

# Christ Church & Holy Trinity School's Design and Technology Curriculum

Every class in Key Stage 1 and 2 complete 2/3 Design and Technology Units

THEMES: **MECHANISMS** **FOOD** **STRUCTURES** **ELECTRICAL** **TEXTILES**

The curriculum is based on the principles: User **Authenticity** **Functionality** **Design Decisions** **Purpose** **Innovation**

Year	<b>AUTUMN TERM</b>	<b>SPRING TERM</b>	<b>SUMMER TERM</b>
Rec	<p><b>ELG: Expressive Art and Design</b></p> <p><b>Creating with Materials</b></p> <p>Development of skills, knowledge and understanding that help reception children make sense of their world as an integral part of the school's work.</p> <p>. This learning forms the foundations for later work in design and technology.</p> <p>These early experiences include: asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control.</p> <p>A range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.</p> <p><b>Theme focus: All About Me. Weather and Festivals</b></p>	<p><b>ELG: Expressive Art and Design</b></p> <p><b>Creating with Materials</b></p> <p>Development of skills, knowledge and understanding that help reception children make sense of their world as an integral part of the school's work.</p> <p>. This learning forms the foundations for later work in design and technology.</p> <p>These early experiences include: asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control.</p> <p>A range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.</p> <p><b>Theme focus: Traditional Tales Tales from Other Cultures</b></p>	<p><b>ELG: Expressive Art and Design</b></p> <p><b>Creating with Materials</b></p> <p>Development of skills, knowledge and understanding that help reception children make sense of their world as an integral part of the school's work.</p> <p>. This learning forms the foundations for later work in design and technology.</p> <p>These early experiences include asking: questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control.</p> <p>A range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.</p> <p><b>Theme focus: People Who Help Us Seaside and Holidays</b></p>

<p><b>Year 1</b></p>	<p style="text-align: center;"><b>MOVING PICTURES</b></p> <p style="text-align: center;"><b>Focus: Mechanics</b></p> <p>In this unit, children develop an understanding of simple mechanisms through designing and making moving pictures. Children develop their understanding of how movement can be created by investigating everyday products and making simple levers and sliders from given examples.</p>	<p style="text-align: center;"><b>EAT MORE FRUIT AND VEGETABLES</b></p> <p style="text-align: center;"><b>Food: Food</b></p> <p>This unit develops children’s understanding of designing and making with food and the importance of healthy eating. They make choices based on the properties of different fruit and vegetables in order to design and make a product for a particular occasion or target group to encourage them to eat more fruit and vegetables. Children investigate and taste different foods and develop vocabulary to describe the appearance, taste, smell and texture. This activity provides opportunities for children to apply hygienic practices and to use basic tools and equipment effectively and safely</p>	<p style="text-align: center;"><b>PLAYGROUNDS (OR HOMES)</b></p> <p style="text-align: center;"><b>Focus: Structures</b></p> <p>In this unit, children explore a range of full-size items of playground equipment and make their own models. This unit gives children opportunities to learn about framework structures and how to make them stable and able to support loads. They investigate materials used for the play equipment, what the different parts of the equipment are, and how they have been assembled. Through a range of focused tasks they develop their use of construction kits, combined with reclaimed materials.</p>
<p><b>Attainment Level 1:</b> Pupils generate ideas and recognise characteristics of familiar products. Their plans show that, with help, they can put their ideas into practice. They use pictures and words to describe what they want to do. They explain what they are making and which tools they are using. They use tools and materials with help, where needed. They talk about their own and other people's work in simple terms and describe how a product works.</p>			
<p><b>Year 2</b></p>	<p style="text-align: center;">Year 1 food unit continued</p> <p>This unit develops children’s understanding of designing and making with food and the importance of healthy eating. They make choices based on the properties of different fruit and vegetables in order to design and make a product for a particular occasion or target group to encourage them to eat more fruit and vegetables.</p> <p>Children investigate and taste different foods and develop vocabulary to describe the appearance, taste, smell and texture. This activity provides opportunities for children to apply hygienic practices and to use basic tools and equipment effectively and safely</p>	<p style="text-align: center;"><b>MOVING VEHICLES</b></p> <p style="text-align: center;"><b>Focus: Mechanisms</b></p> <p>This unit builds on children’s experiences of joining and combining sheet and reclaimed materials and of using moving joints. They learn about wheels and axles and how to use these when making wheeled vehicles for a specific purpose. They are encouraged to develop their design ideas based on investigating vehicles in the world around them. Work in this unit also offers opportunities to</p>	<p style="text-align: center;"><b>JOSEPH’S COAT</b></p> <p style="text-align: center;"><b>Focus: Textiles</b></p> <p>Through this unit children will learn to use a graphics program to design a model of a simple coat linked to the story of Joseph’s coat of many colours. They begin to use simple paper patterns to make a coat and simple joining techniques for fabrics. They learn to communicate their ideas through talking, freehand drawing (and using a graphics program).</p> <p style="text-align: center;"><b>CLASS PARENTS ASSIST WITH THIS PROJECT</b></p>

		use construction kits, and computer generated graphics or text to enhance their finished products, to apply basic measuring skills and to draw on knowledge of forces from science.	
	<p><b>Attainment Level 2:</b> Pupils generate ideas and plan what to do next, based on their experience of working with materials and components. They use models, pictures and words to describe their designs. They select appropriate tools, techniques and materials, explaining their choices. They use tools and assemble, join and combine materials and components in a variety of ways. They recognise what they have done well as their work progresses, and suggest things they could do better in the future.</p>		
Year 3	<p><b>SANDWICH SNACKS</b></p> <p><b>Focus: Food</b></p> <p>In this unit, children learn basic food preparation techniques and ways of combining components to create simple food products for a particular purpose. They develop their designing skills by using their own experiences and evaluating existing products to develop ideas. Through discussion, they develop criteria for their design proposals and suggest ways to proceed. They develop their making skills by learning to combine components according to taste, appearance or texture to create a product that contributes to a healthy diet. Through this activity children develop an awareness of health and safety and learn that the quality of the product depends on how well it is made and presented.</p> <p><b>TRIP: PRET A MANGER</b></p>	<p><b>PICTURE FRAMES</b></p> <p><b>Focus: Structures</b></p> <p>In this unit, children learn about stiffening materials and making stable structures through the context of free-standing photograph frames. The unit uses readily available materials and examples. Children might design a product for their own use or as a gift for a particular user.</p>	<p><b>MOVING MONSTERS</b></p> <p><b>Focus: Mechanisms</b></p> <p>This unit helps to develop children's understanding of control through investigating simple pneumatic systems and designing and making a model of a monster that has moving parts controlled by pneumatics. This could be linked to stories or poems, or another purpose. A good context is toys to amuse children who are ill in bed. The designing and making assignment requires children to develop skills in working as part of a team.</p>
	<p><b>Attainment Level 3:</b> Pupils generate ideas and recognise that their designs have to meet a range of different needs. They make realistic plans for achieving their aims. They clarify ideas when asked and use words, labelled sketches and models to communicate the details of their designs. They think ahead about the order of their work, choosing appropriate tools, equipment, materials, components and techniques. They use tools and equipment with some accuracy to cut and shape materials and to put together components. They identify where evaluation of the design and make process and their products has led to improvements.</p>		

**Year  
4**

## **POP UP BOOKS**

### **Focus: Mechanisms**

This unit develops the popular activity of making greetings cards and the moving picture made in key stage 1. Children research the content of the book and design and make a book that is finished to a high standard, with pages that incorporate moving parts, including linkages and levers. Children gain an understanding of linkage-type mechanisms through investigating a range of products eg books or greetings cards. Through focused practical tasks, children develop further skills and understanding relating to the construction and assembly of a range of simple mechanisms that can be incorporated into a book with moving parts. The children develop their ability to work in groups as they make decisions about the book and share out tasks.

**PAPER ENGINEERING WORKSHOP:  
ROBERT CROWTHER**

## **TORCHES**

### **Focus: Electrical**

This unit enables children to apply knowledge about electric circuits that they acquire in science in a purposeful way by designing and making a simple torch. While all the designing and making skills will be used, there will be a particular emphasis on defining a set of clear specifications for the torch by considering who will use it and the conditions under which it might be used. The children also consider how the torch can be controlled by designing and making their own switch.

## **MONEY CONTAINERS**

### **Focus: Textiles**

In this unit children learn how textiles containers eg purses, wallets and belt bags are designed for different purposes and different users. They design patterns/templates, and join and reinforce fabrics. Children develop their designing skills when evaluating products and use this information to generate their own ideas and identify design criteria. They communicate their early ideas through modelling with paper or inexpensive fabric, and use decorative techniques eg dyeing and embroidery.

This unit is linked with Year4's felt making project

**FELTING WORKSHOP: LARA HALEY**

**Attainment Level 4:** Pupils generate ideas by collecting and using information. They take users' views into account and produce step-by-step plans. They communicate alternative ideas using words, labelled sketches and models, showing that they are aware of constraints. They work with a variety of materials and components with some accuracy, paying attention to quality of finish and to function. They select and work with a range of tools and equipment. They reflect on their designs as they develop, bearing in mind the way the product will be used. They identify what is working well and what could be improved.

**Year  
5**

## **MUSICAL INSTRUMENTS**

### **Focus: Structures**

Children learn about the construction of a range of musical instruments, including those from different times and cultures, and how different sounds can be created and altered to make different notes. They learn to use this knowledge and understanding to design and make a working musical instrument using a combination of materials.

The appearance of the finished product is an additional aspect and the use of techniques to illustrate visual elements could provide a strong link with art. When completed, the instruments could be used by the children eg to perform a musical composition.

**RCM music workshop**

## **BREAD**

### **Focus: Food**

This unit provides an opportunity to develop children's understanding of, and skills in, working with food through a range of activities related to bread products. They gain knowledge and understanding from investigating existing products and exploring the functions and properties of ingredients. They then draw on this knowledge when designing and making their own bread products. They use a range of skills and techniques using basic food tools and equipment and taking account of appropriate safety and hygiene issues.

**Workshop: Bread Ahead**

## **MOVING TOYS**

### **Focus: Mechanisms**

Children learn about controlling movement with a cam mechanism as part of a simple toy. The purpose of the toy is negotiated with the children. They develop their designing skills by using information sources to generate ideas and formulate an understanding of how cam mechanisms can be used to produce movement.

They extend their making skills by developing techniques in cutting, shaping and joining to combine components and by selecting tools and equipment to measure and cut accurately. Through these activities they gain an understanding of the working characteristics of the materials and components and how they can be combined to create more useful properties. They consider both functional and decorative attributes in a finished product.

**Attainment Level 5:** Pupils draw on and use various sources of information. They clarify their ideas through discussion, drawing and modelling. They use their understanding of the characteristics of familiar products when developing and communicating their own ideas. They work from their own detailed plans, modifying them where appropriate. They work with a range of tools, materials, equipment, components and processes with some precision. They check their work as it develops and modify their approach in the light of progress. They test and evaluate their products, showing that they understand the situations in which their designs will have to function and are aware of resources as a constraint. They evaluate their products and their use of information sources.

<b>Year 6</b>	<p style="text-align: center;"><b>FAIRGROUNDS</b></p> <p style="text-align: center;"><b>Focus: Electrical</b></p> <p>This unit enables children to gain understanding of an important mechanism, using belts and pulleys, and to learn more about control using electricity and an electric motor. Children can then be introduced to computer control. The focus of the unit is to design and make a model of a fairground ride but it could be adapted to suit any product in which an electric motor produces rotating movement.</p>	<p style="text-align: center;"><b>SHELTERS</b></p> <p style="text-align: center;"><b>Focus: Structures</b></p> <p>In this unit, children learn about structures. They learn that structures can fail when loaded, and the use of techniques for reinforcing and strengthening structures. They are shown the strength of tubes as a construction material and textiles as a suitable cover for a framework. The main outcome of this unit will be the design and construction of a framework-type shelter for an identified purpose. This can be a model or full-size structure.</p>	<p style="text-align: center;"><b>SLIPPERS</b></p> <p style="text-align: center;"><b>Focus: Textiles</b></p> <p>In this unit, children learn how products eg slippers are designed for different purposes and people. They learn that designers must address a range of needs when designing slippers eg appearance, safety, warmth and size. Children learn about making accurate patterns/templates and detailed working drawings. They develop making and finishing skills to enhance the quality of their slippers. They learn to evaluate their products critically against design criteria and identify what to do to improve them.</p>
<p><b>Attainment Level 6:</b> Pupils draw on and use a range of sources of information, and show that they understand the form and function of familiar products. They make models and drawings to explore and test their design thinking, discussing their ideas with users. They produce plans that outline alternative methods of progressing and develop detailed criteria for their designs and use these to explore design proposals. They work with a range of tools, materials, equipment, components and processes and show that they understand their characteristics. They check their work as it develops and modify their approach in the light of progress. They evaluate how effectively they have used information sources, using the results of their research to inform their judgements when designing and making. They evaluate their products as they are being used, and identify ways of improving them.</p>			

**UNITS WHICH ARE NOT COVERED IN CLASS ARE TAUGHT DURING WHOLE SCHOOL DT WEEKS**

**REGULAR COOKING AND HEALTHY EATING SESSIONS ARE TAUGHT BY SCHOOL COOK- KATIE DANCE**