Dartford Primary Academy

Knowledge, Skills and Understanding Progression maps

Design & Technology

EYFS			
	3 & 4-year-olds will be learning to:	**Children in Reception will be learning to:**	**ELG**
Expressive Art and Design	Join different materials and explore different textures. 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. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.	Return to and build on their previous learning, refining ideas and developing their ability to represent them	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
Understanding the World	Explore how things work		
Personal, Social and Emotional	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 Make healthy choices about food, drink, activity and toothbrushing.	Manage their own needs. • Personal hygiene Know and talk about the different factors that support their overall health and wellbeing: • regular physical activity • healthy eating • toothbrushing • sensible amounts of 'screen time' • having a good sleep routine • being a safe pedestrian	Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices
Communication and Language		Learn new vocabulary. Use new vocabulary throughout the day. Use new vocabulary in different contexts.	

		Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.	
Physical	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.	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools - pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.	Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; Use a range of small tools, including scissors, paint brushes and cutlery; Begin to show accuracy and care when drawing.

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KS1

Yr1	Designing		Making		Evaluating	
	Contexts, Users and Purpose	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical skills and techniques**	**Existing Products**	**Own ideas and products**
	-Work confidently within a range of contexts, such as imaginary, story-based, home, school, Gardens, playgrounds, local community, industry and the wider environment -State what products they are designing and making -Say whether their products are for themselves or other users	-Generate ideas by drawing on their own experiences -Use knowledge of existing products to help come up with ideas -Develop and communicate ideas by talking and drawing -Model ideas by exploring materials, components and construction kits	-Select from a range of tools and equipment -Select from a range of materials and components according to their characteristics	-Measure, mark out, cut and shape materials and components -Assemble, join and combine materials and components -Use finishing techniques, including those from art and design	-Say what products are -Say who products are for -Know what products are for	-Talk about their design ideas and what they are making -Make simple judgements about their products and ideas

Yr1	Food	Mechanisms	Structures	Textiles
	-Know that all food comes from plants or animals -Know that a healthy diet comprises food and drinks from the food groups -Know that everyone should eat at least five portions of fruit and vegetables every day -Know how to prepare simple dishes safely and hygienically, without using a heat source e.g. dips, salads, sandwiches and fruit kebabs/salads -Know how to use techniques such as cutting, peeling and grating	-Make a product that moves using levers, sliders or linkages. -Make a product that moves using wheels and axles	-Make a freestanding structure including walls and towers -Know how freestanding structures can be made stronger, stiffer and more stable	-Make a product and join materials together by glueing

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Design & Technology

Yr2	**Designing**		**Making**		**Evaluating**	
	Contexts, Users and Purpose	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical skills and techniques**	**Existing Products**	**Own ideas and products**
	-Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry…. -Describe what their products are for -Say how their products will work -Say how they will make their products suitable for their intended users -Use simple design criteria to help develop their ideas	-Generate ideas by drawing on their own experiences -Use knowledge of existing products to help come up with ideas -Develop and communicate ideas by talking and drawing -Model ideas by exploring materials, components and construction kits and by making templates and mock- ups -Use ICT to develop and communicate their ideas	-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	-Measure, mark out, cut and shape materials and components -Assemble, join and combine materials and components -Use finishing techniques, including those from art and design	-Know how products are used -Know where products might be used -Know what materials products are made from -Say what they like and dislike about products	-Talk about their design ideas and what they are making -Make simple judgements about their products and ideas against design criteria -Suggest how their products could be improved

Yr2	**Food**	**Mechanisms**	**Structures**	**Textiles**
	-Know that food has to be farmed, grown elsewhere (e.g. home) or caught -Know how to name and sort foods into the five groups in The eatwell plate -Know how to prepare simple dishes safely and hygienically, without using a heat source e.g. dips, salads, sandwiches and fruit kebabs/salads -Know how to use techniques such as cutting, peeling and grating	-Make a product that moves using wheels and axles	-Make a freestanding structure that has a framework -Know how freestanding structures can be made stronger, stiffer and more stable	-Make a 3-D textiles product that is assembled from two identical fabric shapes

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Knowledge, Skills and Understanding Progression maps

Design & Technology

KS2

Yr3	Designing		Making		Evaluating	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical Skills and techniques**	**Existing products, key events and individuals**	**Own ideas and products**
	-Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment -Describe the purpose of their products -Develop their own design criteria and use these to inform their ideas	-Share and clarify ideas through discussion -Model their ideas using prototypes and pattern pieces -Use annotated sketches to communicate their ideas -Generate realistic ideas	-Select tools and equipment suitable for the task -Select materials and components suitable for the task -Order the main stages of making	-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	-Know about an inventor, designer, engineer, chef or manufacturer who has developed ground-breaking products -Know who designed and made the products -Know where products were designed and made -Know why materials have been chosen -Know what methods of construction have been used	-Identify the strengths and areas for development in their ideas and products -Refer to their design criteria as they design and make

Yr3	Food	Mechanisms	Structures	Textiles	Electrical Systems
	-Know that food is grown, reared and caught in the UK, Europe and the wider world -Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source -Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading… -Know that a healthy diet is made up from a balance of different food and	-Make a product using mechanical systems such as levers, linkages and pivots, e.g a moving picture	-Make a product that has a strong, stiff, shell structure such as a gift box	-Make a product using a single piece of fabric to make a 3D product such as a bag or pencil case	NA

Knowledge, Skills and Understanding Progression maps

Design & Technology

	drink, as depicted in The eatwell plate				

Yr4	Designing		Making		Evaluating	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical Skills and techniques**	**Existing products, key events and individuals**	**Own ideas and products**
	-Work confidently within a range of contexts, such as the home, school, leisure, industry and outdoors -Describe the purpose of their products -Develop their own design criteria and use these to inform their ideas -Gather information about the needs and wants of particular individuals and groups	-Share and clarify ideas through discussion -Model their ideas using prototypes and pattern pieces -Use annotated sketches to develop and communicate ideas -Generate realistic ideas, focusing on the needs of the user -Make design decisions that take account of the availability of resources	-Select tools and equipment suitable for the task -Select materials and components suitable for the task -Order the main stages of making	-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	-Know about an inventor, designer, engineer, chef or manufacturer who has developed ground-breaking products -Know who designed and made the products -Know where products were designed and made -Know when products were designed and made -Know why materials have been chosen -Know whether products can be recycled or reused	-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

Yr4	Food	Mechanisms	Structures	Textiles	Electrical Systems
	-Know that food is grown, reared and caught in the UK, Europe and the wider world -Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source -Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking -Know that a healthy diet is made up	-Make a product using mechanical systems such as levers, linkages and pivots, e.g a moving picture	-Make a product that has a strong, stiff, shell structure such as packaging	-Make a product using a single piece of fabric to make a 3D product such as a bag or pencil case	-Make a product that contains a simple electrical circuit to create a functional product

	from a balance of different food and drink, as depicted in The eatwell plate				

Yr5	Designing		Making		Evaluating	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical Skills and techniques**	**Existing products, key events and individuals**	**Own ideas and products**
	-Work confidently within a range of contexts, such as the home, school, culture, enterprise, industry and the wider environment -Indicate the design features of their products that will appeal to intended users -Identify the needs, wants, preferences and values of particular individuals and groups	-Share and clarify ideas through discussion -Model their ideas using prototypes and pattern pieces -Use annotated sketches and cross-sectional drawings to communicate their ideas -Generate innovative ideas, drawing on research	-Explain their choice of materials and components according to functional properties and aesthetic qualities -Produce appropriate lists of tools, equipment and materials that they need -Formulate step-by-step plans as a guide to making	-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, including those from art and design	-Know about an inventor, designer, engineer, chef or manufacturer who have developed ground-breaking products -Know what methods of construction have been used -Know how well products work -Know how well products achieve their purposes -Know how well products meet user needs and wants -Know how much products cost to make -Know how innovative products are	-Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make -Consider the views of others, including intended users, to improve their work

Yr5	Food	Mechanisms	Structures	Textiles	Electrical Systems
	-Know that seasons may affect the food available -Know how food is processed into ingredients that can be eaten or used in cooking -Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source -Know how to use a range of techniques -Know that different food and drink	-Make a product that incorporates cams or pulleys or gears	-Make a product that looks at how to strengthen and reinforce a 3D framework such as a bus shelter or playhouse	-Make a 3D product using a combination of fabric shapes such as a shopping bag or hat	-Make a product that incorporates more complex electrical circuits and components to make it functional

	contain different substances – nutrients, water and fibre – that are needed for health				

Yr6	Designing		Making		Evaluating	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical Skills and techniques**	**Existing products, key events and individuals**	**Own ideas and products**
	-Work confidently within a range of contexts -Explain how particular parts of their products work -Carry out research, using surveys, interviews, questionnaires and web-based resources -Develop a simple design specification to guide their thinking	-Model their ideas using prototypes and pattern pieces -Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas -Use computer-aided design to develop and communicate their ideas -Generate innovative ideas, drawing on research -Make design decisions, taking account of constraints such as time, resources and cost	-Explain their choice of materials and components according to functional properties and aesthetic qualities -Produce appropriate lists of tools, equipment and materials that they need -Formulate step-by-step plans as a guide to making	-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, including those from art and design -Use techniques that involve a number of steps -Demonstrate resourcefulness when tackling practical problems	-Know about an inventor, designer, engineer, chef or manufacturer who have developed ground-breaking products -Know what methods of construction have been used -Know how well products work -Know how well products achieve their purposes -Know how well products meet user needs and wants -Know how much products cost to make -Know how innovative products are -Know how sustainable the materials in products are -Know what impact products have beyond their intended purpose	-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 -Consider the views of others, including intended users, to improve their work

	Food	**Mechanisms**	**Structures**	**Textiles**	**Electrical Systems**
	-Know that seasons may affect the food available -Know how food is processed into ingredients that can be eaten or used in cooking -Know how to prepare and cook a variety of predominantly savoury dishes safely	Make a product that incorporates cams or pulleys or gears	Make a product that looks at how to strengthen and reinforce a 3D framework such as a bus shelter or playhouse	-Make a 3D product using a combination of fabric shapes such as a shopping bag or hat	-Make a product that incorporates more complex electrical circuits and components to make it functional

	and hygienically including the use of a heat source -Know how to use a range of techniques -Know that recipes can be adapted to change the appearance, taste, texture and aroma -Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health				