Our Lady of Lourdes Catholic Primary School

DESIGN TECHNOLOGY SKILLS PROGRESSION

Developing, Planning and Communicating Ideas

DESIGN			
EARLY YEARS FOUNDATION STAGE	**KEY STAGE 1 YEAR 1 & YEAR 2**	**LOWER KEY STAGE 2 YEAR 3 & YEAR 4**	**UPPER KEY STAGE 2 YEAR 5 & YEAR 6**
○ Select appropriate resources ○ Use gestures, talking and arrangements of materials and components to show design ○ Use different contexts set by the teacher ○ Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)	○ Have own ideas and plan what to do next ○ Explain what they want to do and describe how they may do it ○ Explain purpose of product, how it will work and how it will be suitable for the user ○ Describe design using pictures, words, models, diagrams, begin to use ICT ○ Design products for themselves and others following design criteria ○ Choose best tools and materials, and explain choices ○ Use knowledge of existing products to produce ideas	○ Use research for design ideas ○ Show how the design meets a range of requirements and is fit for purpose ○ Begin to create own design criteria ○ Have at least one idea about how to create product and suggest improvements for design. ○ Produce a plan and explain it to others ○ Say how realistic plan is. ○ Include an annotated sketch ○ Make and explain design decisions considering availability of resources ○ Explain how product will work ○ Make a prototype ○ Begin to use computers to show design.	○ Draw on market research to inform design ○ Use research of user's individual needs, wants, requirements for design ○ Identify features of design that will appeal to the intended user ○ Create own design criteria and specification ○ Come up with innovative design ideas ○ Follow and refine a logical plan. ○ Use annotated sketches, cross-sectional planning and exploded diagrams ○ Make design decisions, considering, resources and cost ○ Clearly explain how parts of design will work, and how they are fit for purpose ○ Independently model and refine design ideas by making prototypes and using pattern pieces ○ Use computer-aided designs

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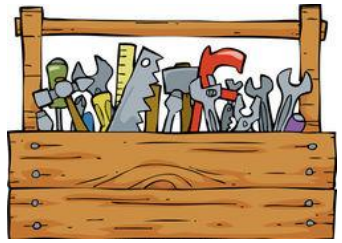

MAKE			
EARLY YEARS FOUNDATION STAGE	**KEY STAGE 1 YEAR 1 & YEAR 2**	**LOWER KEY STAGE 2 YEAR 3 & YEAR 4**	**UPPER KEY STAGE 2 YEAR 5 & YEAR 6**
○ Construct with a purpose, using a variety of resources ○ Use simple tools and techniques ○ Build/construct with a wide range of objects ○ Select tools and techniques to shape, assemble and join ○ Replicate structures with materials/ components ○ Discuss how to make an activity safe and hygienic ○ Record experiences by drawing, writing, voice recording ○ Understand different media can be combined for a purpose	○ Explain what is being made and why it fits the purpose ○ Make suggestions as to what needs to be done next ○ Join materials/components together in different ways ○ Measure, mark out, cut and shape materials and components, with support ○ Describe which tools are being used and why ○ Choose suitable materials and explain choices depending on characteristics ○ Use finishing techniques to make products look good ○ Work safely and hygienically	○ Select suitable tools and equipment, explain choices in relation to required techniques and use accurately ○ Select appropriate materials, fit for purpose; explain choices ○ Work through plan in order. ○ Realise if product is going to be good quality ○ Measure, mark out, cut and shape materials/components with some accuracy ○ Assemble, join and combine materials and components with some accuracy ○ Apply a range of finishing techniques with some accuracy	○ Use selected tools and equipment precisely ○ Produce suitable lists of tools, equipment, materials needed, considering constraints ○ Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics ○ Create, follow, and adapt detailed step-by-step plans ○ Explain how product will appeal to audience; make changes to improve quality ○ Accurately measure, mark out, cut and shape materials/components ○ Accurately assemble, join and combine materials/components ○ Accurately apply a range of finishing techniques ○ Use techniques that involve a number of steps ○ Be resourceful with practical problems

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EVALUATE

EARLY YEARS FOUNDATION STAGE	KEY STAGE 1 YEAR 1 & YEAR 2	LOWER KEY STAGE 2 YEAR 3 & YEAR 4	UPPER KEY STAGE 2 YEAR 5 & YEAR 6
○ Adapt work if necessary ○ Dismantle, examine, talk about existing objects/structures ○ Consider and manage some risks ○ Practise some appropriate safety measures independently ○ Talk about how things work ○ Look at similarities and differences between existing objects / materials / tools ○ Show an interest in technological toys ○ Describe textures	○ Describe what went well, thinking about design criteria ○ Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion ○ Evaluate how good existing products are ○ Talk about what they would do differently if they were to do it again and why	○ Refer to design criteria while designing and making ○ Use criteria to evaluate product ○ Begin to explain how they could improve original design ○ Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose ○ Discuss by whom, when and where products were designed ○ Research whether products can be recycled or reused ○ Know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products	○ Evaluate quality of design while designing and making; Is it fit for purpose? ○ Keep checking design is best it can be. ○ Evaluate ideas and finished product against specification, stating if it's fit for purpose ○ Test and evaluate final product; explain what would improve it and the effect different resources may have had ○ Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose ○ Evaluate how much products cost to make and how innovative they are ○ Research and discuss how sustainable materials are ○ Consider the impact of products beyond their intended purpose ○ Discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products

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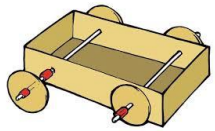
Technical Knowledge

MATERIALS & STRUCTURES

EARLY YEARS FOUNDATION STAGE	KEY STAGE 1 YEAR 1 & YEAR 2	LOWER KEY STAGE 2 YEAR 3 & YEAR 4	UPPER KEY STAGE 2 YEAR 5 & YEAR 6
○ Begin to measure and join materials, with some support ○ Describe differences in materials ○ Suggest ways to make material/product stronger	○ Measure materials ○ Describe some different characteristics of materials ○ Join materials in different ways ○ Use joining, rolling or folding to make it stronger ○ Use own ideas to try to make product stronger	○ Use appropriate materials ○ Work accurately to make cuts and holes ○ Join materials ○ Measure carefully to avoid mistakes ○ Attempt to make product strong ○ Continue working on product even if original didn't work ○ Make a strong, stiff structure	○ Select materials carefully, considering intended use of product and appearance ○ Explain how product meets design criteria ○ Measure accurately enough to ensure precision ○ Ensure product is strong and fit for purpose ○ Reinforce and strengthen a 3D frame



MECHANISMS

EARLY YEARS FOUNDATION STAGE	KEY STAGE 1 YEAR 1 & YEAR 2	LOWER KEY STAGE 2 YEAR 3 & YEAR 4	UPPER KEY STAGE 2 YEAR 5 & YEAR 6
○ Begin to use levers or slides	○ Use levers or slides ○ Begin to understand how to use wheels and axles	○ Select most appropriate tools/techniques ○ Explain alterations to product after checking it ○ Grow in confidence about trying new/different ideas. ○ Use levers and linkages to create movement ○ Use pneumatics to create movement	○ Refine product after testing, considering aesthetics, functionality and purpose ○ Incorporate hydraulics and pneumatics ○ Be confident to try new/different ideas ○ Use cams, pulleys and gears to create movement

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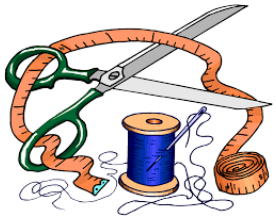

TEXTILES			
EARLY YEARS FOUNDATION STAGE	**KEY STAGE 1 YEAR 1 & YEAR 2**	**LOWER KEY STAGE 2 YEAR 3 & YEAR 4**	**UPPER KEY STAGE 2 YEAR 5 & YEAR 6**
○ Measure, cut and join textiles to make a product, with some support ○ Choose suitable textiles	○ Measure textiles ○ Join textiles together to make a product, and explain how they did it ○ Carefully cut textiles to produce accurate pieces ○ Explain choices of textile ○ Understand that a 3D textile structure can be made from two identical fabric shapes	○ Join different textiles in different ways ○ Choose textiles considering appearance and functionality ○ Think about how to make product strong ○ Begin to devise a template ○ Explain how to join things in a different way ○ Understand that a simple fabric shape can be used to make a 3D textiles project	○ Think about user's wants/needs and aesthetics when choosing textiles ○ Use own template ○ Make a prototype ○ Think about how to make product strong and look better ○ Think of a range of ways to join things ○ Make product attractive and strong ○ Use a range of joining techniques ○ Think about how product might be sold ○ Think carefully about what would improve product ○ Understand that a single 3D textiles project can be made from a combination of fabric shapes

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ELECTRICAL SYSTEMS			
EARLY YEARS FOUNDATION STAGE	**KEY STAGE 1 YEAR 1 & YEAR 2**	**LOWER KEY STAGE 2 YEAR 3 & YEAR 4**	**UPPER KEY STAGE 2 YEAR 5 & YEAR 6**
		○ Use a simple circuit in product ○ Use a number of components in a circuit ○ Learn about how to program a computer to control a product.	○ Incorporate a switch into a product ○ Use different types of circuit in a product ○ Think of ways in which adding a circuit would improve product ○ Confidently use a number of components in a circuit ○ Program a computer to monitor changes in environment and control product

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DESIGN TECHNOLOGY SKILLS PROGRESSION

Technical Knowledge

FOOD & NUTRITION

EARLY YEARS FOUNDATION STAGE	KEY STAGE 1 YEAR 1 & YEAR 2	LOWER KEY STAGE 2 YEAR 3 & YEAR 4	UPPER KEY STAGE 2 YEAR 5 & YEAR 6
○ Begin to understand some food preparation tools, techniques and processes ○ Practise stirring, mixing, pouring, blending ○ Discuss how to make an activity safe and hygienic ○ Discuss use of senses ○ Understand need for variety in food ○ Begin to understand that eating well contributes to good health	○ Explain hygiene and keep a hygienic kitchen ○ Describe properties of ingredients and importance of varied diet ○ Say where food comes from (animal, underground etc.) ○ Describe how food is farmed, home-grown, caught ○ Draw eat well plate; explain there are groups of food ○ Describe "five a day" ○ Cut, peel and grate with increasing confidence	○ Explain how to be safe/hygienic ○ Think about presenting product in interesting/ attractive ways ○ Understand ingredients can be fresh, pre-cooked or processed ○ Begin to understand about food being grown, reared or caught in the UK or wider world ○ Describe eat well plate and how a healthy diet = variety/balance of food and drinks ○ Explain importance of food and drink for active, healthy bodies ○ Prepare and cook some dishes safely and hygienically ○ Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	○ Understand a recipe can be adapted by adding/substituting ingredients ○ Explain seasonality of foods ○ Learn about food processing methods ○ Name some types of food that are grown, reared or caught in the UK or wider world ○ Adapt recipes to change appearance, taste, texture or aroma. ○ Describe some of the different substances in food and drink, and how they can affect health ○ Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. ○ Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.