Burbage CofE Infant and Burbage Junior School DT Progression Ladder

DT

KS1 NC requirements:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, 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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking and Nutrition

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

KS2 NC requirements:

Design

- 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

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- 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

Evaluate

- 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

Technical knowledge

- 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 [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

Cooking & Nutrition

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly 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.

Statement of Intent: For children to be confident in designing products fit for purpose. To use practical skills to enjoy making pieces that they are proud of.

	Design	Make	Evaluate	Technical	Cooking & Food
FS	Generate some original ideas from examples Talk about their ideas Make suggestions for what to do next.	Begin to show fine motor skills to make models Select from a range of materials and components	Talk about things they have made Begin to find ways to improve their creations	Show an interest in toys with buttons and flaps Recognise that a range of technology is used in home and school	Understand that food comes from plants and animals.
1	Use existing knowledge to generate their own original designs. Begin to communicate ideas by drawing.	Select appropriate tools, materials and components	Suggest who their product could be used by and how they could be improved	Select and use technology for a particular purpose. Understand the movements of levers and sliders.	Prepare dishes using simple techniques such as cutting, mixing, grating and stirring.
2	Design purposeful, functional and appealing products generating their own ideas. Explore materials, make templates and mock ups e.g. moving picture / lighthouse	Make and use their own templates. Assemble, join and combine materials. Select from a range of tools and equipment explaining their choices	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria	Know the correct technical vocabulary for the projects they are undertaking. Understand the movements of wheels and axles.	Name and sort foods into the 5 groups of the eatwell plate. Know that we need 5 a day. Use appropriate equipment to weigh and measure ingredients. Prepare simple dishes safely and hygienically, without using a heat sources.

3	Gather information about the needs and wants of particular individuals and groups Develop their own design criteria and use these to inform their ideas Use simple fixing materials e.g. temporary – paper clips tape and permanent – glue, staples	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. Measure, mark out, cut out and shape materials and components. Assemble, join and combine materials and components	Consider the views of others, including intended users, to improve their work. Identify the strengths and weaknesses of their ideas and products	Understand how levers create movement Know how to make strong, stiff shell structures.	Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world
4	Research designs to generate their own design criteria and use these to inform their ideas	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. Measure, mark out, cut and shape materials and components with some accuracy.	Investigate - how well products have been designed, how well products have been made, why materials have been chosen, what methods of construction have been used, how well products work, how well products achieve their purposes and how well products meet user needs and wants.	Understand how to program a computer to control their products. Understand how simple electrical circuits and components can be used to create functional products.	How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.

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5	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Develop design criteria to inform the design of innovative, functional and appealing products.	Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Assemble, join and combine materials and components with accuracy apply a range of finishing techniques, include those from art and design, with some accuracy	Investigate - who designed and made the products, where products were designed and made, when products were designed and made and whether products can be recycled or reused. Identify great designers and their work and use research of designers to influence work Identify great designers and their work and use research of designers to influence work. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make	Understand how cams, pulleys and gears create movement. Understand how to use learning from science and maths to help design and make products that work Know that materials have both functional properties and aesthetic qualities	Know that to be active and healthy, food is needed to provide energy for the body. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
6	Identify the needs, wants, preferences and values of particular individuals and groups. Make design decisions, taking account of constraints such as time, resources and cost. Develop prototypes	Accurately measure to nearest mm, mark out, cut and shape 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, e.g. make refinements	Investigate - how much products cost to make, how innovative products are and how sustainable the materials in products are. Compare their ideas and products to their original design specification.	Understand how to program a computer to monitor changes in the environment / control their products. Know how to reinforce/strengthen a 3D framework. Know that a 3D textiles product can be made from a combination of fabric shapes. Understand how more complex electrical circuits and components can be used to create functional products. .	Understand the need for correct storage. Measure accurately. Work out ratios in recipes Know that different foods contain different substances - nutrients, water and fibre - that are needed for health