Early Years Progression for Design and Technology

The teaching of design and technology skills and knowledge begins in Early Years at Hipsburn Primary School as part of the Expressive Art and Design curriculum. Alongside this progression grid, effective communication and language skills are an essential part of artistic development for our youngest learners.

Preschool 1 (2-3yr olds)	**Preschool 2** (3-4yr olds)	**Reception**
• Notice patterns with strong contrasts and be attracted by patterns resembling the human face. • Start to make marks intentionally. • Explore paint, using fingers and other parts of their bodies as well as brushes and other tools. • Express ideas and feelings through making marks, and sometimes give a meaning to the marks they make. • Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. • Use their imagination as they consider what they can do with different materials. • Make simple models which express their ideas.	• Take part in simple pretend play, using an object to represent something else even though they are not similar. • Begin to develop complex stories using small world equipment like animal sets, dolls and dolls houses, etc. • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, 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. • Join different materials and explore different textures.	• Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively, sharing ideas, resources and skills.

Progression of skills in Design & Technology

Design – Developing A Plan					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Draw on their own experience to help generate ideas • Start to look at given examples to inform their designs • Model their ideas on paper or card	• Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose and target group for what they intend to design and make • Develop their design ideas by looking at given examples • Make simple drawings and label parts	• Generate ideas for an item, considering its purpose and the user/s • Identify a purpose and establish criteria for a successful product, perhaps through discussion • Begin to plan the order of their work before starting • Explore, develop and communicate design proposals by modelling ideas • Develop their design ideas by finding other examples to look at • Make drawings with labels when designing	• Generate ideas by considering the context and purpose, and by researching other examples, to support their design • Develop a clear idea of what has to be done, planning how to use materials and equipment • Make labelled drawings from different views showing specific features	• Begin to draw up a design specification • Plan the design process (i.e. the order and method for their project) • Use results of investigations, information sources, including ICT when developing design ideas • Start to make decisions about which viewpoints to draw from in order to show specific features	• Independently develop a design specification • Plan the order of their work, choosing appropriate materials, tools and techniques • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Independently make decisions about which viewpoints to draw from in order to show specific features

Make/Technical knowledge- Working with equipment and materials					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• With help mark out, measure, cut and shape a range of materials • Use equipment safely e.g. scissors, hole punch, tape, glue	• Mark out, measure, cut and score materials (including fabric) with some accuracy, e.g. to the nearest 10cm • Use tools safely: e.g. needle, hacksaw and vice • Use correct vocabulary to name and describe tools • Use basic sewing techniques • Follow advice to improve the appearance of their product	• Use tools safely: e.g. clamp, sandpaper, hammer, nails, hand drill, saw • Begin to explain why particular tools are used • Choose and use appropriate finishing techniques	• Use tools safely: e.g. clamp, sandpaper, hammer, nails, hand drill, saw • Select specific tools and explain why they are more appropriate • Sew using a range of different stitches/weaves • Use finishing techniques to strengthen their product and improve its appearance, giving reasons for their choices	• Measure, cut, shape and join a range of materials to a high level of precision, e.g. to the nearest mm • Use tools safely: e.g. pliers, cutters	• Measure, cut, shape and join a range of materials to a high level of precision, e.g. to the nearest mm • Use tools safely: e.g. glue gun, pliers, cutters

Progression of Skills in Design Technology

Evaluate- Evaluating products					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Evaluate during and after the making process by making simple comments about strengths and weaknesses	• Evaluate during and after the making process by referring back to their original ideas and purpose • Evaluate after the making process by talking about strengths and weaknesses, likes and dislikes • Record their evaluations using simple drawings	• Evaluate during the making process by referring back to their design criteria, research and prototypes • Ask questions of others, and start to think about altering their approach where appropriate • Offer constructive criticism of their peers' products • Record their evaluations using drawings and text	• Show willingness to alter their approach based on their own and others' evaluations during the making process, perhaps disassembling and starting again • Record their evaluations using a range of equipment and ICT	• Evaluate their products by carrying out appropriate tests	• Evaluate their products by carrying out appropriate tests

Cooking and Nutrition					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Use tools safely • Can explain basic kitchen safety rules (e.g. putting knives down, carrying equipment safely)	• Use tools safely • Following instructions about basic food handling and hygiene, and kitchen safety, e.g. hazards relating to the use of ovens • Follow advice to improve the appearance of their product	• Use tools safely • Explain the reasons for food hygiene procedures • Choose and use appropriate finishing techniques	• Use tools safely • Help to weigh and measure ingredients • Use finishing techniques to improve appearance and taste, giving reasons for their choices	• Use tools safely • Weigh and measure ingredients • Use finishing techniques to improve appearance and taste, giving reasons for their choices	• Use tools safely • Weigh and measure ingredients • Select and use appropriate ingredients for a healthy dish • Use finishing techniques to improve appearance and taste, giving reasons for their choices

Key Stage 1 National Curriculum Expectations:	
Design Pupils should be taught to: • 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** Pupils should be taught to: • 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** Pupils should be taught to: • explore and evaluate a range of existing products; • evaluate their ideas and products against design criteria.	**Technical Knowledge** Pupils should be taught to: • 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** Pupils should be taught to: • use the basic principles of a healthy and varied diet to prepare dishes; • understand where food comes from.

Key Stage 2 National Curriculum Expectations:

Design

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.

Make

Pupils should be taught to:

- 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

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.

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 and Nutrition

Pupils should be taught to:

- 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.

Please note, the National Curriculum for KS2 states that children should 'generate, develop, model and communicate their ideas through computer-aided design'. In most units, there will be lessons where children focus on creating designs for their products: these designs could easily be created using computer-aided design according to the software in school so plans will be adapted as necessary to meet this.