Hallwood Park School and Nursery: Design & Technology Long Term Overview

	Autumn Term	Spring Term	Summer Term
Nursery	Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials. Make simple models which express their ideas.	Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.
Continuous Provision	Explore different materials freely, to develop their ideas about how to use them and what to make, develop their own ideas and then decide which materials to use to express them, join different materials and explore different textures, create closed shapes with continuous lines, and begin to use these shapes to represent objects, explore colour and colour-mixing.		
Reception	Make use of props and materials when role playing characters in narratives and stories	Create collaboratively sharing ideas, resources and skills.	Share their creations, explaining the process they have used; Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;
KS1 Cycle 1 (2023-24)	**Structures – constructing a windmill** Identify features that would appeal to the client. Explain how their design appeals. Make a stable structure out of card, tape and glue. Making functioning turbines and axels. Say what is good and what they could do better.	**Structures – Making Baby Bears Chair** Identify man-made and natural structures. Identify stable and unstable structural shapes. Contribute to discussions. Identify features that make a chair stable. Work independently to make a stable structure, following a demonstration. Explain how their ideas would be suitable for Baby Bear. Produce a model that supports a teddy, using the appropriate materials and construction techniques. Explain how they made their model strong, stiff and stable.	**Mechanisms – making a moving monster** Identify the correct terms for levers, linkages and pivots. Analyse popular toys with the correct terminology. Create functional linkages that produce the desired input and output motions. Design monsters suitable for children, which satisfy most of the design criteria. Evaluate their two designs against the design criteria, using this information and the feedback of their peers to choose their best design. Select and assemble materials to create their planned monster features. Assemble the monster to their linkages without affecting their functionality.
KS1 Cycle 2 (2022-23)	**Textiles – Puppets** Join fabrics using pins, staples and glue; design a puppet and create a template; join their two	**Food – Fruit and Vegetables** Describe fruits and vegetables and explain why they are a fruit or vegetable; name places that fruits and	**Food –A balanced diet** Name the main food groups and identify foods from each group; describe the taste, texture and smell of a

	puppet's faces together as one; decorate a puppet to match their design.	vegetables grow; describe characteristics of fruits and vegetables; prepare fruits and vegetables to make a smoothie.	given food; think of four different wrap ideas, considering flavour combinations; construct a wrap.

LKS2 Cycle 1 (2023-24)	**Food: Eating seasonally** Learn about various fruits and vegetables, and when, where and why they are grown in different seasons. Discover the relationship between colour and health benefits.	**Structures: Constructing a castle** Identify and learn about the key features of a castle, before designing and making a recycled-material castle (structure).	**Mechanical systems: Making a slingshot car** Using a range of materials, design and make a car with a working slingshot mechanism and house the mechanism using a range of nets.
LKS2 Cycle 2 (2022-23)	*Textiles: Cross-stitch and appliqué* Learn and apply two new sewing techniques – cross-stitch and appliqué. Utilise these new skills to design and make a cushion or Egyptian collar.	*Electrical systems: Torches* Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design.	*Digital world: Electronic charm* Design, develop a program, house and promote a Micro:bit electronic charm to use in low-light conditions.
UKS2 Cycle 1 (2022-2023)	**Electrical systems:** Steady hand game Understand what is meant by fit for purpose design and form follows function. Design and develop a steady hand game using a series circuit, including housing and backboard.	**Food:** What could be healthier? Discover the farm to fork process, understand the key welfare issues for rearing cattle. Compare the nutritional value of existing sauces and develop a healthier recipe.	**Mechanical systems:** Making a pop-up book Create a functional four-page pop-up storybook design, using lever, sliders, layers and spacers to create paper-based mechanisms.
UKS2 Cycle 2 (2023-24)	**Textiles:** Stuffed toy Design a stuffed toy and make decisions on materials, decorations and attachments (appendages), after learning how to sew a blanket stitch.	**Structures and Bridges** Test and analyse various types of bridge to determine their strength and stability. Explore material properties and sources, before marking, sawing and assembling a wooden truss bridge.	**Digital world:** Navigating the world Design and program a navigation tool to produce a multifunctional device for trekkers using CAD 3D modelling software. Pitch and explain the product to a guest panel.