Holly Hill Primary and Nursery School
Design and Technology Policy

1. Subject Intent

General Statement

The Design and Technology curriculum at Holly Hill enables children to use creativity and imagination. This allows opportunities for pupils to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. As a subject it should enable all children to learn how to take risks, become resourceful, innovative, enterprising and capable. Through evaluation of past and present design and technology, the children will develop a critical understanding of its impact on daily life and the wider world.

Through our Design and Technology curriculum we make links to our whole school curriculum intent statement. The aspects which are particularly significant to Design and Technology are:

- Balance of knowledge and skills
- Emotional well-being and healthy relationships
- Experiences and opportunities
- Preparation for adult life and work
- Outdoor learning

Specific Aims

The National Curriculum outlines the following aims for Design and Technology:

- develop the creative, technical, and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- critique, evaluate and test their ideas and products and the work of others.
- understand and apply the principles of nutrition and learn how to cook.

At Holly Hill the Design and Technology curriculum is designed so that we meet the National Curriculum aims through a progression of skills and knowledge taught in the sequence below:

Three and Four-Year-Olds	**Personal, Social and Emotional Development**	Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
	Physical Development	Use large-muscle movements to wave flags and streamers, paint and make marks. Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors

	Understanding the World	Explore how things work
	Expressive Arts and Design	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, in order 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. Create closed shapes with continuous lines, and begin to use these shapes to represent objects.
Reception	**Physical Development**	Progress towards a more fluent style of moving, with developing control and grace. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
	Expressive Arts and Design	Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills
ELG	**Physical Development – Fine Motor**	Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.

DESIGN AND TECHNOLOGY	**CYCLE A**		**CYCLE B**	
YEAR 1/2	Structures	Textiles	Mechanisms	Food tech
YEAR 3/4	Linkages	Textiles	Electrical systems	Food tech
YEAR 5/6	Food Tech	Textiles	Mechanical systems	Computer aided design

Rationale

At Holly Hill, Design and Technology coverage is organised in this way to allow for a progression of skills throughout the learning journey. The curriculum is structured in such a way to allow all children the opportunity to design, make and evaluate an individual project twice during each year of their time at Holly Hill. This allows for each age phase to complete unit of textiles; mechanical systems; and cooking and nutrition projects. Additionally, KS1 also completes a structures project; LKS2 completes an electrical systems project and UKS2 a Computer Aided-Design project which has been designed to enable the children to learn how Design and Technology have changed throughout history and the impact these developments have on our life today.

2. Implementation

Because at Holly Hill Primary and Nursery we understand that learning takes place when there is a change to long-term memory, we outline the key knowledge for a unit of work on a knowledge organiser. In Design and Technology key knowledge is knowledge that relates directly to the National Curriculum attainment targets.
Progression of skills is mapped out using a skills ladder.
Design and Technology will be planned by class teachers and may be delivered by non-specialist teaching staff. The exception to this is practical lessons which due to safety will be taught by class teachers.
Design and Technology will be taught in either unit blocks with the exception of the cooking and nutrition days which can be taught as stand-alone days. Design and Technology will be taught in three units across a two-year cycle.
In each unit children will have opportunity to evaluate other existing designs before designing their own product. They will then be given opportunity to create a product either from their plan or as a set product decided by the class teacher depending on the skills the unit of work is focusing on developing.
When children are given the opportunity to design their own product this will be done using a standardised design sheet for their current year group to ensure each child is working on the design skills necessary at that level.
At the end of each design and technology sequence, children will evaluate their finished product using a progressive evaluation sheet, carefully designed to reflect the expectations and skills appropriate to their year group. This will ensure that evaluation skills develop progressively as children move through the school, building their ability to reflect on their designs, identify successes and consider areas for improvement.

An effective teaching sequence:

Design and Technology is based around the ‘design-make-evaluate' process and as such each unit of work would follow a similar format.
This is an example of what an effective teaching sequence in Design and Technology may look like:

1. Each Design and Technology unit should start with the posing of a design brief or question. This is then followed by an opportunity for children to research what products have already been made to address this brief/question. Which would involve the children evaluating the existing products.
2. Children are then given opportunity to create a few designs of a product they think could answer the design brief/question.

3. At this point children choose one of their starting designs to focus on and create a detailed design and plan for how they would create their product.
4. The children are taught a new method in regard to construction relevant to their current unit focus. e.g. a new method to join two pieces of wood.
5. Children make the product using the new skills to answer the design brief/question.
6. Finally, children evaluate their product and reflect on how well they feel it has answered the design need. This would include reflecting on how they could improve their product if they were to make it again and thus restarting the design-make-evaluate cycle.

SEND

Sensory, Physical and Medical

In Design and Technology, barriers could include hypo/hypersensitivity to smells, tastes and noises in any project where children are creating a new product. With regards to smells and tastes this is especially relevant to the cooking and nutrition days and may require class teachers to ensure a quieter area removed from the smells is available as well as foods suitable for the children. This is also the case when working with any child that has medical difficulties such as allergies. Children with some physical and/or sensory difficulties may struggle to design using a pencil and paper and therefore may need access to a laptop to design their product digitally. Where necessary children with a physical disability may require the support of a 1:1 Teaching Assistant to ensure they are able to take part in tasks safely. If necessary, tools may need to be altered or bought by the school to ensure the child is able to access all areas of the curriculum effectively such as alternative grips for hammers or drills.

Cognition and Learning

In Design and Technology barriers could include following a sequence of instructions, understanding a new construction technique, as well as factors causing difficulty when completing written work. To support children with Cognition and Learning needs in Design and Technology strategies could include the use of Now and Next boards or task ladders to help sequence instructions. Symbolised work as well as symbolised tools may be necessary to support children accessing the work independently. Dyslexic pupils will have access to word banks when design and evaluating products as well as access to appropriate IT software e.g. Speech-to-text or Clicker. During the “make” section of a Design and Technology unit children with Dyspraxia may require additional support to construct their product. This support may be provided by a peer or an adult working within the room.

Social, Emotional and Mental Health

In Design and Technology barriers could include becoming overwhelmed by a challenging task, emotional challenges when stopping a “make” lesson and concentrating on complex tasks. To support children with Social, Emotional and Mental Health needs in Design and Technology strategies could include tasks differentiated by the class teacher to ensure an adequate level of challenge that will not cause distress to the child. Clear timings will be visible throughout the lesson to help support children’s time management and help support the transition between activities.

Communication and Interaction

In Design and Technology barriers could include working in groups, sharing of tools or understanding the need to design a product for someone else. To support children with Communication and Interaction needs in Design and Technology strategies could include working in groups of familiar peers when turn taking and where possible, taking part in interventions such as Lego Therapy prior to the unit of work to help develop the teamwork skills necessary. A slightly altered design criteria may be necessary for some children to support them in seeing purpose and/or need to work through the unit of work. This may look like a different final product however it has been chosen to ensure the necessary skills have still been learnt and applied.

3. Impact

Assessment

In Design and Technology, we ensure progression through the use of knowledge organisers and skills ladders

In Design and Technology, we assess the children formatively using key knowledge reviews and quizzes as well as observations. Each lesson in a sequence begins with a 'knowledge check-up', which provides opportunity for pupils to recall the key knowledge from the previous lessons in that unit.

In Design and Technology, we assess the children at the end of each unit. Assessment judgements are based on the evidence of knowledge in the child's 'end point'. In Design and Technology an end point would usually be a final product created by the child. Staff will highlight the knowledge each pupil has demonstrated using the knowledge organiser stuck in their book.

Staff will use their assessment judgements to complete an evaluation of the learning in that unit, which is submitted to the subject leader. Where gaps or issues have been identified these will be acted upon through the adaptation of later units either through the adaptation of planning to include any missing skills that could be included in any forthcoming Design and Technology units. Any previous knowledge will be re-covered during further 'knowledge check-up' activities to ensure knowledge is retained by all children.

Monitoring and Evaluation

- Evidence of work can be found in the EYFS floor book, shared subject book (KS1) and Creative Arts book (KS2), which they keep for two years across the key phase. Final products that would not easily be possible to store will be photographed to be stuck in books or filmed in action and a QR code stuck in books accordingly.
- The Design and Technology subject leader will use a combination of evidence from book looks, learning walks, environment checks and end of unit data to monitor the standards in their subject and inform the action plans for curriculum development.
- Subject leaders will use the unit evaluations to inform their action plans/ CPD offer.

What does the impact of Design and Technology look like at Holly Hill?

Based on intent, children can develop an understanding of the design, make, evaluate cycle that informs not only their knowledge of Design and Technology, but the necessary problem-solving skills needed for later life. Through well planned and sequenced Design and Technology projects all children will develop life skills including knowledge of how to use a range of tools that will benefit them throughout their life. Design and Technology will help inform children of healthy life choices through food and nutrition days, encouraging a healthy lifestyle and diet.

By the end of EYFS pupils will be able to...

- Use a range of small tools, including scissors, paintbrushes and cutlery.
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

By the end of KS1 pupils will be able to...

- Design a purposeful, functional and appealing product.
- Create, develop, model and communicate their ideas through a variety of forms both verbally and visually.
- Select the most appropriate tools and materials to achieve a desired outcome.
- Describe and prepare a simple healthy and varied dish independently.
- Build a structure explaining what steps could be taken to make the structure stronger, stiffer or more stable.

By the end of KS2 pupils will be able to...

- Research and develop a design based on design criteria that is aimed at an individual or group that is not themselves.
- Develop, model and communicate their ideas through a variety of forms including annotated sketches, cross-sectional and exploded diagrams.
- Join and finish a range of materials through the use of a wide range of tools and equipment.
- Select a material or component for a given task based on its functional and aesthetic qualities.
- Evaluate their ideas and products against a design criteria.
- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of dishes using a range of techniques.
- Explain the process by which food is produced.

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