**National Curriculum Subject: Design and Technology**

**Skills Progression**

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| **Purpose of Study**  Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation. | | | | | | | | |
| **Aims** | | | | | | | | |
|  | Design  Build and apply a repertoire of  knowledge,understanding and  skills in order to design and  make high-quality prototypes  and products for a wide range  of users. | Make  Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. | | | | | Food  Understand and apply the principles of nutrition and learn how to cook. | Evaluate  Critique, evaluate and test their ideas and products and the work of others. |
| Textiles | | Sheet materials | Construction | |
| **EYFS**  **30-50** | I can understand and realise that tools can be used for a purpose. |  | |  | I can use various construction materials.  I can begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.  I can join construction pieces together to build and balance. | |  |  |
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| **EYFS**  **40-60** | I can use simple tools and techniques competently and appropriately.  I can select appropriate resources and adapt work where necessary.  I can select tools and techniques needed to shape, assemble and join materials that I am using. |  |  | | | I can construct with a purpose in mind, using a variety of resources. | I can eat a healthy range of foodstuffs and understand the need for variety in food.  I know the importance of a healthy diet. |  |
| **EYFS**  **ELG** | I can safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. |  |  | | |  |  |  |
| **1** | I can think of ideas and with help, can put them into practice.  I can use pictures and words to describe what I want to do.  I know the main features of familiar products. | I can describe textiles by the way they feel.  I can make a product from textiles.  I can measure, mark out and cut fabric with adult help.  I can join fabrics using glue.  I can alter a textile to make it stronger.  I know how textiles can be used to make products. | I can fold, tear and cut paper and card.  I can roll paper to create tubes.  I can cut along lines, straight and curved with some accuracy.  I can use hole punch.  I can insert paper fasteners for card linkages with help.  I can create hinges with some help.  I can think about ways to strengthen sheet materials.  I can recognise different types of joining - temporary, fixed and moving.  I know how a hinge works. | | | I can make vehicles with construction kits which contain free running wheels.  I can use a range of materials to create models with wheels.  I can join appropriately for different materials and situations e.g. glue, tape.  I can mark out materials to be cut using a template.  I can cut strip wood/dowel using hacksaw and bench hook with adult support.  I can see glue gun used by an adult.  I know a method of joining materials. | I can develop a food vocabulary using taste ,smell, texture and feel.  I can group familiar food products e.g. fruit and vegetables.  I can cut, peel, grate, chop a range of ingredients.  I can begin to work safely and hygienically with adult support.  I can suggest some reasons for having a varied diet.  I can measure and weigh food items using non statutory measures e.g. spoons, cups.  I know the main food groups. | I can say what I like and do not like about items I have made.  I can talk about my designs as they develop and identify good and bad points.  I can talk about changes made during the making process.  I can compare my design and finished product. |
| **2** | I can think of ideas and plan what to do next, based on what I know about materials and components.  I can select the appropriate tools, techniques and materials, explaining my choices.  I can use models, pictures and words to describe my designs.  I know the features of familiar products. | I can use accurate measurements in cm.  I can measure, mark out and cut fabric.  I can join textiles using glue, staples, tying or a simple stitch.  I can make a textile product that has a good finish and can do the job it was made for.  I can select the appropriate textile so that it does the job I want it to.  I know that textiles have different properties. | I can fold, tear and cut paper and card accurately.  I can roll paper to create tubes.  I can cut along lines, straight and curved accurately.  I can curl paper.  I can use hole punch.  I can insert paper fasteners for card linkages.  I can create hinges.  I can use simple pop ups.  I can investigate strengthening sheet materials.  I can investigate joinings temporary, fixed and moving and suggest when to use them.  I know different ways to join sheet materials and begin to know their purpose. | | | I can use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels.  I can attach wheels to a chassis using an axle.  I can join appropriately for different materials and situations e.g. glue, tape.  I can accurately mark out materials to be cut using a template.  I can cut strip wood/dowel using hacksaw and bench hook.  I can see glue gun used by an adult.  I know several different methods of joining materials. | I can use my sensory vocabulary/knowledge about smell, taste, texture and feel.  I can analyse the taste, texture, smell and appearance of some foods.  I can follow simple written or illustrated instructions (eg a recipe) of a few steps.  I can suggest some healthy eating choices.  I can suggest ways to join and combine a simple range of ingredients e.g. snack foods.  I can work safely and hygienically with adult support.  I can measure and weigh ingredients appropriately with adult support.  I know which types of food are healthy and which are not. | I can say what I like and do not like about items I have made and attempt to say why.  I can talk about my designs as they develop and identify good and bad points with reasons.  I can talk about changes made during the making process and give reasons.  I can say how closely my finished products meet my design criteria |
| **3** | I can generate ideas and recognise that my designs have to meet a range of different needs.  I can make realistic plans to achieve my aims.  I can think ahead about the order of my work, choosing appropriate tools, equipment, materials, components and techniques.  I can clarify my ideas using labelled sketches and models to communicate the details of my designs.  I know the features and their purpose of familiar products. | I can select the appropriate textile(s) for my product.  I can use sharp scissors accurately to cut textiles.  I can show that I understand how the texture and other properties of materials affect my choice.  I can improve my designs as I go along.  I can combine materials to add strength or visual appeal.  I know that textiles have different properties: touch, insulation, texture and waterproof. | I can use lolly sticks/card to make linkages.  I can cut slots.  I can use pop ups.  I can use linkages to make movement.  I know which joining method to choose for the purpose when working with sheet materials. | | | I can incorporate a circuit with a bulb or buzzer into a model.  I can create shell or frame structures, strengthen frames  with diagonal struts.  I can make structures more stable by giving them a wide base.  I know that diagonal struts and triangular structures are stronger than squared or rectangular. | I can extend my sensory vocabulary/knowledge using: smell, taste, texture and feel.  I can recognise differences in the taste, texture, smell and appearance of a range of foods.  I can follow instructions of several steps.  I can show an understanding of a balanced diet and make some healthy eating choices.  I can work safely and hygienically.  I can measure and weigh ingredients appropriately.  I know which foods are needed in a healthy diet. | I can identify the strengths and weaknesses of my design ideas.  I can decide which design idea to develop.  I can consider strengths and weaknesses as the product develops.  I can consider and explain with help how the finished product could be improved.  I can discuss how well the finished product meets the design criteria and how well it meets the needs of the user. |
| **4** | I can generate ideas by collecting and using information.  I can take the views of users’ into account when designing my products.  I can produce step-by-step plans.  I can communicate alternative ideas using words, labelled sketches and models showing that I am aware of the constraints of my design.  I know the features and their purpose of a wider range of products. | I can show that my textile work incorporates the views of intended users’ and for the purpose.  I can use my art textiles skills such as stitching to help create a product that is sturdy and fit for purpose.  I know how to thread a needle and sew a seam.  I know at least one type of stitch. | I can cut slots and internal shapes.  I can use lolly sticks/card to make levers and linkages.  I can use linkages to make movement larger or more varied.  I can use and explore complex pop ups.  I can create nets.  I know different ways to manipulate sheet materials. | | | I can incorporate a circuit with a bulb and buzzer into a model.  I can measure and mark strip wood, dowel, square section wood accurately to 1cm.  I can build prototype frame and shell structures.  I can use a glue gun with close supervision (one to one).  I know that an electrical circuit needs a battery, and must be joined to both sides of the battery. | I can extend my sensory vocabulary/knowledge using: smell, taste, texture and feel.  I can analyse the taste, texture, smell and appearance of a range of foods.  I can follow instructions of several steps.  I can make healthy eating choices from an understanding of a balanced diet.  I can join and combine a range of ingredients e.g. snack foods.  I can work safely and hygienically and give reasons.  I can measure and weigh ingredients appropriately and accurately.  I know which foods are needed and how they should be balanced in a healthy diet. | I can identify the strengths and weaknesses of my design ideas, comparing my ideas to others’.  I can decide which design idea to develop and say why.  I can consider strengths and weaknesses as the product develops and make adaptations.  I can consider and explain how the finished product could be improved.  I can discuss how well the finished product meets the design criteria and how well it meets  the needs of the user compared to other products. |
| **5** | I can reflect on my designs and develop them bearing in mind the way they will be used.  I can identify some things that are working well and what can be improved.  I know the features and their purpose of more complex products. | I can combine art skills to add colour and texture to my work.  I can mark out using a pattern and template.  I can show that my textile products include structural changes.  I know that products are made from different parts and these parts are cut from patterns or templates.  I know a range of stitching techniques. | I can cut safely to a marked line.  I can join and combine materials with temporary joining.  I can use craft knife, cutting mat and safety ruler under one to one supervision if  appropriate.  I can choose an appropriate sheet material for the purpose.  I know that different sheet materials have different properties and can be manipulated and joined in different ways. | | | I can use bradawl to mark hole positions with adult supervision.  I can use a hand drill to drill holes.  I can cut strip wood, dowel, square section wood to 1mm with some accuracy.  I can join materials using appropriate methods.  I can incorporate a motor into a model.  I can control a model using an ICT control programme.  I can use a cam to make an up and down mechanism.  I can build frameworks using a simple material e.g, card to support mechanisms.  I can use glue gun with close supervision.  I know that models can be controlled by appropriate ICT programmes. | I can prepare food products taking into account the properties of ingredients.  I can select and prepare foods for a particular purpose.  I can taste a range of ingredients, food items to develop a sensory food vocabulary for  use when designing.  I can weigh and measure using scales.  I can cut and shape ingredients using appropriate tools and equipment e.g. grating.  I can join and combine food ingredients appropriately e.g. beating, rubbing in.  I can decorate my product.  I can work safely and hygienically.  I can show awareness of a healthy diet from an understanding of a balanced diet.  I know that ingredients need to be weighed accurately when following recipes. | I can develop design criteria and use these to inform my decisions  about ways to proceed.  I can make decisions about materials and methods of construction.  I can reflect on my work using design criteria stating how well the components of the product work and fit the  needs of the user.  I can make suggestions as to how my design could be improved. |
| **6** | I can reflect on my designs and develop them bearing in mind the way they will be used and who will be using them.  I can identify what is working well and what can be improved.  I know the features of more complex products and the justification behind those features. | I can combine art skills to add colour and texture to my work.  I can mark out using my own patterns and templates.  I can show that my textile products include structural changes, such as plaiting or weaving to create new products such as rope, belts, bracelets etc.  I can show an awareness of commercial appeal when making my product.  I can experiment with a range of materials until I find the right mix of affordability, appeal and appropriateness for the job.  I know that it is important for a product to have commercial appeal.  I know a range of stitching techniques and which are appropriate for purpose. | I can cut accurately and safely to a marked line.  I can join and combine materials with temporary, fixed or moving joining.  I can use craft knife, cutting mat and safety ruler under one to one supervision if  appropriate.  I can choose an appropriate sheet material for the purpose and give reasons.  I know which sheet materials and methods to use and why they will be fit for purpose. | | | I can use bradawl to mark hole positions.  I can use a hand drill to drill tight and loose fit holes.  I can cut strip wood, dowel, square section wood accurately to 1mm.  I can join materials using appropriate methods and suggest ways to use them.  I can incorporate a motor and a switch into a model.  I can control a model using different ICT control programmes.  I can use a cam to make an up and down mechanism and suggest where it could be used.  I can build frameworks using a range of materials e.g. wood, card corrugated plastic to support mechanisms.  I can use glue gun with close supervision.  I know where a cam should be used to make an up and down mechanism. | I can prepare food products taking into account the properties of ingredients and  sensory characteristics.  I can select and prepare foods for a particular purpose and explain my choices.  I can taste a range of ingredients, food items to develop a sensory food vocabulary for  use when designing.  I can weigh and measure using scales.  I can cut and shape ingredients using appropriate tools and equipment e.g. grating.  I can join and combine food ingredients appropriately e.g. beating, rubbing in.  I can decorate my product appropriately bearing in mind who it is intended for.  I can show an awareness of hygiene and safety aspects in my planning and use this to work safely and hygienically.  I can healthy meals from my understanding of a balanced diet.  I know that hygiene and safety is essential when preparing food. | I can develop design criteria and use these to inform my decisions throughout the making process.  I can justify my decisions about materials and methods of construction.  I can reflect on my work using design criteria stating how well the components of the product work and fit the  needs of the user over time.  I can make suggestions as to how mydesign could be improved giving reasons which refer to the criteria. |