

St. Leonard's C of E Primary School



Design and Technology

End Points

Early Years

Below are the Early Learning Goals for **Expressive Arts and Design**:

Creating with Materials	Being Imaginative and Expressive
• 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. • Make use of props and materials when role-playing characters in narratives and stories.	• Invent, adapt, and recount narratives and stories with peers and their teacher. • Sing a range of well-known nursery rhymes and songs. • Perform songs, rhymes, and stories with others, and—when appropriate—try to move in time with music

Year 1/2 Cycle A

	End Point
Mechanisms Moving Vehicle	- Generate initial ideas and simple design criteria through talking and using own experiences. - Develop and communicate ideas through drawings and mock-ups. - Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. - Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. - Explore and evaluate a range of products with wheels and axles. - Evaluate their ideas throughout and their products against original criteria. - Explore and use wheels, axles and axle holders. - Distinguish between fixed and freely moving axles. - Know and use technical vocabulary relevant to the project.
Food Fruit Salad	- Design appealing products for a particular user based on a simple design criteria. - Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. - Communicate these ideas through talk and drawings. - Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. - Select from a range of vegetables and fruit to determine the intended user's preferences. - Evaluate ideas and finished products against design criteria, including intended user and purpose. - Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. - Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of 'The Eatwell Plate'. - Know and use technical and sensory vocabulary relevant to the project.
Freestanding Structures Playground Equipment	- Generate ideas based on simple design criteria and their own experiences, explaining what they could make. - Develop, model and communicate their ideas through talking, mock-ups and drawings. - Plan by suggesting what to do next. - Select and use tools, skills and techniques, explaining their choices. - Select new and reclaimed materials and construction kits to build their structures. - Use simple finishing techniques suitable for the structure they are creating. - Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. - Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. - Know how to make freestanding structures stronger, stiffer and more stable. - Know and use technical vocabulary relevant to the project.

Year 1/2 Cycle B

	End Point
Mechanisms Christmas Cards	- Generate ideas based on simple design criteria and their own experiences, explaining what they could make. - Develop, model and communicate their ideas through drawings and mock-ups with card and paper. - Plan by suggesting what to do next. - Select and use tools, explaining their choices, to cut, shape and join paper and card. - Use simple finishing techniques suitable for the product they are creating. - Explore a range of existing books and everyday products that use simple sliders and levers. - Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. - Explore and use sliders and levers. - Understand that different mechanisms produce different types of movement. - Know and use technical vocabulary relevant to the project.
Textiles Hand puppets	- Design a functional and appealing product for a chosen user and purpose based on a simple design criteria. - Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. - Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. - Select from and use textiles according to their characteristics. - Explore and evaluate a range of existing textile products relevant to the project being undertaken. - Evaluate their ideas throughout and their final products against original design criteria. - Understanding how simple 3D textile products are made, using a template to create two identical shapes. - Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch and stapling. - Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. - Know and use technical vocabulary relevant to the project.
Food Healthy Smoothies	- Design appealing products for a particular user based on a simple design criteria. - Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. - Communicate these ideas through talk and drawings. - Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. - Select from a range of vegetables and fruit to determine the intended user's preferences. - Evaluate ideas and finished products against design criteria, including intended user and purpose. - Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. - Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of 'The Eatwell Plate'. - Know and use technical and sensory vocabulary relevant to the project.

Year 3/4 Cycle A

	End Point
Textiles Christmas Stockings	- Generate realistic ideas through discussion and design criteria or an appealing, functional product fit for purpose and specific user/s. - Product annotated sketches, prototypes, final product sketches and pattern pieces. - Plan the main stages of making. - Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. - Select fabrics and fastenings according to their functional characteristics e.g. strength and aesthetic qualities e.g. pattern - Investigate a range of 3D textile products relevant to the project. - Test their product against the original design criteria and with the intended user. - Take into account other's views. - Understand how a key event/individual has influenced the development of the chosen product and /or fabric. - Know how to strengthen, stiffen and reinforce existing fabrics. - Understand how to securely join two pieces of fabric together. - Understand the need for patterns and seam allowances. - Know and use the technical vocabulary relevant to the project.
Food Greek Flatbreads	- Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. - Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. - Plan the main stages of a recipe, listing ingredients, utensils and equipment. - Select and use appropriate utensils and equipment to prepare and combine ingredients. - Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. - Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. - Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. - Know how to use appropriate equipment and utensils to prepare and combine food. - Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. - Know and use relevant technical and sensory vocabulary appropriately.
Electrical Systems Buzzer game	- Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. - Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. - Order the main stages of making. - Select from and use tools and equipment to cut, shape, join and finish with some accuracy. - Select from and use materials and components, including construction materials and electrical components, according to their functional properties and aesthetic qualities. - Investigate and analyse a range of existing battery-powered products. - Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. - Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. - Apply their understanding of computing to program and control their products. - Know and use technical vocabulary relevant to the product.

Year 3/4 Cycle B

	End Point
Mechanical Systems Moving toys	- Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user. - Use annotated sketches and prototypes to develop, model and communicate ideas. - Order the main stages of making. - Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. - Select from and use finishing techniques suitable for the product they are creating. - Investigate and analyse books, videos and products with pneumatic mechanisms. - Evaluate their own products and ideas against criteria and user needs, as they design and make. - Understand and use pneumatic mechanisms. - Know and use technical vocabulary relevant to the project. -
Structures Desk tidies	- Generate realistic ideas and design criteria collaboratively through discussions, focusing on the needs of the user and purpose of the product. - Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. - Order the main stages of making. - Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. - Explain their choice of materials according to functional properties and aesthetic qualities. - Use finishing techniques suitable for the product they are creating. - Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. - Test and evaluate their own products against design criteria and the intended user and purpose. - Develop and use knowledge of how to construct strong, stiff shell structures. - Develop and use knowledge of nets and cubes and cuboids and, where appropriate, more complex 3D shapes. - Know and use technical vocabulary relevant to the project.
Food Healthy pizzas	- Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. - Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. - Plan the main stages of a recipe, listing ingredients, utensils and equipment. - Select and use appropriate utensils and equipment to prepare and combine ingredients. - Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. - Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. - Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. - Know how to use appropriate equipment and utensils to prepare and combine food. - Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. - Know and use relevant technical and sensory vocabulary appropriately.

Year 5/6 Cycle A

	End Point
Food Cuisine from Asia (Spring rolls)	- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. - Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. - Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. - Write a step-by-step recipe, including a list of ingredients, equipment and utensils. - Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. - Make, decorate and present the food product appropriately for the intended user and purpose. - Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. - Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. - Understand how key chefs have influenced eating habits to promote varied and healthy diets. - Know how to use utensils and equipment including heat sources to prepare and cook food. - Understand about seasonality in relation to food products and the source of different food products. - Know and use relevant technical and sensory vocabulary.
Structures Tent frames	- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. - Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. - Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. - Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. - Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. - Use finishing and decorative techniques suitable for the product they are designing and making. - Investigate and evaluate a range of existing frame structures. - Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. - Research key events and individuals relevant to frame structures. - Understand how to strengthen, stiffen and reinforce 3D frameworks. - Know and use technical vocabulary relevant to the project.

Year 5/6 Cycle B

	End Point	
Textiles Pencil Cases	- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. - Develop, model and communicate ideas through talking, drawing, templates, mock-ups, and prototypes and, where appropriate, computer-aided design. - Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. - Produce detailed lists of equipment and fabrics relevant to their tasks. - Formulate step-by-step plans and, if appropriate, allocate tasks within a team. - Select from a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. - Investigate and analyse textile products linked to their final product. - Compare the final product to the original design specification. - Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. - Consider the views of others to improve their work. - A 3-D textiles product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. - Fabrics can be strengthened, stiffened and reinforced where appropriate.	
Food Healthy burgers	- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. - Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. - Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. - Write a step-by-step recipe, including a list of ingredients, equipment and utensils. - Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. - Make, decorate and present the food product appropriately for the intended user and purpose. - Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. - Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. - Understand how key chefs have influenced eating habits to promote varied and healthy diets. - Know how to use utensils and equipment including heat sources to prepare and cook food. - Understand about seasonality in relation to food products and the source of different food products. - Know and use relevant technical and sensory vocabulary.	
Mechanical /Electrical Systems Moving Fairground Ride	Pulleys or Gears criteria: - Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. - Develop a simple design specification to guide their thinking. - Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. - Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. - Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.	More complex switches criteria: - Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of - constraints including time, resources and cost. - Generate and develop innovative ideas and share and clarify these through discussion. - Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. - Formulate a step-by-step plan to guide making, listing tools, equipment, materials and - components.

	- Compare the final product to the original design specification. - Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. - Consider the views of others to improve their work. - Investigate famous manufacturing and engineering companies relevant to the project. - Understand that mechanical and electrical systems have an input, process and an output. - Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. - Know and use technical vocabulary relevant to the project. -	- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. - Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. - Continually evaluate and modify the working features of the product to match the initial design specification. - Test the system to demonstrate its effectiveness for the intended user and purpose. - Investigate famous inventors who developed ground-breaking electrical systems and components. - Understand and use electrical systems in their products. - Apply their understanding of computing to program, monitor and control their products. - Know and use technical vocabulary relevant to the project.
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