Hillcross Primary Design and Technology Curriculum

EYFS

Reception Expressive Art and Design - DT focus							
	Topic	**Autumn 1:**	**Autumn 2:**	**Spring 1:**	**Spring 2:**	**Summer 1:**	**Summer 2:** **Whole School Topic**
DT focus	**DT** **(Creative workshop)** **EYFS Statutory Framework** **Birth To five matters** **Development Matters**	**Work in response to what they hear and observe.** **Join different materials and explore different textures.** **Provide a range of materials and tools and teach children to use them with care and precision. Promote independence,**	**Create on a large scale - play with a wide range of media and materials.** **Return to and build on their previous learning, refining ideas and developing their ability to represent them** **Create collaboratively, sharing ideas, resources and skills.**	**Develop own ideas and models - interpreting and appreciating what they hear, respond to and observe.** **Encourage them to think about and discuss what they want to make. Using a range of materials** (verbally discuss- in prep for design sheets) • **Uses their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking**	- **Promote the development of children's artistic and cultural awareness in sculpture and building** - **Explore, use and refine a variety of artistic effects to express their ideas and feelings** **Uses various construction materials, joining pieces, stacking vertically and horizontally, balancing.** **Uses tools for a purpose.**	**Joining techniques - explore and play with a wide range of media and materials.** **Children use different techniques for joining materials** **Reflect with children on how they have achieved their aims** **Expresses and communicates working theories, feelings and understandings using a range of art forms, e.g. sculpture/ painting/ collage/ building**	**Design and build with an aim, approaching in a different way when needed.** **ELG: Safely use and explore a variety of materials, tools and techniques** -
	Vocabulary	**join, tape, glue, stick, bend,** **collage, small/large scale, paper, plastic, cardboard,**	**join, tape, glue, stick, bend, push, punch, tie, plunge,**	**Woodwork - saw/ nails/ hammer/ wood/ hit/**	**mod roc/papier mâché- model, 2D, 3D, Join, create, Design**	**collage, weave, stack, small/large scale, fabric, paper, plastic, cardboard,**	**Create, Design, review, problems, solutions, reflect Review**
	Outcomes	**joining** - split pins/ stapler/ whole punch/ treasury tags - link to safety	**Cooking -** use of tools- Knives to cut/ spoon to mix/ rolling pins to roll	**WOODWORK**- using tools safely - design and create (given to them to complete) (Links to opening of Wood work area in outside provision)	-**Design and create** a set outcome, e.g. a boat -introduce planning sheets to pre plan models - joining of larger boxes / items	**Cooking -** use of tools- Knives to cut/ spoon to mix/ scales to weigh/ rolling pins to roll	**Independently** use of range of tools and joining techniques Including woodwork area outside
	Progression of tools and materials (Continuous provision)	**Malleable -** scented and adding texture - rolling pins/ cutters/ knives/ forks/ spoons (To include Playdough & shaving foam) **Creative workshop** - small items and collage - use of scissors to cut - gluing techniques (Need teaching)	**Malleable- scented** and adding texture - rolling pins/ cutters/ knives/ forks/ spoons Use of tools (To include Playdough & shaving foam, salt dough/ cornflour) **Creative workshop** - Joining tools - split pins/ treasury tags/ scissors/ hole punch/ PVA glue	**Malleable**- use of tools to create set models (To include Playdough & shaving foam, salt dough/ cornflour, salt) **Creative workshop -** wood work Safety theme (Move to outside in spring 2)- **link to 2D and 3D shape work**	**Malleable**- use of tools to create own models (To include Playdough & shaving foam, salt dough/ cornflour, salt) **Creative workshop** - all joining techniques/ materials to include **3D and 2D items** - sort by 3D shape - cylinders/ cubes/ cuboids.	**Malleable**- use of tools to create own models (To include Playdough & shaving foam, salt dough/ cornflour, salt, Clay) **Creative workshop** - use of planning sheets to create for purpose.	**Malleable**- use of tools to create own models (To include Playdough & shaving foam, salt dough/ cornflour, salt, Clay) **Creative workshop** - independently use a range of tools, joining techniques and materials to Design and create

Hillcross Primary Design and Technology Curriculum

KS1

		Year 1			Year 2		
Topic		Autumn 2 – Carnival of the animals	Summer 1 - Fee Fi Fo Fum	Summer 2 – Whole School Topic	Autumn 2 - Hearts and Lanterns	Spring 2 - Disaster Strikes	Summer 1 - A Journey to Discovery
Outcome/Product		Lever and slide class animal book https://www.planbee.com/moving-pictures-the-complete-series	Puppets out of card (story characters)	Food Technology – Fruit skewers and salad	Design and Technology - Running stitch to create a puppet.	Emergency services vehicle - wheels and axles	To make a strong structure - house Research different houses around the world https://www.planbee.com/homes-the-complete-series
NC knowledge/understanding	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.	• Generate, develop, model and communicate their ideas through talking. • Design appealing products for themselves	• Design purposeful, functional, appealing products for themselves and other users based on design criteria, • Generate, develop, model and communicate their ideas through talking and templates.	• Communicating their ideas through talking and drawing.	• Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology **(researching other houses around the world).**
	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 range of tools and equipment to perform practical tasks [for example, cutting, joining and finishing]	• Select from and use a range of tools and equipment to perform practical tasks [for example, cutting. • Select from and use a wide range of ingredients, according to their characteristics.	• Select from and use a range of tools and equipment to perform practical tasks, example, cutting.	• Select from and use a range equipment to perform practical tasks [for example joining and finishing] • Select from and use a wide range of materials and components, including construction materials.	• 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 and textiles according to their characteristics.
	Evaluate	• Evaluate their ideas and products against design criteria	• Explore and evaluate a range of existing products. • Evaluate their ideas and products against design criteria	• Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria	• Evaluate their ideas and products against design criteria	• Explore and evaluate a range of existing products	• Evaluate their ideas and products against design criteria
	Technical knowledge	• Explore and use mechanisms [for example, levers and sliders in their products.	• Build structures, exploring how they can be made stronger, stiffer and more stable (make a mock-up using paper and discuss why this material isn't suitable for a puppet)	• Understand where food comes from. • Use the basic principles of a healthy and varied diet to prepare dishes	• Exploring how they can be made stronger, stiffer and more stable.	• Explore and use mechanisms [for example, wheels and axles], in their products.	• Build structures, exploring how they can be made stronger, stiffer and more stable.
Future Careers		• An illustrator • Set designer • An author (pull the lever books)	• A puppeteer, The Lion King and Polka Theatre	• Chef • Food critic • Dietician	• Fashion designer • Costume maker	• Mechanical engineer • Mechanic • Car designer	• Construction worker • Architect • Carpenter • Window fitter

Significant people and events	• Jane Wolfe (author) • Archimedes (history of lever)	• Jim Henson (Sesame Street)	• Jamie Oliver (link to how he changed healthy schools) • Rustie Lee, Caribbean salad	• Patrick Grant (Great British Sewing Bee)	• John Braithwaite (invented the first fire engine)	• Zaha Hadid • Maya Lin (award by Barack Obama) • Renzo Piano (Shard)
Skills	• Cutting using a one-handed tool (scissors) • Joining techniques by using glue	• Cutting using a one-handed tool (scissors) • Joining techniques by using a split pin	• Cutting low resistance foods with a table knife. • Thread soft fruit. • Cut and mix a salad together	• Threading a needle • Joining (running stitch)	• Joining (apply threading) • Shaping (folding)	• Cutting (scissors) • Shaping (folding) • Joining (sticky tape, paper clips, stapler and glue)
Tools and resources	• Scissors • Card • Template (if needed) • Glue	• Scissors • Split pins • Templates of characters	**Ingredients to be ordered by teams** • Fruit and vegetables of your choice • Chopping boards • Wooden skewers • Table knife	• Scissors • Felt • Stuffing material • Needle • Thread	• Wheels • Axles	**Ask parents on newsletter beforehand to ask for donations** • Junk modelling materials • Scissors • Tape • Glue
Key Vocabulary .	Functional Design Levers	Join Split pin Template Strengthen Stiffen	Design Appealing Products Healthy food Varied diet	Design Running stitch Joining	Wheels Axles	Stronger Stable Stiffer Construction materials

Hillcross Primary Design and Technology Curriculum

Lower KS2

		Year 3			Year 4		
	Topic	Autumn 1 - Supermarket Sweep	Spring 1 - Settle Down	Summer 1 - Dig Deep	Autumn 2 - Journey Over Europe	Spring 1 - Battle Stations	Summer 1 - Playing Cat and Mouse
	Outcome/Product	Savoury Tart	Pneumatic toy - Anglo Saxon Monster	Photo Frame	Mini GreenHouse Plant some cress/seeds in the greenhouse and observe over time.	Tapestry	Light up Box - Write an equality slogan
NC knowledge/ understanding	Design	• Understand and apply the principles of a healthy and varied diet	• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes,	• 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	• 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,	• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and prototypes and computer-aided 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,
	Make:	• Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.	• 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 tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	• 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, according to their functional properties and aesthetic qualities	• 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 tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
	Evaluate	• Evaluate their ideas based on the principles of a healthy diet. • Understand how key events and individuals in design and technology have helped shape the world • 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 (Lonnie Johnson, creator of Nerf Water)	• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	• 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 (look at Kew Garden and Eden Project)	• Understand how key events and individuals in design and technology have helped shape the world	• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
	Technical knowledge		• Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures		• Understand and use electrical systems in their products [for example, series circuits incorporating switches and bulbs)

							• apply their understanding of how to strengthen, stiffen and reinforce more complex structures
Future careers		• Chef • Food critic • Restaurant entrepreneur	• Toy designer • Robotics	• Joiner • Carpenters	• Gardener • Structural engineer • Landscape designer	• Upholsterer • Tailor	• Lighting director
Significant people and events		• Nadiya Hussein https://www.nadiyahussain.com/recipe/goats-cheese-and-caramelised-onion-tart/	• Lego Pneumatics (progression) • https://www.pneumatictips.com/pneumatics-ages-timeline-evolution-2/		• Charles Lucien Bonaparte (invented the greenhouse)	• Bishop Odo of Bayeux (first creator of tapestry)	• Stages of the invention of the light bulb (including Thomas Eddison)
Skills		• Snip (kitchen scissors) • Claw cut (vegetable knife). • Grate (grater) • Grill/toast (grill/oven)	• Measure (ruler) • Joining (sellotape) • Cutting (scissors) • Finishing	• Measure (ruler) • Cut (hacksaw) • Joining (glue gun) • Finishing (decorate photo frame for aesthetic product and sanding)	• Cutting (scissors) • Shaping (folding) • Joining (glue guns to join lolly pop sticks for structure and staples for cellophane)	• Thread (threading embroidery thread) • Joining (needle and thread)	• Joining • Joining (electrical circuit together) • Cutting (use pliers to cut the wire)
Tools and resources		• Ingredients • Kitchen scissors • Vegetable knife • Grater	• Scissors • Sellotape • Decorative items • Ruler	• Sandpaper • Wood • Hacksaws • Glue gun and glue	• Cellophane • Lollipop sticks • Glue gun • Glue gun sticks • Stapler • Staples	• Needles • Thread	• Box • Tracing paper • Black pen • Long roll of wire • Pliers • Coloured cellophane
Key Vocabulary .		Claw cut Snip Grate Cut Savoury	Annotated sketches Pneumatic Mechanical systems Aesthetic characteristics	Strengthen Stiffen Innovative Functional Appealing	Annotated sketch Functional Aesthetic	Back stitch Computer aided design Running stitch Tapestry	Functional Appealing Annotated sketches Electrical systems Circuits

Hillcross Primary Design and Technology Curriculum
Upper KS2

		Year 5			Year 6		
	Topic	Autumn 1 - We're the kids in America	Spring 2 - Oh, I do like to be beside the seaside	Summer 2 - Whole School Topic	Autumn 1 - Everybody Wants to Rule the World	Spring 2 - Peace at Last	Summer 2 - Whole School Topic
	Outcome/Product	Moving toys (like a Jack in the box, popping up and down) Focus on cams system and a lever.	Making a pulley system	Savoury dish- Entrepreneurs - Dragons Den	Make a wooden chair with a cushion	Moving toy (links to Year 3 and 5)	Identity bag
NC Knowledge/ Understanding	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	• Use research and develop design criteria to inform the design of innovative, functional product • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and pattern pieces	• 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	• 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 and pattern pieces.	• 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	• 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 prototypes, pattern pieces.
	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 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	• Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	• 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	• 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	• 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	• 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	• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed (links to science and geography) • Understand how key events and individuals in design and technology have helped shape the world	• 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	• 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	• 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

			technology have helped shape the world (Archimedes created the pulley system)				
	Technical knowledge	• Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages	• Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures		• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	• 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	• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
Future careers		• Joiner • Carpenters	• Toy designer • Robotics	• Chef • Food critic • Dietician	• Joiner • Carpenters • Structural engineer	• Lighting director • Structural engineer • Computer programmer	• Upholsterer • Tailor
Significant people and events		• Leonardo da Vinci.	• Archimedes (invented the pulley)	• https://www.cornishpastyco.com/history/	• https://www.gq.com/story/the-12-most-iconic-chairs-of-all-time	• Michael Faraday and the invention of the electric motor. • https://www.sheffield.ac.uk/nfca/researchandarticles/fairground rides	• https://bellatory.com/fashion-accessories/FashionHistoryPursesHandbags#:~:text=%20Fashion%20History%3A%20Purses%20and%20Handbags%20%201,slim%20silhouette%20when%20skirts%20became%20progressively...%20More%20 • Sten Gustaf Thulin
Skills		• Thread (axle through the cams) • Measure (accurate measuring of the lever) • Cut (hacksaws)	• Threading (pulley system) • Joining	• Rolling (rolling pin) • Mixing/rubbing in (mixing ingredients) • Weighing (weigh the ingredients) • Bake • Crimping	• Measure • Cutting (hacksaw) • Joining (nails and a hammer) • Joining (glue gun) • Cutting (craft knife) • Finishing (sanding down)	• Strengthening and stiffening (structure) • Joining (glue gun and the circuit) • Thread (flying out seats?)	• Cutting (pinking scissors) • Threading and joining (needle and thread) • Finishing (sew initials onto bag). • Tease (tease out the cord) • Joining (buttons)
Tools and resources		• Hacksaw • Ruler • Axle • Cams • Glue	• Wooden pulleys (with groove) • String/thread/ cotton • Cotton reels	• Bowl • Mixing spoon • Scales • Rolling pin • Knife Ingredients Butternut squash Feta cheese Beetroot Chickpeas (tinned) *Extra ingredients for the pastry* *Flour* *Butter*	• Hammers • Nails • Kitchen sponges • Felt • Wood • Craft knife • Sandpaper • Thick card/cardboard	• Recycled material • Lollypop sticks • Electrical circuits • Motor/bulb/buzzer/switch • Crumble & Crumble software	• Pinking scissors • Needle • Different types of thread, cotton thread for making the bag, embroidery thread to finish initials and cord. • Material • Eyelets • Buttons
Key Vocabulary .		Mechanical systems Cams Functional Appealing Exploded diagram	Functional Annotated sketches Prototypes Pulley	Appealing Prepare Savoury Crimping Rubbing in	Annotated sketches Cross-sectional Exploded diagrams Functional Appealing	Construct Crumble Electrical Mechanism	Pinking scissors Eyelets Buttons Functional/Appealing