

Progression in DT at The Milford Academy

| DT Skill/Strand | R | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|-----------------|---|---|--|--|---|---|---|
| Design | Use what they have learned about media and materials in original ways, thinking about uses and purpose. | <p>To begin to develop ideas for a set product.</p> <p>To design products that have a clear purpose and an intended user.</p> <p>To explain verbally what they are going to make.</p> <p>To design by drawing a picture and begin to label with materials that you will use.</p> <p>To identify how parts will be joined.</p> | <p>To recognise the purpose of a product.</p> <p>To use knowledge of existing products to influence own design.</p> <p>To create a more detailed design by drawing a picture and labelling materials and tools to be used.</p> <p>To know how a design will be joined.</p> <p>To begin to recognise main stages required to make product.</p> <p>To explore the purpose of templates and mock ups of ideas in card or paper.</p> <p>To explain why materials are chosen by annotating.</p> <p>To explain verbally in greater depth what they are making.</p> | <p>To start to generate own ideas for an item, considering its purpose and the user/s.</p> <p>To identify the main stages of making a product</p> <p>To establish criteria for a successful product.</p> <p>To make products by working efficiently (such as by cutting all pieces or attaching in a particular order).</p> <p>To review and refine work and techniques throughout.</p> <p>To make simple mock ups of ideas to test key features and skills.</p> | <p>To generate ideas, considering current products and evaluations.</p> <p>To identify and consider more detailed success criteria when designing a product.</p> <p>To explore how to make labelled drawings from different viewpoints showing specific features.</p> <p>To develop a clear idea of what has to be done, planning how to use equipment, materials and processes.</p> <p>To explore how software can be used to design and represent product designs.</p> <p>To make simple mock ups of ideas adjusting original design as needed.</p> | <p>To generate own designs to solve a problem or suit a purpose, building on knowledge of existing products and consumer needs.</p> <p>To design with the user in mind, motivated by the service a product will offer.</p> <p>To present detailed designs showing sketches and cross-sectional imagery as well as multiple viewpoints of a product.</p> <p>To make products through stages of prototypes, making continual refinements.</p> <p>To gather feedback on an original design and use this to further refine ideas.</p> <p>To design products ensuring products have a high-quality finish, using art skills where appropriate.</p> | <p>To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>To design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user</p> <p>To consider the availability and costings of resources when planning out designs</p> <p>To work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment</p> |

| DT Skill/Strand | R | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|--------------------|--|---|--|---|--|--|--|
| <p>Make</p> | <p>To safely use and explore a variety of materials, tools, and techniques To experiment with colour, design, texture, form, and function. To represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play, and stories.</p> | <p>To explain why materials are chosen.</p> <p>To cut materials with some accuracy (paper, card, felt) To understand the need to measure and mark out</p> <p>To follow instructions to assemble, join and combine materials, components or ingredients</p> <p>To attach simple decorations to improve the appearance of their product</p> | <p>To follow a simple plan, with support</p> <p>To begin to select from a range of hand tools and equipment, such as scissors, rulers, hammers</p> <p>To select from a range of materials, textiles and components according to their characteristics</p> <p>To cut and shape a range of materials (fabric, thin plastic, polystyrene, thick cardboard) with some accuracy</p> <p>To assemble, join and combine materials, components or ingredients</p> <p>To begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations</p> <p>To select appropriate joining techniques for different materials and situations e.g. glue, tape</p> <p>To measure independently to the nearest cm and mark out with support</p> | <p>Choose suitable techniques to construct products or to repair items</p> <p>To measure and mark out to the nearest cm independently</p> <p>To place the main stages of making in a systematic order</p> <p>To score materials with support</p> <p>To begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics</p> | <p>To carefully select from a range of tools and equipment, explaining their choices</p> <p>To select from a given range of materials and components according to their functional properties or aesthetic qualities</p> <p>To learn to use a limited range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures</p> <p>To cut, shape and score materials with increasing accuracy</p> <p>To measure and mark out to the nearest millimetre</p> <p>To assemble, join and combine material and components with some degree of accuracy</p> <p>To strengthen materials using suitable techniques</p> | <p>To learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures</p> <p>To shape and score materials with precision and accuracy</p> <p>To assemble, join and combine materials and components with accuracy</p> <p>To select from a range of materials and components according to their functional properties or aesthetic qualities</p> <p>To cut, shape and score materials with precision and accuracy (paper, card, fabric)</p> <p>To assemble, join and combine materials and components with increasing accuracy</p> <p>To refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape</p> | <p>To show an understanding of the qualities of materials to choose appropriate tools to cut and shape (e.g. sharper scissors for fabric than paper)</p> <p>To independently plan by suggesting what to do next; To select from a range of materials and components according to their functional properties and aesthetic qualities, giving clear reasons for their choices</p> <p>To create step-by-step plans as a guide to making;</p> <p>To independently use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures;</p> <p>To independently take exact measurements and mark out, to within 1 millimetre</p> <p>To use a full range of materials and components, including construction materials and kits, textiles, and mechanical components</p> <p>To cut, shape and score a range of materials with precision and accuracy (wood, wire, stretchy fabric)</p> <p>To independently assemble, join and combine materials and components with accuracy</p> |

| DT Skill/Strand | R | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|-----------------|--|--|---|---|---|---|---|
| Evaluate | To use what they have learned about media and materials in original ways, thinking about uses and purposes | <p>To explore existing objects and designs to identify own likes and dislikes.</p> <p>To explore pictures/objects focusing on how they have been made.</p> <p>To suggest improvements to existing designs.</p> <p>To share own product with others and to say what went well and what could be done better/ differently next time.</p> | <p>To evaluate their products and ideas against purpose (simple design criteria).</p> <p>To identify strengths and possible changes they might make to improve their products.</p> <p>To talk confidently about their ideas, saying what they like and dislike.</p> <p>To explore products to see how they have been made and how this can be used to make own design.</p> <p>To understand that products have been designed and made for a purpose</p> | <p>To explore existing designs and improve upon, giving reasons for choices.</p> <p>To recognise how products have been designed to fill a gap in the market/to support a particular need.</p> <p>To explore what materials/ingredients products are made from and suggest reasons for this;</p> <p>To consider their design criteria as they make their product</p> <p>To evaluate their final product based on their own design criteria.</p> <p>To know some key events, including technological developments, and designs of individuals in design and technology that have heled shape the world</p> <p>To identify some of the great designers in all of the areas of study to generate ideas for designs (textiles, mechanics)</p> | <p>To disassemble products to understand how they work.</p> <p>To gather feedback from others.</p> <p>To explore and evaluate existing explaining the purpose of the product and whether it is designed well to meet the intended purpose.</p> <p>To consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product.</p> <p>To evaluate their product against their original design criteria suggesting changes they would make if repeating</p> <p>To evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.</p> <p>To identify some of the great designers in all of the areas of study to generate ideas for designs (electronics, food)</p> | <p>To create own design criteria to improve upon existing products</p> <p>To evaluate the quality of design, manufacture and fitness for purpose of products as they design and make</p> <p>To respond to the feedback of others to make improvements</p> <p>To combine elements of design from a range of inspirational designers throughout history</p> | <p>To create own design criteria based on analysis of existing products and purpose of product</p> <p>To complete detailed competitor analysis of other products on the market</p> <p>To continually evaluate the quality of design, manufacture and fitness for purpose of products as they design and make and make ongoing adjustments and refinements</p> <p>To combine elements of design from a range of inspirational designers throughout history, giving reasons for choices</p> |

| DT Skill/Strand | R | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|--|--|---|---|--|---|--|---|
| <p>Technical Knowledge – Construction, Mechanics and Electrical Systems</p> | <p>Explore and use a variety of materials, tools, and techniques to construct models.</p> <p>Develop an understanding of how structures and mechanisms work.</p> <p>Experiment with different ways of joining materials to create stable constructions.</p> <p>Explore movement through simple mechanisms.</p> <p>Foster problem-solving skills and curiosity about how things work.</p> | <p>Paper & Card – moving pictures e.g. ____ To cut materials safely using tools provided (scissors)</p> <p>To demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</p> <p>To identify and use materials to join e.g. split pins, masking tape, treasury tags</p> <p>To cut along lines, straight and curved To explore moving mechanisms and design (pop up, slider, spring)</p> <p>To make a moving picture with at least one moving mechanism (e.g. pop up/slider etc)</p> <p>Constructing a Great Fire of London scene To build structures using a range of different construction materials (duplo, lego etc)</p> <p>To explore how to join appropriately for different materials and situations e.g. glue, tape</p> <p>To use a glue gun with adult support.</p> <p>To use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.</p> | <p>Paper & Card – structures (e.g. ____) To demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen) independently. To investigate ways to make structures more stable (legs, flanges etc)</p> <p>To investigate and use joining techniques: temporary, fixed and moving – slits, folds, flaps.</p> <p>To investigate strengthening sheet materials</p> <p>To build structures, exploring how they can be made stronger, stiffer and more stable including rolling paper.</p> <p>Build a moving ____ with wheels linked to ____</p> <p>To make vehicles with construction kits which contain free running wheels</p> <p>To use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels.</p> <p>To attach wheels to a chassis using an axle</p> | <p>To cut materials accurately and safely by selecting appropriate tools (scissors, craft knife)</p> <p>Electricals and electronics: Moving Monsters – ‘night light’.</p> <p>To create series and parallel circuits.</p> <p>To recognise how bulbs, switches, buzzers and motors can be used in a product.</p> <p>To design and make a product containing switches, bulbs, buzzers or motors.</p> | <p>To apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</p> <p>Mechanics</p> <p>To understand mechanical systems in existing products e.g. gears, pulleys and levers.</p> <p>To consider how a mechanical system could be used in product of own design (link to science – forces).</p> <p>To create a product that uses appropriate mechanisms (such as levers, winding mechanisms, pulleys and gears)</p> <p>Computing: To control and monitor models using software designed for this purpose (e.g. Lego sets)</p> | <p>To cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).</p> <p>Develop a range of practical skills to create products (e.g. cutting, drilling and screwing, nailing, gluing, filling and sanding).</p> <p>Mechanics: link to fairground rides</p> <p>To convert rotary motion to linear using cams and cranks.</p> <p>To use innovative combinations of electronics (or computing) and mechanics in own product designs</p> | <p>Electricals and electronics: link to building an alarm</p> <p>To create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</p> <p>Computing: To write code to control and monitor models or products. link to building an alarm</p> |

| DT Skill/Strand | R | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|-----------------|---|--|--|----|---|----|---|
| <u>Textiles</u> | <p>Explore and use a variety of fabrics and materials in creative ways.</p> <p>Develop fine motor skills by handling, cutting, folding, and manipulating textiles.</p> <p>Experiment with joining materials</p> <p>Investigate textures, patterns, and properties of different fabrics.</p> <p>Use textiles to create simple products with a purpose, such as puppets or collages</p> <p>Foster curiosity and problem-solving through hands-on exploration of textiles.</p> | <p>To develop sewing techniques using a range of different materials such as card and hole punching and binca</p> <p>To use a prepared template.</p> <p>To make a template following instructions and cut out fabric to make design.</p> <p>To join 2 pieces of fabric glue and staples.</p> <p>To begin to join 2 pieces of fabric using running stitch, with support.</p> <p>To develop a product by adding decoration with buttons, beads, ribbons and sequins, by joining with glue.</p> | <p>Textiles- Bookmark To join fabrics by using running stitch with more precision (I.e. straight lines and recognising where to start so knot isn't visible). To design, make and use their own template.</p> <p>To explore ways of making and using more than one template at a time.</p> <p>To develop a product by sewing on decoration such as buttons, beads, sequins, braids, ribbons.</p> <p>To explore ways to colour textiles to suit purpose of design (fabric pens, batik and dye etc)</p> <p>Links to History topic – The Lace Market/ Framework knitters To use materials for simple weaving through a stiff card loom or simple frame.</p> | | <p>Kindness Quilt To use sewing techniques to join fabrics by using running and over stitch.</p> <p>To independently pin two pieces of fabric together and then join</p> <p>To develop a product by adding fastenings</p> <p>To sew using a range of different stitches (e.g. blanket stitch, back stitch.</p> <p>To demonstrate how to measure, tape or pin, cut and join fabric with some accuracy to make a simple product</p> <p>To understand the need for and include a seam allowance when designing and measuring fabrics.</p> <p>To select the most appropriate techniques to decorate textiles</p> | | <p>Make a pencil case for secondary school To decide which stitches are most suitable for design and complete these proficiently.</p> <p>To design a product using multiple pattern pieces and cut this from fabric considering wastage.</p> <p>To create and sew products employing a seam allowance. To use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles – such as a soft decorative feature on cushion.</p> <p>To select from and use a wide range of materials according to their functional properties and aesthetic qualities.</p> <p>To join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch;</p> |

| DT Skill/Strand | R | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|-------------------------------------|---|--|--|---|--|--|---|
| <p><u>Cooking and Nutrition</u></p> | <p>Explore and use a variety of ingredients to create simple food products.</p> <p>Develop fine motor skills through stirring, cutting (with appropriate tools), mixing, and kneading</p> <p>Experiment with combining ingredients and observe how they change when mixed, heated, or cooled.</p> <p>Begin to understand the importance of hygiene and safety when handling food.</p> <p>Talk about different foods, where they come from, and how they contribute to a healthy diet.</p> <p>Engage in sensory exploration by smelling, tasting, and describing different ingredients.</p> <p>Foster curiosity and independence in preparing and enjoying food.</p> | <p>Links to PSHE, Science + Geography To know which foods are healthy and unhealthy.</p> <p>To understand that all food comes from plants or animals</p> <p>Fruit kebabs food tasting – The Very Hungry Caterpillar To cut ingredients safely and hygienically.</p> <p>Make Gingerbread Men – Traditional Tales- part of English unit To measure and weigh food items according to a simple recipe, e.g. spoons, cups, electronic scales (with support)</p> | <p>Links to PSHE, Science To understand the need for a variety of foods in a diet</p> <p>To know that food has to be farmed, grown, or caught</p> <p>Making a ‘Healthy Dippers’/Sandwiches for a summer picnic</p> <p>To cut, peel and grate a range of ingredients safely and hygienically To prepare simple dishes safely and hygienically, without using a heat source (sandwiches)</p> | <p>Links to PSHE, Science To name the five food groups and how they benefit our health</p> <p>To know the term “balanced diet” and give examples of a balanced healthy meal</p> <p>To understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body;</p> <p>Making Greek Salad/ Making Pizza To use a range of techniques such as mashing, whisking, crushing to prepare ingredients safely and hygienically (Greek Salad, dressings, potato salad...)</p> <p>To follow a simple recipe with support.</p> | <p>Links to PSHE, Science Plan a meal which gives a healthy balance of foods from across the food groups</p> <p>Links to Outdoor Ed To identify that food can be grown, reared, caught or processed.</p> <p>To start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world</p> <p>To begin understand seasonality.</p> <p>Design and make an egg-based dish using home-grown produce from veg plot To begin to use techniques such as mixing, kneading and baking to assemble or cook ingredients.</p> <p>To use a heat source, with support, to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven;</p> <p>To begin to measure and weigh ingredients in grams and millilitres</p> <p>To follow a simple recipe independently.</p> | <p>Links to PSHE, Science Plan a day’s menu which gives a healthy balance of foods from across the food groups</p> <p>To know how global foods are harvested and processed for transport.</p> <p>To know how different foods need to be stored (knowledge of microorganisms)</p> <p>Plan/Design a healthy packed lunch To use a range of cooking techniques to assemble or cook ingredients</p> <p>To accurately measure ingredients to the nearest gram, millilitre’s etc</p> | <p>Links to PSHE, Science Plan and cook a healthy menu identifying and using seasonal, local produce (link to History and rationing) To know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world;</p> <p>Global Food Tasting + 3 Course Meal To know how the global food industry has developed since “Grow your Own” during WW2</p> <p>To investigate different storage techniques</p> <p>To prepare ingredients hygienically choosing the most appropriate method and utensils for the purpose (meal)</p> <p>To understand how to use a range of cooking techniques, such as griddling, grilling, frying and boiling;</p> <p>To measure accurately and calculate ratios of ingredients to scale up or down from recipe.</p> <p>To create, adapt and refine recipes focusing on ingredients e.g. adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; To alter methods, cooking times and temperatures</p> |