Design and Technology Progression of Skills

Expressive Arts and Design – Creating with Materials

EAD ELG linked to D + T

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

In planning and guiding what children learn, practitioners must reflect on the different rates at which children are developing and adjust their practice appropriately.
The three Characteristics of Effective Teaching and Learning are: **playing and exploring** - children investigate and experience things, and 'have a go';
active learning - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements;
creating and thinking critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things.
These are all critical foundation skills for developing children's abilities to work scientifically. The prime areas of learning **(PSE, CL, PD)** underpin and are an integral part of children's learning in all areas.

How is this taught in EYFS?

Continuous Provision

Design and technology is embedded into the indoor and outdoor provision within the EYFS classrooms. Children explore and develop their ideas being encouraged to 'plan, do and review' during construction, big build, obstacle course making and more. Children have access to consistent opportunities to be creative through an indoor expressive arts and design area and outdoor junk modelling. Children are taught to evaluate their work through daily speaking and listening sessions where they are prompted by adults to think about what they could do next time.

Planned Focused Activity - Discrete Learning Experience-

EAD is planned for using the two week planning grid in EYFS. A small group session is taught every two weeks which gives children the opportunity to learn key knowledge and vocabulary which they can then apply in their provision. In Design and Technology many key skills are taught through the junk modelling progression of skills document.

Focus	**Small Steps**	
	FS1	**FS2**
Exploring and developing ideas	Explore different materials freely in order to develop ideas about how to use them and what to make. Develop ideas and then begin to pick materials to use to explorers them.	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture and function, Explore and use a variety of artistic effects to express ideas and feelings.
Junk Modelling	Assemble and design a structure as a collective. Assemble and design a structure of their own. Join materials together using 1 method.	Join materials together using two methods. Build using appropriate methods to join materials. Add detail to designs for a purpose. Improvement and redesign.
Evaluating and developing work	Talk about what I am creating.	Share their creations explaining the processes they have used. Begin to return to projects and build on learning, refining ideas and responding to feedback.
End Points	**I know how to confidently explore different materials beginning to assemble structures and join materials together. I can think of my own ideas and talk about what I am creating using age and stage appropriate language.**	**I know how to use a variety of taught techniques to create and experiment with structure and design. I can select the best method to join materials adding detail where necessary. I am gaining confidence in knowing how to talk to my peers about my projects, adjusting them when I am given feedback.** **ELG 7.1**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	National Curriculum	Pupils should be taught to: ● design purposeful, functional, appealing products for themselves and other users based on design criteria. ● generate, develop, model and communication their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.		Pupils should be taught to: ● 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.			

	Contexts, Uses and Purposes	• Work confidently within a range of contexts, such as imaginary, story based, home or school. • Say what product they are making. • Say whether the product is for themselves or others. • State what the product is for and how it will work.	• Work confidently within a range of contexts, such as gardens, playgrounds, local community, industry and the wider environment. • State the purpose of the design and the intended user. • Say how they will make the product suitable for the intended users. • Use simple design criteria to develop their ideas.	• Work confidently within a range of contexts, such as the home, school and leisure environment. • Develop their own design criteria and use these to inform their ideas. • Describe the purpose of the product. • Explain how particular parts of their design work.	• Work confidently within a range of contexts, such as enterprise, industry and the wider community. • Develop their own design criteria and use these to inform their ideas. • Indicate the design features of their products that will appeal to the intended users. • Gather information about needs and wants of the particular individuals and groups.	• Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider community. • Describe the purpose of their products. • Indicate the design features of their products that will appeal to the intended users. • Carry out research, using surveys and interviews. • Gather information about needs and wants of the particular individuals and groups.	• Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider community. • Carry out research using questionnaires and web-based users. • Indicate the design features of their products that will appeal to the intended users. • Develop a simple design specification to guide their thinking. • Identify the needs, wants, preferences and values of particular individuals and groups.
	Ideas	• Draw on their own experiences to develop ideas. • Develop their ideas through discussion. • Use knowledge of existing products to help come up with ideas.	• Develop their ideas through discussion, drawing and modelling. E.G. Explore materials, make templates and mock ups. • Use knowledge of existing products to help come up with ideas. • Use ICT where appropriate, to develop and communicate ideas.	• Share and clarify ideas through discussion. • Model their ideas using prototypes and pattern pieces. • Generate realistic ideas, focusing on the needs of the user.	• Share and clarify ideas through discussion. • Use annotated sketches, cross-sectional drawings or exploded diagrams to develop and communicate their ideas. • Make design decisions that take account of the availability of resources.	• Share and clarify ideas through discussion. • Model their ideas using prototypes. • Generate realistic ideas, focusing on the needs of the user. • Make design decisions that take account of the availability of resources.	• Share and clarify ideas through discussion. • Use annotated sketches, cross-sectional drawings or exploded diagrams to develop and communicate their ideas. • Use computer-aided design to develop and communicate their ideas. • Make design decisions that take account of the availability of resources.

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make	National Curriculum	Pupils should be taught to: • Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.		Pupils should be taught to: • Select from and use a wider range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). • 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.			

	Planning	• Plan by suggesting what to do next. • Select from a range of tools and equipment. • Select from a range of materials and components.	• Plan by suggesting what to do next. • Select from a range of tools and equipment, explaining their choices. • Select from a range of materials and components according to their characteristics.	• Select tools and equipment suitable for the task. • Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Select materials and components suitable for the task.	• Select tools and equipment suitable for the task. • Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Select materials and components suitable for the task. • Explain their choice of materials and components according to functional properties and aesthetic qualities. • Order the main stages of making.	• Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Select materials and components suitable for the task. • Explain their choice of materials and components according to functional properties and aesthetic qualities. • Produce appropriate lists of tools, equipment and materials they will need.	• Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Select materials and components suitable for the task. • Explain their choice of materials and components according to functional properties and aesthetic qualities. • Produce appropriate lists of tools, equipment and materials they will need. • Formulate step-by-step plans as a guide to making.
	Practical Skills and Techniques	• Follow procedures for safety and hygiene. • Use a range of materials, including construction materials, textiles and food ingredients. • Assemble, join and combine materials. • Use finishing techniques, including those from art and design.	• Follow procedures for safety and hygiene. • Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. • Assemble, join and combine materials and components. • Use finishing techniques, including those from art and design.	• Follow procedures for safety and hygiene. • Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients and mechanical components. • Measure, mark out, cut and shape materials and components. • Assemble, join and combine materials and components with some accuracy. • Apply a range of finishing techniques, including those from art and design, with some accuracy.	• Follow procedures for safety and hygiene. • Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients and electrical components. • Measure, mark out, cut and shape materials and components with some accuracy. • Assemble, join and combine materials and components with some accuracy. • Apply a range of finishing techniques, including those from art and design, with some accuracy.	• Follow procedures for safety and hygiene. • Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients and mechanical components. • Accurately measure, mark out, cut and shape materials and components. • Accurately assemble, join and combine materials and components. • Accurately apply a range of finishing techniques.	• Follow procedures for safety and hygiene. • Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients and electrical components. • Accurately measure, mark out, cut and shape materials and components. • Accurately assemble, join and combine materials and components. • Accurately apply a range of finishing techniques. • Demonstrate resourcefulness when tackling practical problems.

Forest Park Primary School - Progression Maps

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluate	National Curriculum	Pupils should be taught to: ● explore and evaluate a range of existing products. ● evaluate their ideas and products against design criteria.		Pupils should be taught to: ● 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.			
	Own Ideas and Products	● Talk about their design ideas and what they are making. ● Suggest how their products could be improved.	● Talk about their design ideas and what they are making. ● Make simple judgements about their products and ideas against their design criteria. ● Suggest how their products could be improved.	● Identify the strengths and areas for development in their ideas and products. ● Refer to their design criteria as they design and make. ● Use their design criteria to evaluate their completed products.	● Identify the strengths and areas for development in their ideas and products. ● Consider the views of others, including intended users, to improve their work. ● Refer to their design criteria as they design and make. ● Use their design criteria to evaluate their completed products.	● Identify the strengths and areas for development in their ideas and products. ● Consider the views of others, including intended users, to improve their work. ● Evaluate their ideas and products against their original design specification.	● Identify the strengths and areas for development in their ideas and products. ● Consider the views of others, including intended users, to improve their work. ● Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. ● Evaluate their ideas and products against their original design specification.
	Existing Products	● Explore what products are and who or what they are for. ● Explore how products work and how or where they might be used. ● Explore what materials products are made from.	● Explore what products are and who or what they are for. ● Explore how products work and how or where they might be used. ● Explore what materials products are made from. ● Explore what they like and dislike about products.	Pupils to be taught to investigate and analyse: ● How well products have been designed and made. ● Why materials have been chosen. ● What methods of construction have been used? ● How well products work to achieve their purposes. ● How well products meet user needs and wants. ● Whether products can be recycled or reused.	Pupils to be taught to investigate and analyse: ● How well products have been designed and made. ● Why materials have been chosen. ● What methods of construction have been used? ● Developed ground-breaking products. ● How well products work to achieve their purposes. ● How well products meet user needs and wants. ● Who designed and made the products. ● Where and when products were designed and made.	Pupils will be taught to investigate and analyse: ● How well products have been designed and made. ● Why materials have been chosen. ● What methods of construction have been used? ● How well products work to achieve their purposes. ● How well products meet user needs and wants. ● How sustainable the materials in products are.	Pupils will be taught to investigate and analyse: ● How well products work to achieve their purposes. ● How well products meet user needs and wants. ● How much products cost to make. ● How innovative products are. ● What impact products have beyond their intended purpose?
	Key Events/ Individuals				● Find out about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.		

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Forest Park Primary School - Progression Maps

<table>
<tr><td rowspan="5">Technical Knowldge</td><td>National Curriculum</td><td colspan="2">Pupils should be taught to:
● build structures, exploring how they can be made stronger, stiffer and more stable.
● explore and use mechanisms (e.g. levers, sliders, wheels and axles), in their products.</td><td colspan="4">Pupils should be taught to:
● apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
● understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).
● understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors).
● apply their understanding of computing to program, monitor and control their products.</td></tr>
<tr><td rowspan="4">Making Products Work</td><td>Pupils should know:
● about the movement of simple mechanisms such as levers and sliders.
● how freestanding structures can be made stronger, stiffer and more stable.
● the correct technical vocabulary for the projects they are completing.</td><td>Pupils should know:
● about the simple working characteristics of materials and components.
● about the movement of simple mechanisms such as wheels and axles.
● that a 3D textiles product can be assembled from two identical fabric shapes.
● the correct technical vocabulary for the projects they are completing.</td><td colspan="4">Pupils should know:
● how to use learning from science and maths to help design and make products that work.
● that materials have both functional properties and aesthetic qualities.
● that materials can be combined and mixed to create more useful characteristics.
● that mechanical and electrical systems have an input, process and output.
● the correct technical vocabulary for the projects they are undertaking.</td></tr>
<tr><td colspan="2"></td><td>● how mechanical systems such as levers and linkages create movement.
● that a single fabric shape can be used to make a 3D textiles product.
● how to make strong, stiff shell structures.
● that food ingredients can be fresh, pre-cooked and processed.</td><td>● how simple electrical circuits and components can be used to create functional products.
● how to program a computer to control their products.
● that food ingredients can be fresh, pre-cooked and processed.
● that a 3D textiles product can be made from a combination of fabric shapes.</td><td>● how mechanical systems such as pulleys or gears create movement.
● how to reinforce and strengthen a 3D framework.</td><td>● how more complex electrical circuits and components can be used to create functional products.
● how to program a computer to monitor changes in the environment and control their products.
● that a recipe can be adapted by adding or substituting one more ingredients.</td></tr>
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Forest Park Primary School - Progression Maps

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cooking and Nutrition	National Curriculum	Pupils should be taught to: ● use the basic principles of a healthy and varied diet to prepare dishes. ● understand where food comes from.		Pupils should be taught to: ● understand and apply the principles of a healthy and varied diet. ● prepare and cook a variety of predominately-savoury dishes using a range of cooking techniques. ● understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.			
	Where Food Comes From	Pupils should know: ● that all food comes from plants or animals.	Pupils should know: ● that food has to be farmed, grown elsewhere (e.g. home) or caught.	Pupils should know: ● that food is grown (such as tomatoes, wheat and potatoes).	Pupils should know: ● that food is reared (such as pigs and chickens) and caught (such as fish) in the UK, Europe and the wider world.	Pupils should know: ● that food is grown, reared and caught and that seasons may affect the food available.	Pupils should know: ● how food is processed into ingredients that can be eaten or used in cooking.
	Food Preparation, Cooking and Nutrition	Pupils should know: ● how to name and sort foods into the five groups in The Eatwell Plate. ● that everyone should eat at least five portions of fruit and vegetables every day.	Pupils should know: ● how to prepare simple dishes safely and hygienically, without using a heat source.	Pupils should know: ● that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate.	Pupils should know: ● that to be active and healthy, food and drink are needed to provide energy for the body.	Pupils should know: ● how to prepare and cook a variety of dishes safely and hygienically including, where appropriate, the use of a heat source. ● how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	Pupils should know: ● that recipes can be adapted to change the appearance, taste, texture and aroma. ● that different food and drink contain different substances – nutrients, water and fibre that needed for health.

Forest Park Primary School - Progression Maps

	Skills *(Children should be using previously taught skills throughout each year group)*	Pupils should know: ● Use a juicer to extract juice (e.g. orange) ● Peel, with a swivel peeler (with adult support) ● Whisk foods ● Measure using different sized measuring spoons ● Refer to ingredients in simple fractions (e.g half/quarter) ● Cut low resistance foods into equal pieces/slices with a table knife ● Follow a simple recipe, supported by an adult ● Carryout instructions with a little support	Pupils should know: ● Peel, with a swivel peeler (with adult support) ● Mix with increasing thoroughness to combine ingredients ● Measure using different sized measuring spoons (e.g. any liquids) ● Refer to ingredients in simple fractions (e.g half/quarter) ● Grate soft foods e.g. cucumber ● Snip (e.g. spring onion) ● Cut low resistance foods with a table knife in to equal size pieces/slices, e.g. canned pineapple slices, sticks of pepper, mushrooms ● Follow a simple recipe, supported by an adult ● Carryout instructions with a little support	Pupils should know: ● Peel, with a swivel peeler (with supervision) ● Spread ingredients over another food (coating chicken in breadcrumb mixture) ● Shape and mould to create visually appealing products ● Mix any ingredients thoroughly ● Measure using digital scales with support to obtain accuracy ● Grate firmer food e.g. apple, apple ● Snip - with greater dexterity and control, e.g. to shred lettuce or cabbage leaves for salad ● Cut - medium resistance foods with a vegetable knife, e.g. cucumber. ● Cut - medium resistant or partly prepared foods using a bridge hold, e.g. cut half a tomato into a quarter ● Follow a simple recipe, with guidance from an adult ● Carryout instructions independently	Pupils should know: ● Peel, with a swivel peeler (with supervision) ● Shape and mould to create visually pleasing products (e.g. patterns of pastry on top) ● Mix any ingredients thoroughly including kneading ● Use two spoons to transfer ingredients into an alternative container with minimal spillage ● Measure using digital scales with support to obtain accuracy ● Grate firmer food e.g. apple ● Handle and roll shortcrust pastry ● Cut - medium resistant or partly prepared foods using a bridge hold, e.g. cut half an apple into quarters ● Follow a simple recipe, with guidance from an adult ● Carry out instructions independently	Pupils should know: ● Whisk foods using a hand whisk ● Measure using a measuring jug accurately and independently ● Mix any ingredients thoroughly ● Cut - higher resistance food with a vegetable knife, using the claw grip, e.g. celery, carrots ● Use a hob (only with adult supervision) ● Follow a simple recipe independently ● Carryout modifications to recipe	Pupils should know: ● Peel with a swivel peel to create food ribbons to be used in a dish, e.g. courgette/carrot ribbons with supervision ● Fold ingredients together carefully ● Be able to gauge the quantities spooned to ensure an equal amount of ingredient in each container ● using digital and analogue scales accurately and independently ● using the zesting part of a grater, e.g. lemon, orange ● Cut higher resistance food with a vegetable knife, using the claw grip, e.g. celery, carrots ● Cut higher resistant foods from whole using the bridge hold, e.g. halve an apple, raw potato ● Follow a simple recipe independently ● Carryout modifications to recipes