**Design and Technology Curriculum Learning Sequence and Intent**

**Let Your Light Shine as a Designer**

|  |  |
| --- | --- |
| **Intent** | We want to ensure that D&T makes a high quality contribution to our broad and balanced primary curriculum. We want Design and Technology to be an inspiring, rigorous and practical subject which encourages all our children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. We want children to use their creativity and imagination, to design and make functional products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. We want our Design and Technology curriculum to allow all children to become discriminating and informed consumers and potential innovators, designers and engineers for the future. |
| **What does enrichment look like in this subject?** | Enrichment goes beyond curriculum requirements for the teaching of design and technology. We want to have an impact on a pupil’s learning by creating memorable experiences both in the classroom and beyond. This is achieved through cross curricula approaches, visits, clubs, speakers, projects and learning with others and are used to develop not only their design and technology understanding, but also enhance their design and technology capital and support the acquisition of SMSC values. |
| **Curriculum design/**  **implementation** | 1. **Cycle of learning –** This cycle of intent is based on a 3 year programme with one unit being taught each term This is to take account of the way our year groups are organised into classes. 2. **Food and nutrition** - We feel that the teaching of Food and nutrition is a great importance and holds great relevance in current times. For this reason, children will study a Food and Nutrition unit every year. 3. **Every DMA must include opportunities for children to:** Investigate existing products. Engage in focused tasks which are largely practical in nature, set design criteria, design, make products using an iterative process and evaluate their products. 4. **Learning, working and talking like a designer-** The promotion of a language rich D&T curriculum is essential to the successful acquisition of knowledge and understanding. That means being introduced to the key vocabulary that a designer and engineer would use; defining the key vocabulary that a designer and engineer would use and having high expectations of pupils ‘talking’ like a designer. A progression of vocabulary acquisition is included with this document. 5. **Published support –** Teachers use a range of support materials to help deliver an exciting curriculum**.** Medium Term planning –teachers should use the medium-term plans from The Design and Technology Association’s Projects on a Page and supplemented by Twinkl and PlanBee. \*\* denotes teaching aids and class packs available from Ivydale Technology Shop 6. **Planning learning outcomes –** Teachers decide what learning outcomes their classes produce based on their interests, current world events and strong meaningful links to other curriculum areas. 7. **Progression of skills and knowledge –** Alongside this intent document, runs a progression document that details the skills and knowledge pupils will experience. 8. **Contexts –** work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. 9. **Cumulative curriculum –** Knowledge builds on knowledge. The more you know, the easier it is to acquire more knowledge. Therefore, our curriculum is sequenced cumulatively, always building upon prior knowledge. The curriculum is a spiral in which the paths of knowledge and understanding are deepened over time in increasingly complex ways. This spaced repetition over time with constant retrieval is what we use to make learning stick. 10. **Incidental work –** Knowledge and understanding are woven into pupils’ everyday learning through early morning work, ‘What’s in the news’ discussions, assemblies, and cultural experience days. |
| **Impact** | Our design and technology curriculum is high quality, well thought out and is planned to demonstrate progression. If pupils are keeping up with the curriculum, they are to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:  A reflection by teachers and pupils on standards achieved against the planned outcomes; Tracking of knowledge through marking and observations; Pupil discussions about their learning with their books planned learning outcome. We look for pupils being happy learners within design and technology who have experience of a wide range of learning challenges within the subject and know appropriate responses to them. Pupils talk enthusiastically about their learning in design & technology and are eager to further their learning in the next stages of their education. They understand what design and technology is and how design and innovation help shape our lives today. |
| **Additional information**  **Six Essentials of Good Practice** | **Our planning is based on the six essentials of good practice in D&T. These need to be in place in teachers' planning to ensure children’s learning is genuinely design** **and technological in nature**.  **User –** children should have a clear idea of who they are designing and making products for, considering their needs, wants, interests or preferences. The user could be themselves, an imaginary character, another person, client, consumer or a specific target audience. **Purpose –** children should know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use. **Functionality –** children should design and make products that function in some way to be successful. **Design Decisions –** when designing and making, children need opportunities to make informed decisions such as selecting materials, components and techniques and deciding what form the products will take, how they will work, what task they will perform and who they are for. **Innovation –** when designing and making, children need some scope to be original with their thinking. **Authenticity –** children should design and make products that are believable, real and meaningful to themselves i.e. not replicas or reproductions or models which do not provide opportunities for children to make design decisions with clear users and purposes in mind.  ::dt-essentials.jpg |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **EYFS** | **1** | | **2** | | **3** | **4** | **5** | | **6** |
| Context for learning- Expressive Arts and Design | Sculpture and 3D-Creation Station | | Craft and Design | | Cooking and Nutrition | Textiles: Bookmarks | Structures: Boats | | Structures: Junk Modelling |
| Learning Intent | Exploring the sculptural qualities of malleable materials and natural objects; developing the use of tools and joining techniques; designing and making clay animal sculptures. | | Developing cutting, threading, joining and folding skills through fun, creative craft projects. | | n this unit, children explore the differences between fruits and vegetables using their senses (taste, texture, smell etc.). They listen to the story ‘The best pumpkin soup’ and discuss the key ingredients the characters used before developing a class-based vegetable soup recipe. | Pupils develop and practise threading and weaving techniques using various materials and objects. They look at the history of the bookmark from Victorian times versus modern-day styles. The pupils apply their knowledge and skills to design and sew their own bookmarks. | In this unit, children explore what is meant by ‘waterproof’, ‘floating’ and ‘sinking’, then experiment and make predictions with various materials to carry out a series of tests. They learn about the different features of boats and ships before investigating their shape and structures to build their own. | | In this unit, pupils explore and learn about various types of permanent and temporary join. They are encouraged to tinker using a combination of materials and joining techniques in the junk modelling area. |
| **Learning Sequence**  **ELGs** | 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. | | . 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. | | Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. • Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. | 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.  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, paintbrushes and cutlery. • Begin to show accuracy and care when drawing | 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. | | 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. |
| **Future learning** | On the theme of the natural world, children will make sculptures, collages, 3D models of creatures and a class spider sculpture, inspired by Louise Bourgeois. | | Exploring the formal elements of art: pattern, texture and tone;  children create printed patterns using everyday objects; take  rubbings using different media and learn how to make their  drawings three dimensional. | | Replicating the recognisable crockery of Clarice Cliff, exploring  tone through shading, developing weaving skills, manipulating clay  and experimenting with brush strokes. | Exploring how bodies and faces are portrayed in art: looking at the  work of artists, using their bodies to form shapes, creating  collages, drawing portraits and creating a peg figure. | Creating sculpture and pop art and learning how to draw facial  features to portray different emotions, all through the topic of  comic superheroes inspired by the works of Roy Lichtenstein. | | Children learn about composition and work with different art materials to create texture for a project they develop over the five lessons. Based on the theme of 'The seaside' with support for adapting to the alternative theme of 'Castles'. The unit can also be easily adapted to other topics.. |
| Drawing | Reception- Lesson 1: Mark making with wax crayons. Mark making with wax crayons, exploring textures in the classroom environment by taking wax rubbings and collecting patterns. Lesson 2: Mark making with felt tips. Investigating felt tips as a tool for mark making and developing fine motor skills as they create patterns. Lesson 3: Mark making with chalk. Mark making outdoors with chalk, practising creating patterns in a new medium and identifying similarities and differences between the drawing tools used. Lesson 4: Observational pencil drawings. Developing skills in observation, using pencils to draw and reflecting on whether their drawings show what they can see. Lesson 5: Drawing faces. Creating self-portraits by applying their observational skills, using mirrors to draw their faces carefully. Lesson 6: Drawing faces in colour. Comparing how colour is used by artists, applying what they have practised when drawing from observation and creating a colourful self-portrait. | | | | | | | | |
| Painting | Reception: Lesson 1: Finger painting. Exploring paint through finger painting, children describe colours and textures and discuss their creations. **Lesson 2: Outdoor painting.** Collecting materials and objects from nature to make painting tools; children use these to create abstract and figurative art. Lesson 3: Painting to music. Using paint to record emotional responses to different pieces of music, creating exciting and expressive paintings. Lesson 4: Collage and transient art. Creating unique collages and transient art through independent exploration of mixed media resources. Lesson 5: Landscape collage  Developing an understanding of collage, children create landscape collages inspired by the work of Megan Coyle. Lesson 6: Group art. Working collaboratively, children create a large group painting inspired by the colours and patterns of fireworks. | | | | | | | | |
| Structures: Junk Modelling | Reception: Lesson 1: Exploring junk modelling. Children learn about the names and use of various craft tools and materials for junk modelling and explore ways to manipulate materials to create different effects. Lesson 2: Cutting and scissor skills. Pupils practise and develop their scissor (and fine motor) skills by investigating how easy or difficult it is to cut and shape different materials using a variety of scissor types (right, left-handed, squeeze and craft zigzag and scalloped). Lesson 3: Choosing resources. After exploring and practising with various materials and tools in the junk modelling area, pupils decide and discuss which resources they would like to use and generate ideas to develop a class-based junk model. Lesson 4: Making models. Pupils put all of the skills and decisions into practice by developing their own unique junk model plan, which includes which tools, materials and components they will need to make it possible (e.g. a cone shape for a rocket top). They begin to build their junk model. Lesson 5: Evaluation and presentation. Following their plan, pupils continue to build their junk models, sticking as closely to their decisions as possible. When complete, pupils discuss and evaluate their finished model and present it to the rest of the class. Lesson 6: Temporary joins. Building on their knowledge of joins such as glue, paper clips and sticky tape, pupils explore and tinker with a range of temporary joining methods and their use (e.g. hook and loop shoes). | | | | | | | | |
| Sculpture and 3D | Reception: Lesson 1: Clay. Exploring and understanding clay through manipulation and experimentation; developing small motor skills. Lesson 2: Playdough. Exploring the properties of playdough using hands and tools to manipulate it in different ways. Lesson 3: 3D landscape art. Creating 3D landscape pictures using natural found objects; using their imagination to choose and arrange objects. Lesson 4: Designing animal sculptures. Looking at the shapes and patterns in clay animal sculptures; designing their own animal sculpture, considering how they will create it in clay. Lesson 5: Creating animal sculptures. Shaping clay into animal sculptures; refining their ideas as they follow their designs and problem solving as they work. Lesson 6: Painting animal sculptures. Developing their clay animals; choosing colours to decorate them and talking about the processes used to make their sculptures. | | | | | | | | |
| Craft and design | Reception: Lesson 1: Cutting skills. Developing confidence with scissor skills; exploring the differences when cutting a range of materials. Lesson 2: Threading skills. Building small motor skills when threading a range of materials in different ways. Lesson 3: Joining materials  Exploring techniques for joining paper and card; using a range of tools and equipment; making choices about which technique to use. Lesson 4: Paper snakes. Learning to fold, cut and curl paper to make colourful paper snakes. Lesson 5: Flower designs. Refining drawing and colouring skills to create a design for a tissue paper flower. Lesson 6: Tissue paper flowers. Using flower designs from the previous lesson to create colourful tissue paper flowers. | | | | | | | | |
| Cooking and Nutrition | Reception: Lesson 1: Fantastic fruits and vegetables. Children explore and become familiar with different types of fruits and vegetables and their differences in texture, taste and appearance. Lesson 2: Pumpkin soup. After listening to ‘The best pumpkin soup’ story, pupils re-enact each part of the story using props. They explore the interior and exterior of a pumpkin. Using their senses, they describe the pumpkin’s appearance and texture. Lesson 3: Designing soup. Using what they have learnt from lessons one and two, children develop a vegetable soup recipe of their own. When finished, the children share their ideas with their peers to create a class soup recipe. Lesson 4: Fine motor skills. The children work in groups to practise their fine motor skills to slice and chop play dough, ready to help prepare their vegetables next lesson. Lesson 5: Making soup. After developing a class soup recipe in lesson three and practising their fine motor skills in lesson four, pupils prepare different fruits and vegetables in groups ready to make, taste and evaluate the soup. Lesson 6: Designing soup packaging. The children become packaging designers in this lesson and look at existing soup packaging before generating their own ideas and designs for the class soup. | | | | | | | | |
| Textiles: bookmarks | Reception: Lesson 1: Exploring threading and weaving. Children develop their threading and weaving skills by exploring different materials and objects, such as ribbons through wire racks or wool through ten-frames. Lesson 2: Paper weaving. Building on lesson one, the children continue to explore weaving techniques, using a weaving base and paper strips. Lesson 3: Sewing with hessian. The children apply what they learnt in lesson one to develop their threading skills using wool through hessian fabric, and then with a sewing needle and thread. Lesson 4: Designing bookmarks. Children learn about the history of the bookmark back in Victorian times and compare them to modern-day styles before developing design ideas for their own. Lesson 5: Creating bookmarks. After developing their own design in lesson four, children begin to plan and sew their bookmark design using hessian fabric and thread. Lesson 6: Evaluating bookmarks. Continuing from lesson five, children complete their bookmarks and then in pairs, reflect and evaluate each other’s bookmarks - paper versus fabric designs. | | | | | | | | |
| Structures: Boats | Reception: Lesson 1: Waterproof materials. Pupils investigate and learn about waterproof materials. They conduct a test in groups and observe what happens when they pour water through various samples before reporting back to the class what they discovered. Lesson 2: Floating and sinking. Pupils investigate and learn about what floating and sinking means. They make predictions about whether an object will float or sink before they test their ideas as part of an experiment to see what will happen. Lesson 3: Boats. After looking at waterproof materials and what floating and sinking mean, the children learn about the different features and structures of boats and ships. Lesson 4: Investigating boats.The children continue to look at boats and ships, but with a particular focus on their shape and how they move through the water. They explore and play with various boats and containers to determine which shapes work best. Lesson 5: Designing boats. Applying what they have learnt through lessons one to four, the children discuss what would make a successful boat. They sketch, and discuss with their peers, their design ideas for their own boats. Lesson 6: Creating and testing boats. Pupils build the boat models they designed in lesson five. They test and evaluate their boats on the water, with increasing cargo and reflect on what could have been improved about the design. | | | | | | | | |
| ***Year 1 and 2*** | **1** | **2** | | **3** | | **4** | **5** | **6** | |
| ***Aspect*** | **Textiles** | **Mechamisms** | | **Cooking and Nutrition** | | **Textiles** | **Structures** | **Cooking and Nutrition** | |
| ***Focus/Project Title*** | **Puppets** | **Wheels and axles** | | **Fruit and Vegetables** | | **Pouches** | **Baby bears Chair** | **A Balanced Diet** | |
| ***Vocabulary*** | names of existing products, joining and finishing techniques, tools, fabrics and components  template, pattern pieces, mark out, join, decorate, finish    features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function | vehicle, wheel, axle, axle holder, chassis, body, cab  assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism  names of tools, equipment and materials used  design, make, evaluate, purpose, user, criteria, functional | | 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, planning, investigating tasting, arranging, popular, design, evaluate, criteria | | names of existing products, joining and finishing techniques, tools, fabrics and components  template, pattern pieces, mark out, join, decorate, finish    features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function | 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  design, make, evaluate, user, purpose, ideas, design criteria, product, function | 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, planning, investigating tasting, arranging, popular, design, evaluate, criteria | |
| ***Learning Sequence***  ***Prior Learning*** | Explored and used different fabrics.  Cut and joined fabrics with simple techniques.  Thought about the user and purpose of products | Assembled vehicles with moving wheels using construction kits.  Explore moving vehicles through play.  Gained some experience of designing, making and evaluating products for a specified user and purpose.  Developed some cutting, joining and finishing skills with card. | | Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.  Experience of cutting soft fruit and vegetables using appropriate utensils. | | Explored and used different fabrics.  Cut and joined fabrics with simple techniques.  Thought about the user and purpose of products | Experience of using construction kits to build walls, towers, and frameworks.  Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card.  Experience of different methods of joining card and paper. | Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell.  Experience of cutting soft fruit and vegetables using appropriate utensils. | |
| ***Future learning and knowledge*** |  |  | |  | |  |  |  | |

|  |  |
| --- | --- |
| Cooking and Nutrition: | Year 1-  Year 2- |
| Mechanisms: | Year 1-  Year 2 - |
| Structures: | Year 1-  Year 2 - |
| Textiles: | Year 1-  Year 2 - |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year 3 and 4** | **1** | **2** | **3** | **4** | **5** | **6** |
| **Aspect** | **Textiles** | **Mechanical systems** | **Cooking and Nutrition** | **Textiles** | **Structures** | **Cooking and Nutrition** |
| **Focus/Project Title** | **Cushions** | **Making a Slingshot Car** | **Adapting a Recipe** | **Fastenings** | **Pavillions** |  |
| **Vocabulary** | fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance  user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces | slider, lever, pivot, slot, bridge/guide    card, masking tape, paper fastener, join    pull, push, up, down, straight, curve, forwards, backwards  design, make, evaluate, user, purpose, ideas, design criteria, product, function  brief, research, evaluate, ideas, constraints, investigate | name of products, names of equipment, utensils, techniques and ingredients  texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury  hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet  planning, design criteria, purpose, user, annotated sketch, sensory evaluations | fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance  user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces | shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity  marking out, scoring, shaping, tabs, adhesives,  joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating  font, lettering, text, graphics, decision,  evaluating, design brief design criteria, innovative, prototype | name of products, names of equipment, utensils, techniques and ingredients  texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury  hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet  planning, design criteria, purpose, user, annotated sketch, sensory evaluations |
| **Learning Sequence**  **Prior Learning** | Have joined fabric in simple ways by gluing and stitching.  Have used simple patterns and templates for marking out.  Have evaluated a range of textile products. | Explored simple mechanisms, such as sliders and levers, and simple structures.  Learnt how materials can be joined to allow movement.  Joined and combined materials using simple tools and techniques. | Know some ways to prepare ingredients safely and hygienically.  Have some basic knowledge and understanding about healthy eating and *The Eatwell*  *plate.*  Have used some equipment and utensils and prepared and combined ingredients to make a product. | Have joined fabric in simple ways by gluing and stitching.  Have used simple patterns and templates for marking out.  Have evaluated a range of textile products. | Experience of using different joining, cutting and finishing techniques with paper and card.  A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science. | Know some ways to prepare ingredients safely and hygienically.  Have some basic knowledge and understanding about healthy eating and *The eatwell plate.*  Have used some equipment and utensils and prepared and combined ingredients to make a product. |
| **Future learning and knowledge** | Combining different fabric shapes | Using cams to change rotary movement into linear/reciprocating movement | Combining a range of fresh, precooked and processed foods to cook and bake foods according to their sensory characteristics | Consider a range of factors in their design criteria and use this to create a waistcoat design.  Use a template to mark and cut out a design.  Use a running stitch to join fabric to make a functional waistcoat.  Attach a secure fastening, as well as decorative objects.  Evaluate their final product. | Investigating frame structures and reinforcing and strengthening £D frameworks | Adapting a recipe by adding or substituting an ingredient |
| Cooking and Nutrition | Year 3-  Year 4- | | | | | |
| Mechaqnisms | Year 3-  Year 4- | | | | | |
| Structures | Year 3-  Year 4- | | | | | |
| Textiles | Year 3-  Year 4- | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year 5 and 6** | **1** | **2** | **3** | **4** | **5** | **6** |
| **Aspect** | **Structures** | **Mechanical systems** | **Cooking and Nutrition** | **Textiles** | **Electrical systems** | **Cooking and Nutrition** |
| **Focus/Project Title** | **Bridges** | **Automata Toys** | **Come Dine with Me** | **Stuffed Toys** | **Steady Hand Game** |  |
| **Vocabulary** | frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent  design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional | cam, snail cam, off-centre cam, peg cam, pear shaped cam  follower, axle, shaft, crank, handle, housing, framework  rotation, rotary motion, oscillating motion, reciprocating motion  annotated sketches, exploded diagrams  mechanical system, input movement, process, output movement  design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief | name of products, names of equipment, utensils, techniques and ingredients  texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury  hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet  planning, design criteria, purpose, user, annotated sketch, evaluations | computer aided design (CAD), computer aided manufacture (CAM)  font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip  design brief, design criteria, design decisions, innovative, prototype  seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces  names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper  annotate, functionality, innovation, authentic, user, purpose, evaluate, | pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor  circuit, switch, circuit diagram  annotated drawings, exploded diagrams  mechanical system, electrical system, input, process, output  design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief | name of products, names of equipment, utensils, techniques and ingredients  texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury  hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet  planning, design criteria, purpose, user, annotated sketch, sensory evaluations |
| **Learning Sequence**  **Prior Learning** | Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials.  Basic understanding of what structures are and how they can be made stronger, stiffer and more stable. | Experience of axles, axle holders and wheels that are fixed or free moving.  Basic understanding of different types of movement.  Experience of cutting and joining techniques with a range of materials.  An understanding of how to strengthen and stiffen structures | Know some ways to prepare ingredients safely and hygienically.  Have some basic knowledge and understanding about healthy eating and *The eatwell plate.*  Have used some equipment and utensils and prepared and combined ingredients to make a product | Experience of stitching, joining and finishing techniques in textiles.  Experience of making and using textiles pattern pieces.  Experience of simple computer-aided design applications. | Experience of axles, axle holders and wheels that are fixed or free moving.  Basic understanding of electrical circuits, simple switches and components.  Experience of cutting and joining techniques with a range of materials including card, plastic and wood.  An understanding of how to strengthen and stiffen structures. | Know some ways to prepare ingredients safely and hygienically.  Have some basic knowledge and understanding about healthy eating and *The eatwell plate.*  Have used some equipment and utensils and prepared and combined ingredients to make a product. |
| **Future learning and knowledge** | KS3 there are various types of structures, including frame structures, shell structures, combination of frame and shell structures, | Experience of gears and pulleys to create movement  use of programming to control movement | Adapt a recipe by adding or substituting ingredients | Use computers for additional applications within Design and Technology to control mechanisms | Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers. | Adapt a recipe by adding or substituting ingredients |
| Cooking and Nutrition: | Year 5-  Year 6- | | | | | |
| Mechanisms: | Year 5-  Year 6- | | | | | |
| Structures: | Year 5-  Year 6- | | | | | |
| Textiles: | Year 5-  Year 6- - | | | | | |

**Cooking and Nutrition in D&T**

**Year by year progressive knowledge-based planning.**

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

**Key stage 1**

**• use the basic principles of a healthy and varied diet to prepare dishes**

**• understand where food comes from.**

**Key stage 2**

**• 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.**

*A selection of balanced diet/ healthy eating recipe suggestions is included here. Adapt them as necessary or seek alternatives but please note emphasis should be on safely preparing and cooking mostly savoury food.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Year 1**  Equipment needed for skill development | **Cutting and knife skills** | **Mixing and Moulding** | **Heating and Cooling** |
| Mixing spoons • Table knives • Forks • Mixing bowls • Serrated vegetable knives • Mashers • Peelers • Melon ballers • Graters • Sieves • Colanders • Lemon squeezer | **With close supervision:**  • Use the bridge hold to cut harder foods using a serrated vegetable knife (eg apple)  • Use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato)  • Mash cooked food (eg potatoes with a masher)  • Peel soft vegetables using a peeler (eg cucumber)  • Using physical guidance if necessary, peel harder food (eg apple, potato)  • Cut food into evenly sized largish pieces (eg potatoes) • Use a melon baller to core an apple  • Grate soft food, using a grater (eg cheese)  **Independently:**  • Drain away liquids from packaged food using a sieve or colander (eg tuna or sweet corn)  • Use a lemon squeezer | **With close supervision:**  • Sift flour into bowl  • Mix, stir and combine liquid and dry ingredients (eg muffins)  • With help, use hands to rub fat into flour (eg rock buns)  • With help crack an egg and beat together using a fork • With physical guidance, use a small table knife for spreading soft spreads on to bread  • Use hands to shape dough into small balls or shapes  • With help assemble and arrange cold ingredients (eg sandwich, fruit kebabs, bruschetta) | Note: Although children will not be cooking hot food, children should understand how hot food is cooked safely by:  • observing adults using the hob, oven, toaster and/or microwave  **With close supervision:**  • Be able to prepare food for baking and frying such as greasing baking tins and adding oil to frying pans / Saucepans |
| **Recipes – taken mainly from** [Recipes - Food A Fact Of Life](https://www.foodafactoflife.org.uk/recipes/) 5-7  Bruschetta  Potato and Beetroot Salad  Seasonal Fruit Salad  Smoothie  Breadsticks  Milk Rolls |
| **Year 2**  Equipment needed for skill development | **Cutting and knife skills** | **Mixing and Moulding** | **Heating and Cooling** |
| Mixing spoons • Table knives • Forks • Mixing bowls • Serrated vegetable knives • Mashers • Peelers • Melon ballers • Graters • Sieves • Colanders • Lemon squeezer | **With close supervision:**  • Use the bridge hold to cut harder foods using a serrated vegetable knife (eg apple)  • Use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato)  • Cut food into evenly sized largish pieces (eg potatoes)  **With moderate supervision:**  • Peel soft vegetables using a peeler (eg cucumber)  • Using physical guidance if necessary, peel harder food (eg apple, potato)  • Grate soft food, using a grater (eg cheese)  •Use a melon baller to core an apple  **Independently:**  • Mash cooked food (eg potatoes with a masher)  • Drain away liquids from packaged food using a sieve or colander (eg tuna or sweet corn  • Use a lemon squeeze | **With moderate supervision:**  • Mix, stir and combine liquid and dry ingredients (eg muffins)  • Use hands to rub fat into flour (eg rock buns)  • Crack an egg and beat together using a fork  • Use a small table knife for spreading soft spreads on to bread  • Use hands to shape dough into small balls or shapes  • Assemble and arrange cold ingredients (eg sandwich, fruit kebabs, bruschetta) Independently:  • Sift flour into bowl | Note: Although children will not be cooking hot food, children should understand how hot food is cooked safely by:  • observing adults using the hob, oven, toaster and/or microwave  **With close supervision:**  • Be able to prepare food for baking and frying such as greasing baking tins and adding oil to frying pans / Saucepans |
| **Recipes – taken mainly from**  [Recipes - Food A Fact Of Life](https://www.foodafactoflife.org.uk/recipes/)  Broccoli and Bean Salad  Twice baked jacket potatoes  Cheese Straws  Sandwich Wrap  Sardine Pâté Sandwich Filling  Tomato and Basil Tartlets |

|  |  |  |  |
| --- | --- | --- | --- |
| **Year 2**  Equipment needed for skill development | **Cutting and knife skills** | **Mixing and Moulding** | **Heating and Cooling** |
| Mixing spoons • Table knives • Forks • Mixing bowls • Serrated vegetable knives • Mashers • Peelers • Melon ballers • Graters • Sieves • Colanders • Lemon squeezer | **With close supervision:**  • Use the bridge hold to cut harder foods using a serrated vegetable knife (eg apple)  • Use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato)  • Cut food into evenly sized largish pieces (eg potatoes)  **With moderate supervision:**  • Peel soft vegetables using a peeler (eg cucumber)  • Using physical guidance if necessary, peel harder food (eg apple, potato)  • Grate soft food, using a grater (eg cheese)  •Use a melon baller to core an apple  **Independently:**  • Mash cooked food (eg potatoes with a masher)  • Drain away liquids from packaged food using a sieve or colander (eg tuna or sweet corn  • Use a lemon squeeze | **With moderate supervision:**  • Mix, stir and combine liquid and dry ingredients (eg muffins)  • Use hands to rub fat into flour (eg rock buns) • Crack an egg and beat together using a fork  • Use a small table knife for spreading soft spreads on to bread  • Use hands to shape dough into small balls or shapes  • Assemble and arrange cold ingredients (eg sandwich, fruit kebabs, bruschetta) Independently:  • Sift flour into bowl | Note: Although children will not be cooking hot food, children should understand how hot food is cooked safely by:  • observing adults using the hob, oven, toaster and/or microwave  **With close supervision:**  • Be able to prepare food for baking and frying such as greasing baking tins and adding oil to frying pans / Saucepans |
| **Recipes – taken mainly from**  [Recipes - Food A Fact Of Life](https://www.foodafactoflife.org.uk/recipes/)  Broccoli and Bean Salad  Twice baked jacket potatoes  Cheese Straws  Sandwich Wrap  Sardine Pâté Sandwich Filling  Tomato and Basil Tartlets |
| **Year 3**  Equipment needed for skill development | **Cutting and Knife skills** | **Mixing and Moulding** | **Heating and Cooling** |
| Balloon whisks • Garlic crushers Mixing spoons • Table knives • Forks • Serrated vegetable knives • Mashers • Peelers • Melon ballers • Graters • Sieves • Colanders • Lemon squeezers • Biscuit cutters • Oven gloves • Fish slices | **With moderate supervision:**  •begin to use the claw grip to cut harder foods using a serrated vegetable knife (eg carrot)  • begin to use both the bridge hold and claw grip to cut the same food using a serrated vegetable knife (eg onion)  • Use a masher to mash hot food to a fairly smooth texture  • Cut foods into evenly sized strips or cubes (eg peppers, cheese)  • Crush garlic using a garlic press  • Grate harder food using a grater (eg apples, carrots)  **Independently:**  • Begin to peel harder food (eg apple, potato) | **With moderate supervision:**  •Mix, stir and combine wet and dry ingredients uniformly (eg to form a dough)  •Crack an egg and beat with balloon whisk  •Cream fat and sugar together using a mixing spoon  • Use a rolling pin to flatten and roll out dough (eg scones)  • use biscuit cutters  • Coat food with egg and breadcrumbs (eg fish cakes)  **Independently:**  • Sieve flour, raising agents and spices together into a bowl  • Use hands to rub fat into flour (eg scones, apple crumble)  • Knead and shape dough into evenly sized shapes  • Assemble and arrange ingredients for simple dishes (eg apple crumble, scrambled egg on toast) | Note: Although pupils will not be cooking food on the hob or in the oven, pupils should understand how to use them safely by:  • observing adults cooking on the hob and putting in and removing food from the oven  **With close supervision:**  • begin to use a toaster or microwave (e.g beans on toast)  • Using physical guidance when necessary, handle hot food safely once adults have removed food from the hob or oven (e.g. use oven gloves and a fish slice to remove scones from the baking tray) |
| **Recipes – taken mainly from**  [Recipes - Food A Fact Of Life](https://www.foodafactoflife.org.uk/recipes/)  • Greek Salad • Spanakopita • Muesli and Yoghurt Layer • Stuffed Tomatoes • Pasta Salad • Bacon and Courgette Muffins |

|  |  |  |  |
| --- | --- | --- | --- |
| **Year 5 and 6**  Equipment needed for skill development | **Cutting and Knife skills - Year 4** | **Mixing and Moulding Year 4** | **Heating and Cooling Year 4** |
| • Electric hand mixers • Food processors • Electric hand blenders • Garlic crushers • Mixing spoons • Table knives • Forks • Serrated vegetable knives • Peelers • Graters • Sieves • Colanders • Lemon squeezers • Biscuit cutters • Can openers Ring pull tinned food • Oven gloves • Fish slices  **Recipes – taken mainly from**  [Recipes - Food A Fact Of Life](https://www.foodafactoflife.org.uk/recipes/)  • Salmon and Dill Crispy Coat Fishcakes  • Stafidopsomo - Raisin Bread  • Sunset Pasta Salad  • Carrot and Coriander Soup  • Parsnip and Apple Soup  • Green pea Pâté  • Filo Parcels  • Caribbean Red Pepper Salsa  • Penne All’ Arrabiata  • Minestrone Soup  • Pizza Wheels  • Spinach and Cheese Bread  • Butternut Squash Cous Cous  • Fish Pie  • Spaghetti Bolognaise | **With moderate supervision:**  • Use the claw grip to cut harder foods using a serrated vegetable knife (eg carrot)  • Use both the bridge hold and claw grip to cut the same food using a serrated vegetable knife (eg onion)  • Use a masher to mash hot food to a fairly smooth texture  • Cut foods into evenly sized strips or cubes (eg peppers, cheese)  **Independently:**  • Peel harder food (eg apple, potato)  • Crush garlic using a garlic press  • Grate harder food using a grater (eg apples, carrots) | **With moderate supervision:**  •Mix, stir and combine wet and dry ingredients uniformly (eg to form a dough)  •Cream fat and sugar together using a mixing spoon  **Independently:**  • Sieve flour, raising agents and spices together into a bowl  • Use hands to rub fat into flour (eg scones, apple crumble)  • Crack an egg and beat with balloon whisk  • Use a rolling pin to flatten and roll out dough (eg scones)  • use biscuit cutters  • Coat food with egg and breadcrumbs (eg fish cakes)  • Knead and shape dough into evenly sized shapes  • Assemble and arrange ingredients for simple dishes (eg apple crumble, scrambled egg on toast) | Note: Although pupils will not be cooking food on the hob or in the oven, pupils should understand how to use them safely by:  • observing adults cooking on the hob and putting in and removing food from the oven  **With close supervision:**  • Confidently use a toaster or microwave (e.g beans on toast)  • Handle hot food safely once adults have removed food from the hob or oven (e.g. use oven gloves and a fish slice to remove scones from the baking tray) |
| **Cutting and Knife skills Year 5** | **Mixing and Moulding Year 5** | **Heating and Cooling Year 5** |
| **With moderate supervision:**  • Finely grate hard foods (eg zesting, parmesan cheese) • With support, use a can opener and open ring-pull tin • Dice foods and cut them into evenly sized, fine pieces (eg garlic, vegetable batons, herbs)  **Independently:**  • Confidently use the claw grip to cut harder foods using a serrated vegetable knife (eg carrot)  • Confidently use both the bridge hold and claw grip to cut the same food using a serrated vegetable knife (eg onion)  •Confidently peel harder food using a peeler (eg apple, potato) | **With close supervision:**  • use a food processor or electric hand blender to mash, blend or puree hard ingredients or hot food (eg chickpeas for hummus or vegetables for soup)  **With moderate supervision:**  • With help begin to separate eggs • whisk using an electric hand mixer (eg eggs)  • cream fat and sugar together using an electric hand mixer  • Use a rolling pin to roll out dough to a specific thickness (eg pizza)  • Use biscuit cutters accurately to assemble, arrange and layer more advanced dishes (eg apple sponge pudding, shepherd’s pie)  **Independently:**  • Use fingertips to rub fat into flour to make fine ‘bread crumbs’ (eg apple crumble)  • Sieve wet and dry ingredients with precision  • Confidently crack an egg  • Spread food evenly with a coating, paste or glaze  • Knead and shape dough into a variety of shapes  • Use hands to shape mixtures into evenly sized pieces (eg burgers) | Note: Although pupils will not be putting in or removing food from the oven, they should understand how to use the oven safely by observing adults  **With close supervision:**  • With help, begin to use the hob or electric saucepan (wok or stock pot) to cook simple dishes (eg burgers, soup)  • handle hot food safely, using oven gloves to carefully remove cooked food with a fish slice from a baking tray on to a cooling rack |
|  | **Cutting and Knife skills Year 6** | **Mixing and Moulding Year 6** | **Heating and Cooling Year 6** |
|  | **With moderate supervision:**  • Begin to use a can opener and open ring-pull tin  • Dice foods and cut them into evenly sized, fine pieces (e.g. garlic, vegetable batons, herbs)  **Independently:**  • Finely grate hard foods (e.g. zesting, parmesan cheese) • Confidently use the claw grip to cut harder foods using a serrated vegetable knife (e.g. carrot)  • Confidently use both the bridge hold and claw grip to cut the same food using a serrated vegetable knife (eg onion)  • Confidently peel harder food using a peeler (e.g. apple, potato) | **With close supervision:**  • use a food processor or electric hand blender to mash, blend or puree hard ingredients or hot food (eg chickpeas for hummus or vegetables for soup)  **With moderate supervision:**  • separate eggs  • whisk using an electric hand mixer (e.g. eggs)  • cream fat and sugar together using an electric hand mixer  **Independently:**  • Use fingertips to rub fat into flour to make fine ‘bread crumbs’ (eg apple crumble)  • Sieve wet and dry ingredients with precision  • Confidently crack an egg  • Use a rolling pin to roll out dough to a specific thickness (eg pizza)  • Use biscuit cutters accurately to assemble, arrange and layer more advanced dishes (eg apple sponge pudding, shepherd’s pie)  • Spread food evenly with a coating, paste or glaze  • Knead and shape dough into a variety of shapes  • Use hands to shape mixtures into evenly sized pieces (eg burgers | Note: Although pupils will not be putting in or removing food from the oven, they should understand how to use the oven safely by observing adults  **With close supervision:**  • Use the hob or electric saucepan (wok or stock pot) to cook simple dishes (eg burgers, soup)  • handle hot food safely, using oven gloves to carefully remove cooked food with a fish slice from a baking tray on to a cooling rack |

**At a Glance – Progression in Technical Knowledge**

|  |  |  |  |
| --- | --- | --- | --- |
| **Aspect** | **By the end of year 2** | **By the end of year 4** | **By the end of year 6** |
| **Structures** | Use simple methods of making free standing structures stronger and more stable | Use strong shell structures  Strengthening 2-D frameworks | Reinforcing and strengthening 3-D frameworks |
| **Mechanisms and mechanical control** | Use wheels and axles  Use levers and sliders | Use levers and linkages  Use syringes and tubing to produce movement | Use cams to change rotary motion to linear/reciprocating movement  Use pulleys and gears |
| **Electrical control** | Not applicable | Use series circuits and simple switches | Using series or parallel circuits with more complex switches |
| **Control and programming** |  | how to program a computer to control their products | how to program a computer to monitor changes in the environment and control their products |
| **Textiles** | Use simple joining techniques to construct products | Using a 2-D shape to produce a 3D product | Use a combination of shapes to produce a textile product |
|  | • Making/using simple paper pattern pieces.  • Cutting fabric carefully.  • Learning sewing basics – threading a needle, knotting your thread, finishing off.  • Sewing using running stitch, attempting to produce neat, equal stitches  • Creating a design on fabric using applique.  • Creating a design on fabric using pens/paint | • Making/using a paper pattern (front and back pieces). • Cutting fabric with increasing accuracy.  • Sewing basics – threading a needle, knotting your thread, finishing off.  • Sewing using running stitch and overstitch.  • Creating a design on fabric using applique.  • Sewing on simple components – buttons/sequins/ribbon  • Using stuffing | Making/using a paper pattern (front and back pieces).  • Including a seam allowance.  • Cutting fabric accurately.  •Sewing basics – threading a needle, knotting your thread, finishing off.  •Sewing neatly using running stitch, overstitch and back stitch.  • Turning out so stitching is hidden.  • Creating designs on fabric using applique/pens/ paint. • Incorporating a fastening component – button/zip/press stud |
| **Food and nutrition** | Combine two or more fresh ingredients according to their sensory characteristics  A focus on  Cutting  Peeling  Grating  mixing  spreading  combining | Combining fresh, pre-cooked and processed foods according to their sensory characteristics  A focus on all previous learning and…  Sieving  Rubbing in  Cracking eggs  Using cutters  Kneading and shaping  Coating  Rolling out  whisking | Adapt a recipe by adding or substituting an ingredient  A focus on all previous learning and …  Dicing  Separating eggs  Creaming  Rolling out evenly  Kneading and shaping more complex shapes and styles of bread  Assembling and arranging |
| **Drawing/designing** | Drawings need to be a clear representation of the product they are evaluating or designing  Labels and annotations need to be used  Introduce exploded diagrams  Introduce flow charts | Drawings need to show detail. They need to have colour, labels, annotations and clear components  Develop use of exploded diagram  Introduced cross sections  Introduce layered diagrams using tracing paper  Introduce use of squared paper for scale and actual size for production of pattern pieces  Circuit diagrams | Drawings need to be 3-D with shading and showing all components and detailed annotations  Orthographic drawings – side, front and plan views  Use of dimensions  Perfect use of cross sections and exploded diagrams  Perfect use of layered diagrams  Circuit diagrams |

**Where to buy resources/consumables and kits from.**

|  |  |
| --- | --- |
| **Ivydale Technology Shop**  [ISTS homepage (southwarklea.org.uk)](https://www.slstc.southwarklea.org.uk/)  **email for Paul Newham:**[**pnewham@ivydale.southwark.sch.uk**](mailto:pnewham@ivydale.southwark.sch.uk)  **email for Technology Shop:**[**techshop@ivydale.southwark.sch.uk**](mailto:techshop@ivydale.southwark.sch.uk) | **Run by Paul Newman**  **Consumables – excellent for wheels and dowels -always a good fit**  **Kits**  **Class packs**  **You can confidently buy from this online shop knowing that components will fit together and be of a good quality,**  **Kits are very useful for your own knowledge and understanding about mechanism or gears and pulleys – e.g fairgrounds** |
| **Technology Supplies**  [TSL | Design & Technology Tools, Products, Equipment & Materials (technologysupplies.co.uk)](https://www.technologysupplies.co.uk/products) | **Very useful site and local!**  **You can buy hard to find axle brackets here.** |
| **CraftPacks Educational Supplies**  [http://www.craftpacks.co.uk](http://www.craftpacks.co.uk/) | **Reasonably priced** |
| **TTS**  [Design Technology Resources for Primary Schools from TTS (tts-group.co.uk)](https://www.tts-group.co.uk/primary/dt/) | **Well known supplier** |
| Rapid Education  [Education Suppliers, Rapid School Supplies | Rapid Online](https://www.rapidonline.com/Education) | **Useful for card discs to make rotary switches.** |