|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Design Technology Progression Framework** |  |
|  |  | **EYFS Areas of Study**ELGs: * Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
* They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
* 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, paint brushes 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.
* Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
* **Skills progression:** Opportunities for fine motor control are planned into morning activities and resourcing for continuous provision; these are developed as the children make progress. The workshop is equipped with various materials and tools to support the children in their experimentations, and updated in lieu of planned teaching and learning opportunities.The class teacher alongside teaching assistants will support the children’s development of learnt techniques during their continuous provision sessions.Through a combination of carefully planned for and spontaneous provocation in continuous provision, pupils learn to use their imagination in response to role play situations, storytelling and different materials/opportunities in DT. Teacher Directed (planning and review sessions, in particular) provides scaffolding for thinking through ideas, uses and purposes of different materials and tools. Children learn to express and represent their ideas more independently as the terms go on, practising key skills in design, technology and art.
 |
| **National Curriculum Aim** | **Rec** | **Y1** | **Y2** | **End of KS Expectations** | **Y3** | **Y4** | **Y5** | **Y6** | **End of KS Expectations** |
| **Processes**  | **Design** | Design purposeful, functional, appealing products for themselves and other users based on design criteriaGenerate, develop, model and communication their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technologyUse 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 | I can talk about what I want to make and how I might make it.  | I can generate ideas by drawing on my own experiences and existing products. I can use a simple design criterion to help develop my ideas. I can develop and communicate my ideas by talking, drawing and beginning to use models/templates/mock-ups. I can say whether my product is for myself or another user.I can describe what my product is for. I can describe how my product will be suitable for its intended user.  | I can generate ideas by drawing on my own experiences and existing products. I can use a simple design criterion to help develop my ideas. I can develop and communicate my ideas by talking and drawing. I can model my ideas by exploring materials, components and construction kits and by making templates and mock-ups. I can use information and communication technology, where appropriate, to develop and communicate my ideas. I can say whether my product is for myself or another user.I can describe what my product is for. I can describe how my product will be suitable for its intended user.  | **To be able to generate own ideas by drawing on existing products and own experiences.** **To be able to communicate ideas orally, through pictures, models, templates, mock-ups and where appropriate, information communication technology.** **To be able to follow a design criterion to develop ideas.** **To be able to describe the user and purpose of the product.**  | I can begin generate ideas by researching others’ needs. I can follow a given design criteria. I can say how my design will appeal to the intended user.I can communicate my ideas using labelled sketches and share and clarify my ideas through discussion with others. I can create a plan which shows order, equipment and tools. I can use computers, models, templates and mock-ups to develop my ideas.I can explain the purpose of the product and how it will work.  | I can research the needs and wants of particular individuals or groups to help generate my ideas. I can begin to create my own design criteria.I can say how my design will appeal to the intended user.I can communicate my ideas with others through annotated sketches and suggest improvements.  I can produce a plan and explain it to others, considering how realistic it is. I can make prototypes and use computers to share my ideas. I can make design decisions considering the availability of resources. I can explain the purpose and functionality of the product.  | I can use the internet and questionnaires for research and design ideas. I can create my own design criteria. I can consider the needs/wants of individuals/groups when I am designing. I can produce a logical, realistic plan and explain it to others, suggesting improvements where appropriate. I can use cross-sectional drawings, prototypes, pattern pieces and computers to communicate my ideas to others. I can make design decisions considering time and resources.I can clearly explain how the product is fit for purpose, and how parts of the product will work.  | I can carry out and draw upon research (surveys, questionnaires, interviews and web-based resources) to generate innovative ideas. I can create a design criteria and specification. I use my research of others’ needs and wants to identify features of my design that will appeal to the intended user. I can follow and refine a logical plan. I can independently model and refine design ideas by creating and making cross-sectional drawings, exploded diagrams, prototypes, and pattern pieces. I can make design decisions considering time, resources and cost. I can clearly explain how the product is fit for purpose, and how parts of the product will work. | **To be able to conduct and use research in the generation of ideas.** **To be able to create and follow a design criteria and specification.** **To be able to create a logical plan.** **To be able to create cross-sectional drawings, pattern pieces, prototypes and exploded diagrams.** **To make decisions considering time, resources and cost.** **To be able explain clearly how the product is fit for purpose and the functionality of the product.**  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Make** | Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accuratelySelect from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics, functional properties and aesthetic qualities  | I can plan by suggesting what to do next.I can select and use tools and explain my choices, to cut, shape and join paper and card.I can select new and reclaimed materials and construction kits to build structures.I can perform practical tasks such as mixing and spreading.I can use simple finishing techniques suitable for the product I am creating. | I can explain what I am making and why. I can consider what I need to do next.  I can select tools/equipment to cut, shape, join, finish and explain my choices. I can try to use finishing techniques to improve how my product looks. I can follow safety and hygiene rules.  | I can explain what I am making and why it fits the purpose. I can make suggestions as to what I need to do next. I can join materials/components together in different ways. I can measure, mark, cut and shape materials and components with support. I can describe which tools I am using and why. I can choose suitable materials and explain my choices by considering their characteristics. I can use finishing techniques to make a product look good. I can work safely and hygienically.  | **I can explain what I am making, what I need to do next and why.** **I can join materials and components together in different ways.** **I can measure, mark and shape materials and components with support.** **I can select and use materials based on their characteristics.** **I can work safely and hygienically.**  | I can order the main stages of working. I can select suitable tools/equipment, explain my choices and begin to use them accurately.I can select appropriate materials, fit for purpose.I can begin to assemble, join and combine materials and components with some accuracy.I can begin to measure, mark, cut and shape materials/components with some accuracy. I can begin to apply a range of finishing techniques with some accuracy. I can consider how good my product will be. I can work safely and hygienically.  | I can work through a plan, in order. I can select suitable tools/equipment, explain my choices in relation to required techniques and use accurately. I can select appropriate materials, fit for purpose and considering functionality. I can assemble, join and combine materials and components with some accuracy. I can measure, mark, cut and shape materials/components with some accuracy. I can apply a range of finishing techniques with some accuracy.I can realise if the product is going to be good quality. I can work safely and hygienically.  | I can create and follow a detailed step-by-step plan. I can produce a suitable list of tools, equipment and materials needed.I can select appropriate materials, fit for purpose and explain my choices considering functionality. I can mainly accurately assemble, join and combine materials/components. I can mainly accurately measure, mark, cut and shape materials/components.I can mainly accurately apply a range of finishing techniques. I can use techniques that involve a small number of steps. I can begin to be resourceful in tackling practical problems. I can explain how my product will appeal to the user.I can work safely and hygienically.  | I can create, follow, and adapt detailed step-by-step plans. I can produce suitable lists of tools, equipment, and materials needed, considering constraints. I can select appropriate materials, fit for purpose and explain my choices considering functionality and aesthetic qualities. I can accurately assemble, join and combine materials/components. I can mainly accurately measure, mark, cut and shape materials/components.I can accurately apply a range of finishing techniques. I can use techniques that involve a number of steps. I can be resourceful in tackling practical problems.I can explain how my product will appeal to the user and make changes to improve the quality. I can work safely and hygienically.  | **To be able to create a detailed plan and follow it.** **To select materials, tools and equipment considering constraints, functionality and aesthetic qualities.** **To be able to accurately use tools and equipment to be able to measure, mark, cut, join, assemble and combine materials/components.****To be able to accurately apply a range of finishing techniques.** **To be able to tackle practical problems resourcefully.** **To be able to evaluate and improve a product during the making process.** **To be able to work safely and hygienically.**  |
| **Evaluate** | Explore and evaluate a range of existing productsEvaluate their ideas and products against design criteriaInvestigate 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 | I can talk about my work in terms of how well it works in relation to the purpose. Did it turn out how you had planned? | I can talk about my work, linking it to what I was asked to do.I can talk about existing products, considering: use, materials, how they work, audience, and where they might be used. I can say what is and is not good about existing products.I can begin to talk about what could make a product better. | I can talk about what went well with my work, thinking about the design criteria. I can talk about existing products, considering: use, materials, how they work, audience, where they might be used and express my personal opinion. I can evaluate how good existing products are. I can talk about what I would do differently if I were to do it again and why.  | **I can evaluate existing products considering their use, materials, functionality, and express my own opinion.** **I can say what is good about my own product, thinking about the design criteria and talk about what I would do differently if I were to do it again.**  | I can refer to a design criterion while designing and making. I can use the design criteria to evaluate my finished product. I can say what I would change to make my design better.I can begin evaluate existing products, considering: how well they’ve been made, materials, whether they work, and how they have been made fit for purpose. I can begin to understand by whom, when and where products were designed. I can research whether products can be recycled or reused.I have learned about some inventors, designers, engineers, chefs, and manufacturers of ground-breaking products.  | I can refer to a design criterion while designing and making. I can use the design criteria to evaluate my finished product. I can begin to explain how I could improve my original design. I can evaluate existing products, considering: how well they’ve been made, materials, whether they work, and how they have been made fit for purpose. I can discuss by whom, when and where products were designed.I know about some inventors, designers, engineers, chefs, and manufacturers of ground-breaking products.  | I can evaluate the quality of my design while designing and making.I can evaluate my ideas and finished product against a specification, considering purpose and appearance.I can test and evaluate my final product. I can evaluate and discuss existing products, considering: how well they’ve been made, materials, whether they work, and how they have been made fit for purpose. I can begin to evaluate how much products cost to make and how innovative they are.I can research how sustainable materials are. I can discuss key inventors, designers, engineers, chefs, and manufacturers of ground-breaking products.  | I can evaluate the quality of my design while designing and making and identify if it is fit for purpose. I can keep checking my design is the best it can be. I can evaluate my ideas and finished product against a specification, stating if it is fit for purpose. I can test and evaluate my final product, explain what would improve it and the effect different resources may have had. I can conduct thorough evaluations of existing products considering: how well they’ve been made, materials, whether they work, and how they have been made fit for purpose.I can evaluate how much products cost to make and how innovative they are.I can research and discuss how sustainable materials are. I can consider the impact of products beyond their intended purpose. I can discuss key inventors, designers, engineers, chefs, and manufacturers of ground-breaking products and say how they contributed to our lives.  | **To be able to evaluate a design against a design specification at multiple points of the design and making process, stating if it is fit for purpose.****To be able to test and evaluate a final product and suggest improvements and the effect they would have.** **To be able to evaluate existing products considering: how well they’ve been made, materials, whether they work, how they have been made fit for purpose, cost, sustainability and innovation.****To be able to discuss key individuals in design technology and how they have shaped the world.**  |
| **Technical Knowledge** | **Structures** | Build structures, exploring how they can be made stronger, stiffer and more stable Apply their understanding of how to strengthen, stiffen and reinforce more complex structures  | Experience of using construction kits to build walls, towers and frameworks. Experience of different methods of joining card and paper. | I can describe differences in materials. I can join materials in different ways, with support. I can suggest ways to make materials/my product stronger. | I can describe some different characteristics of materials.I can join materials in different ways. I can use joining, rolling or folding to make materials stronger. I can use my own ideas to try to make my product stronger. | **To be able to describe some characteristics of different materials.** **To be able join materials in different ways.** **To be able to use joining, rolling, folding and own ideas to make a product stronger.**  | I can use appropriate materials and say why I am using them. I can begin to describe the functional and aesthetic properties of different materials. I can understand that materials can be combined. I can work accurately to make cuts and holes. I can join materials in different ways. I can begin to make strong structures, drawing on previously taught techniques.  | I can use appropriate materials and say why I am using them, considering the design criteria. I can describe the functional and aesthetic properties of different materials. I can understand that materials can be combined to create more useful characteristics. I can continue working on a product even if the original didn’t work.I can make strong structures, drawing on previously taught techniques.  | I can select materials carefully, considering the intended use of the product and the appearance. I can describe the functional and aesthetic properties of different materials and choose materials based on this. I can begin to use materials that can be combined to create more useful characteristics. I can ensure my product is strong and fit for purpose using previously taught techniques and my own ideas. I can begin to reinforce and strengthen a 3D frame.  | I can select materials carefully, considering the intended use of the product, the aesthetics and functionality. I can describe the functional and aesthetic properties of different materials. I can combine materials to create more useful characteristics. I can ensure my product is strong and fit for purpose using previously taught techniques and my own ideas. I can reinforce and strengthen a 3D frame.  | **To be able to select materials considering the intended use, aesthetics and functionality.** **To be able to build strong structures that are fit for purpose.** **To be able describe the functional and aesthetic properties of different materials and know that they can be combined and mixed to create more useful characteristics.**  |
| **Mechanisms** | Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their productsUnderstand and use mechanical systems in their products (for example, gears, pulleys, cams, levers, linkages)  | Early experiences of working with paper and card to make simple flaps and hinges. Experience of simple cutting, shaping and joining skills including scissors, glue, paper fasteners and masking tape.  | I can begin to describe the simple working characteristics of used materials and components. I can begin to use levers and linkages within my product. I can begin to understand how to use wheels and axles within my product.  | I can describe the simple working characteristics of used materials and components. I can use levers and linkages within my product. I can understand how to use wheels and axles within my product. | **To be able to describe the simple working characteristics of levers, linkages, wheels and axles.** **To be able to use levers, linkages, wheels and axles within a product.**  | I can select appropriate components and describe their working characteristics.I can use simple levers and linkages to create movement. I can begin to use pneumatics to create movement.  | I can select appropriate components and describe their working characteristics and why I have chosen them. I can use simple levers and linkages to create movement. I can use pneumatics to create movement.  | I can select appropriate components and describe their working characteristics and why I have chosen them, referring to my design criteria. I can begin to use cams and pulleys/gears to create movement.  | I can select appropriate components and describe their working characteristics and why I have chosen them, referring to my design criteria, considering aesthetics, functionality and purpose.I can use cams and pulleys/gears to create movement.  | **To be able to select components and make justifications considering aesthetics, functionality and purpose.** **To be able to use pneumatics/hydraulics, levers and linkages, wheels and axles, cams and pulleys/gears to create movement.**  |
| **Electrical Systems** | Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motorsApply their understanding of computing to program, monitor and control their products |  |  |  |  | I can use a simple circuit in my product. I can learn about how to programme a computer to control my product.  | I can use a number of circuit components in my product. I can program a computer to control my product.  | I can incorporate a switch into my product. I can confidently use a number of circuit components in my product. I can begin to be able to program a computer to monitor changes in environment and control a product.  | I can use different types of circuit in my product.I can think of ways in which adding a circuit would improve my product. I can program a computer to monitor changes in environment and control a product.  | **To be able to use different types of circuit and a number of electrical components within a product and describe how this improves it.** **To be able to program a computer to control, and monitor changes in environment in order to control, a product.**  |
| **Textiles** | Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics, functional properties and aesthetic qualities | I can handle and manipulate materials such as threads, cottons and wools.I can match and sort threads into colours, sizes and textures.Look at how fabric is constructed of threads. | I can measure, cut and join textiles to make a product, with some support. I can choose suitable textiles for my product.  | I can measure and join textiles together to make a product, and explain how I did it. I can carefully cut textiles to produce accurate pieces. I can explain my choices of textile. I can understand that a 3D textile structure can be made from two identical fabric shapes.  | **To be able to measure and join textiles together and explain how they did it.** **To be able to accurately cut textiles.****To be able to choose suitable textiles and explain choices.** **To understand that a 3D textile structure can be made from two identical fabric shapes.**  | I can join different textiles in different ways. I can choose textiles considering appearance and functionality. I can begin to understand single fabric shape can be used to make a 3D textiles product.  | I can explain how to join things in a different way.I can think about the user when choosing textiles.I can understand that a single fabric shape can be used to make a 3D textiles project. I can consider how to make a textiles product stronger. I can begin to devise a template.  | I can think about a range of ways to join things. I can think about the user and aesthetics when choosing textiles. I can begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. I can think about how to make a textiles product stronger and look better. I can use my own templates.  | I can use a range of joining techniques. I can think about a user’s wants/needs and aesthetics when choosing textiles.I can understand that a single 3D textiles project can be made from a combination of fabric shapes. I can make a product look attractive and strong. I can make my own templates and a prototype.  | **To be able to use a range of joining techniques.** **To be able to choose textiles, considering the user and aesthetics.** **To understand that 3D textiles products can be made from single, two identical and a combination of fabric shapes.** **To be able to make attempts to make a textiles product strong and attractive.****To be able to produce templates and prototypes.**  |
| **Food and Nutrition** | Use basic principles of a healthy and varied diet to prepare dishesUnderstand where food comes fromUnderstand and apple to principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury fishes using a range of cooking techniques Understand seasonality, and know where and how a variety of ingredients are grown, reared caught and processed  | Explore common fruit and vegetables, trying different foods.Be involved in baking activities.Wash hands before working with foods and understand why this is important.  | I can follow rules to work safely and hygienically. I can begin to understand how to use some preparation tools, techniques and processes. I can practise stirring, mixing, pouring and blending. I can use my senses when designing and evaluating a food product. I can understand the need for a variety of food.  | I can discuss how to make an activity safe and hygienic, wash my hands and clean surfaces. I can cut, peel and grate safely with support. I can use and discuss my senses when designing and evaluating a food product. I can describe textures of ingredients and finished products. I can describe some different between some food groups (e.g. sweet, creamy, vegetable etc).I can understand that a healthy diet is varied. I can say where some foods come from (plant or animal). | **To be able to work safely and hygienically with some support.** **To be able to cut, peel and grate safely with support.** **To be able to describe ingredients and products using senses.** **To be able to name and describe the differences between some food groups.** **To understand where food comes from.**  | I can prepare and cook dishes safely and hygienically by following instructions. I can peel, chop, slice, grate, mix, spread, and knead ingredients with some support. I can carefully select ingredients based on how they look, smell, taste, and feel. I can make a food product look attractive. I can begin to describe the food and drink needed for active/healthy bodies. I can begin to understand food comes from the UK and the wider world.  | I can explain how to prepare and cook dishes safely and hygienically. I can peel, chop, slice, grate, mix, spread and knead ingredients. I carefully select ingredients and understand that they can be fresh, pre-cooked or processed. I can think about presenting a food product in an interesting and attractive way. I can describe the eat will plate and understand that a healthy diet is varied and balanced. I can begin to understand that food can be caught, reared or grown in the UK or the wider world.  | I can understand how to prepare and cook a variety of savoury dishes safely and hygienically, including, where appropriate, the use of a heat source.I can peel, chop, slice, grate, mix, spread and knead ingredients with increasing confidence. I can understand seasonality of foods and consider this when selecting ingredients. I can present a food product well ensuring it is attractive, interesting and fit for purpose. I can explain how there are different substances in food/drink that a needed for health. I can begin to understand that food can be caught, reared or grown in the UK or the wider world. | I can prepare and cook a variety of savoury dishes safely and hygienically, including, where appropriate, the use of a heat source.I can peel, chop, slice, grate, mix, spread and knead ingredients with confidence. I can explain the seasonality of foods, and some food processing methods and consider this when selecting ingredients. I can adapt a recipe to change the appearance, taste, texture and aroma. I can present a food product well ensuring it is attractive, interesting and fit for purpose. I can describe some of the different substances in food and drink, and how they can affect health. I can name some types of food that are grown, reared or caught in the UK or the wider world.  | **To be able to prepare and cook a variety of fishes safely and hygienically, including the use of a heat source.****To be able to use a range of techniques including: peeling, chopping, slicing, grating, mixing, spreading and kneading.** **To understand the factors that impact ingredients such as seasonality and food processing.** **To be able to adapt a recipe.****To be able to present a food product well ensuring it is attractive, interesting and fit for purpose.** **To be able to describe the principles of a healthy and varied diet.** **To know where and how ingredients are grown, reared, caught and processed.**  |