza Making Summer B – Bird Hides Summer Heatree Week Y3 -Savoury Wraps 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 Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Spring B – Pizza Making Summer B – Bird Hides Summer Heatree Week Y3 -Savoury Wraps	Investigate and analyse a range of existing products Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Spring B – Pizza Making Summer B – Bird Hides Summer Heatree Week Y3 -Savoury Wraps Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Spring B – Pizza Making Summer B – Bird Hides Summer Heatree Week Y3 -Savoury Wraps 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 Autumn A - Tudor Photo Frames Autumn B - Sewing Stone Age Shoes Summer B – Bird Hides Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Summer A - Pneumatic Toys Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Summer A - Pneumatic Toys Apply their understanding of computing to program, monitor and control their products. Spring A – Making my Programme in Scratch (computing unit) Summer A - Making my Programme in Scratch (computing unit) Autumn B - Making my Programme in Scratch (computing unit) Spring B - Making my Programme in Scratch (computing unit)	Understand and apply the principles of a healthy and varied diet Spring B – Pizza Making Summer Heatree Week Y3 -Savoury Wraps Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Spring B – Pizza Making Summer Heatree Week Y3 -Savoury Wraps Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Summer Heatree Week Y3 -Savoury Wraps

Mixed Year Group	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
			Autumn A - Tudor Photo Frames Spring A – Sewing Bags Summer A - Pneumatic Toys Autumn B - Sewing Stone Age Shoes Summer B – Bird Hides		
Year 5/6	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 Autumn A – Great Greek Bake Off Spring A – Sock Monsters Autumn B – Building Bridges Spring B – Moving Toys - Automata Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Autumn A – Great Greek Bake Off Spring A – Sock Monsters Autumn B – Building Bridges Spring B – Moving Toys - Automata	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Autumn A – Great Greek Bake Off Spring A – Sock Monsters Autumn B – Building Bridges Spring B – Moving Toys - Automata 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 Autumn A – Great Greek Bake Off Spring A – Sock Monsters Autumn B – Building Bridges Spring B – Moving Toys - Automata	Investigate and analyse a range of existing products Autumn A – Great Greek Bake Off Spring A – Sock Monsters Autumn B – Building Bridges Spring B – Moving Toys - Automata Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Autumn A – Great Greek Bake Off Spring A – Sock Monsters Autumn B – Building Bridges Spring B – Moving Toys - Automata Understand how key events and individuals in design and technology have helped shape the world Autumn B – Building Bridges	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Autumn B – Building Bridges Spring B – Moving Toys – Automata Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Spring B – Moving Toys - Automata Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Spring A – Electricity (Science unit) Apply their understanding of computing to program, monitor and control their products. Spring A – programming A (computing unit)	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 Autumn A – Great Greek Bake Off Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.