Hampton Infant School & Nursery

# Design and Technology - Progression of Skills

**Purpose of study**

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

**Aims**

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

**EYFS**

- Exploring and using media and materials: Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Being imaginative: Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.

**Key Stage 1**

Pupils should be taught:

- **Design:** Design purposeful, functional, appealing products for themselves and others 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 [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
- **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 [e.g. 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

Hampton Infant School & Nursery

# Design and Technology - Progression of Skills

| EYFS | Characteristics of effective learning | Early Learning Goals |
|---|---|---|
| | Show curiosity about objects, events and people<br>Questions why things happen<br>Engage in open-ended activity<br>Thinking of ideas<br>Find ways to solve problems / find new ways to do things / test their ideas<br>Use senses to explore the world around them<br>Create simple representations of events, people and objects<br>Planning, making decisions about how to approach a task, solve a problem and reach a goal<br>Checking how well their activities are going<br>Changing strategy as needed<br>Reviewing how well the approach worked | Choose the resources they need for their chosen activities<br>Handle equipment and tools effectively<br>Children know the importance for good health of a healthy diet<br>They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.<br>Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.<br>They represent their own ideas, thoughts and feelings through design and technology |

| **SKILLS** | YEAR 1 | YEAR 2 |
|---|---|---|
| Generating ideas - Designing | • Design appealing products for a particular user based on simple design criteria.<br>• Begin to draw on their own experience to help generate ideas.<br>• Begin to understand the development of existing products: What they are for, how they work, materials used.<br>• Start to suggest ideas and explain what they are going to do.<br>• Begin to develop their ideas through talk and drawings. Make templates and mock ups of their ideas in card and paper. | • Start to generate ideas by drawing on their own and other people's experiences.<br>• Identify a purpose for what they intend to design and make.<br>• To further, understand the development of existing products: What they are for, how they work, materials used.<br>• Understand how to identify a target group for what they intend to design and make based on a design criteria.<br>• Develop their ideas through discussions, drawings and labelling parts. Make templates and mock ups of their ideas in card and paper. |

Hampton Infant School & Nursery

# Design and Technology - Progression of Skills

| | | |
|---|---|---|
| Making | • Begin to make their design using appropriate techniques.<br>• Begin to build structures, exploring how they can be made stronger, stiffer and more stable.<br>• Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.<br>• With help measure, mark out, cut and shape a range of materials.<br>• Explore using tools e.g. scissors and a hole punch safely.<br>• Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. stitching, glues, staple, split pins masking tape.<br>• Begin to use simple finishing techniques to improve the appearance of their product. | • Begin to select tools and materials; use correct vocabulary to name and describe them.<br>• Build structures, exploring how they can be made stronger, stiffer and more stable.<br>• With help measure, cut and score with some accuracy.<br>• Learn to use hand tools safely and appropriately.<br>• Start to assemble, join and combine materials in order to make a product.<br>• Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques.<br>• Use advanced joins such as pipe cleaner joins<br>• Start to choose and use appropriate finishing techniques based on own ideas |
| Evaluating | • Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).<br>• When looking at existing products explain what they like and dislike about products and why.<br>• Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make. | • Evaluate their work against their design criteria.<br>• Look at a range of existing products explain what they like and dislike about products and why.<br>• Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.<br>• With confidence talk about their ideas, saying what they like and dislike about them. |

Hampton Infant School & Nursery

# Design and Technology - Progression of Skills

| END OF TOPIC EXPECTATIONS AND GOLDEN WORDS | | |
|---|---|---|
| | 'Golden Words' (taught vocab) in yellow, caught vocab all other words. | 'Golden Words' (taught vocab) in yellow, caught vocab all other words. |
| Golden Words needed across all the topics in both year groups | Planning, investigating, design, make, evaluate, user, purpose, ideas, design criteria, product, function | Planning, investigating, design, make, evaluate, user, purpose, ideas, design criteria, product, function |
| **KNOWLEDGE** | YEAR 1 | YEAR 2 |
| Food | • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.<br>• Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.<br>• Know and use technical and sensory vocabulary relevant to the project. | • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.<br>• Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.<br>• Know and use technical and sensory vocabulary relevant to the project. |
| Vocabulary | • Fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, recipe, portion | • Fruit and vegetable names, names of equipment and utensils, eatwell plate, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, chopping, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, preference |
| Structures | • Know how to make freestanding structures stronger, stiffer and more stable. | • Know and use technical vocabulary relevant to the project. |
| Vocabulary | cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder, sail . | cut, fold, join, fix structure, wall, tower, freestanding structure, frame structure, stability framework, stable, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder, mock up |
| Textiles | • Understand how simple 3-D textile products are made, using a template to create two identical shapes. | • Explore different finishing techniques<br>• Know and use technical vocabulary relevant to the project. |

Hampton Infant School & Nursery

# Design and Technology - Progression of Skills

| | | |
|---|---|---|
| | • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. | |
| Vocabulary | joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish | joining and finishing techniques, sew, seam, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish |
| Mechanisms | • Explore and use sliders and levers.<br>• Understand that different mechanisms produce different types of movement.<br>• Know and use technical vocabulary relevant to the project. | • Explore and use wheels, axles and axle holders.<br>• Distinguish between fixed and freely moving axles.<br>• Know and use technical vocabulary relevant to the project. |
| Vocabulary | slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards | vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used |