



## Design and Technology Progression of Skills

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into national curriculum subjects. The table below demonstrates which statements from the 2020 Development Matters are prerequisite skills for DT within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for DT.

The most relevant statements for DT are taken from the following areas of learning:

- Physical Development
- Expressive Arts and Design

### EYFS – Design and Technology

Three and Four-Year-Olds	Personal, Social and Emotional Development	Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
	Understanding the World	Explore how things work.
	Physical Development	Use large-muscle movements to wave flags and streamers, paint and make marks.  Choose the right resources to carry out their own plan.  Use one-handed tools and equipment, for example, making snips in paper with scissors.
	Expressive Arts and Design	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.  Explore different materials freely, in order to develop their ideas about how to use them and what to make.  Develop their own ideas and then decide which materials to use to express them.  Create closed shapes with continuous lines and begin to use these shapes to represent objects.

Reception	Physical Development	<p>Progress towards a more fluent style of moving, with developing control and grace.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor</p>
	Expressive Arts and Design	<p>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>Create collaboratively, sharing ideas, resources and skills.</p>

ELG	Physical Development	Fine Motor Skills	Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Creating with Materials	<p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used.</p>

## Years 1 - 6

<p>National Curriculum aims:</p> <ul style="list-style-type: none"> <li>• develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world</li> <li>• 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</li> <li>• critique, evaluate and test their ideas and products and the work of others</li> <li>• understand and apply the principles of nutrition and learn how to cook.</li> </ul>
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This document shows the progression of skills, broken down into three key skills. The Design and Technology National Curriculum outlines the three main stages of the design process: design, make and evaluate. Each unit follows these stages, to form a full project. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical and technical understanding, required for each strand. The progression of this technical knowledge can be found in the accompanying progression of knowledge document.

Cooking and Nutrition has a separate section in the D&T National Curriculum, with additional focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality. Food units still follow the design process summarised above, for example by tasking the pupils to develop recipes for a specific set of requirements (design criteria) and to suggest methods of packaging the food product including the nutritional information.

Design	Make	Evaluate
<ul style="list-style-type: none"> <li>★ Research</li> <li>★ Design criteria (e.g., tailoring to an audience/user).</li> <li>★ Idea generation (e.g., annotated sketches).</li> <li>★ Idea development (e.g., templates, pattern pieces).</li> <li>★ Models and prototypes (both virtual and physical).</li> <li>★ Cross-sectional and exploded diagrams.</li> <li>★ Innovative, fit-for-purpose and functional product solutions to design problems.</li> </ul>	<ul style="list-style-type: none"> <li>★ Select and use appropriate tools and equipment.</li> <li>★ Understand and select materials and components (including ingredients) based on their aesthetic and functional properties.</li> <li>★ Carry out practical tasks with increasing accuracy and precision.</li> <li>★ Understand the importance of having and following the health and safety rules.</li> </ul>	<ul style="list-style-type: none"> <li>★ Explore existing products.</li> <li>★ Evaluate against a list of design criteria.</li> <li>★ Evaluate, investigate and analyse existing products.</li> <li>★ Evaluate their own and others' ideas.</li> <li>★ Understand how key events and individuals have helped to shape the world of D&amp;T.</li> <li>★ Consider feedback to make improvements.</li> </ul>

### Key Stage 1 – Design and Technology

National Curriculum subject content KS1:

- Design
- design purposeful, functional, appealing products for themselves and other users based on design criteria
  - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- Make
- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
  - select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- Evaluate
- explore and evaluate a range of existing products
  - evaluate their ideas and products against design criteria
- Technical knowledge
- build structures, exploring how they can be made stronger, stiffer and more stable
  - explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
- Cooking and Nutrition
- use the basic principles of a healthy and varied diet to prepare dishes
  - understand where food comes from.

Year A

Year B

	(Red, Orange and Yellow class - Year 1 and Year 2)	(Red, Orange and Yellow class - Year 1 and Year 2)
<b>Structures</b>		
<b>Design</b>	Learning the importance of a clear design criteria. Including individual preferences and requirements in a design.	Generating and communicating ideas using sketching and modelling. Learning about different types of structures, found in the natural world and in everyday objects.
<b>Make</b>	Making stable structures from card, tape and glue Learning how to turn 2D nets into 3D structures. Following instructions to cut and assemble the supporting structure of a windmill. Making functioning turbines and axles which are assembled into a main supporting structure.	Making a structure according to design criteria. Creating joints and structures from paper/card and tape. Building a strong and stiff structure by folding paper.
<b>Evaluate</b>	Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. Suggest points for improvements.	Exploring the features of structures. Comparing the stability of different shapes. Testing the strength of own structures. Identifying the weakest part of a structure. Evaluating the strength, stiffness and stability of own structure.
<b>Mechanisms/Mechanical systems</b>		
<b>Design</b>	Explaining how to adapt mechanisms, using bridges or guides to control the movement. Designing a moving story book for a given audience. Designing a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move. Creating clearly labelled drawings which illustrate movement	Creating a whole class design criteria for a moving monster. Designing a moving monster for a specific audience in accordance with a design criteria. Selecting a suitable linkage system to produce the desired motions. Designing a wheel. Selecting appropriate materials based on their properties.
<b>Make</b>	Following a design to create moving models that use levers and sliders. Adapting mechanisms.	Making linkages using card for levers and split pins for pivots. Experimenting with linkages adjusting the widths, lengths and thicknesses of card used. Cutting and assembling components neatly. Selecting materials according to their characteristics. Following a design brief,
<b>Evaluate</b>	Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. Reviewing the success of a product by testing it with its intended audience	Evaluating own designs against design criteria. Using peer feedback to modify a final design. Evaluating different designs. Testing and adapting a design.

	Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle in order to move.	
Cooking and Nutrition		
Design	Designing smoothie carton packaging by-hand or on ICT software.	Designing a healthy wrap based on a food combination which work well together.
Make	Chopping fruit and vegetables safely to make a smoothie. Identifying if a food is a fruit or a vegetable. Learning where and how fruits and vegetables grow.	Slicing food safely using the bridge or claw grip. Constructing a wrap that meets a design brief.
Evaluate	Tasting and evaluating different food combinations. Describing appearance, smell and taste. Suggesting information to be included on packaging	Describing the taste, texture and smell of fruit and vegetables. Taste testing food combinations and final products. Describing the information that should be included on a label. Evaluating which grip was most effective.
Textiles		
Design	Using a template to create a design for a puppet.	Designing a pouch
Make	Cutting fabric neatly with scissors. Using joining methods to decorate a puppet. Sequencing steps for construction.	Selecting and cutting fabrics for sewing. Decorating a pouch using fabric glue or running stitch. Threading a needle. Sewing running stitch, with evenly spaced, neat, even stitches to join fabric. Neatly pinning and cutting fabric using a template.
Evaluate	Reflecting on a finished product, explaining likes and dislikes.	Troubleshooting scenarios posed by teacher. Evaluating the quality of the stitching on others' work. Discussing as a class, the success of their stitching against the success criteria. Identifying aspects of their peers' work that they particularly like and why.

<p><b>Key Stage 2 – Design and Technology</b></p> <p>National Curriculum subject content KS2: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</p>
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- Design**
- use 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
- Make**
- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
  - select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
- Evaluate**
- investigate 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
- Technical knowledge**
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
  - understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
  - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
  - apply their understanding of computing to program, monitor and control their products.
- Cooking and Nutrition**
- 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.

**Lower Key Stage 2 – Year 3 and 4**

	<b>Year A</b> (Green, Blue and Indigo Class – Year 3 and Year 4)	<b>Year B</b> (Green, Blue and Indigo Class – Year 3 and Year 4)
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**Structures**

<b>Design</b>	<p>Designing a castle with key features to appeal to a specific person/purpose.          Drawing and labelling a castle design using 2D shapes, labelling:</p> <ul style="list-style-type: none"> <li>• the 3D shapes that will create the features</li> <li>• materials needed and colours</li> </ul> <p>Designing and/or decorating a castle tower on CAD software.</p>	<p>Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect.          Building frame structures designed to support weight.</p>
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<b>Make</b>	<p>Constructing a range of 3D geometric shapes using nets.          Creating special features for individual designs.          Making facades from a range of recycled materials.</p>	<p>Creating a range of different shaped frame structures.          Making a variety of free-standing frame structures of different shapes and sizes.</p>
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		<p>Selecting appropriate materials to build a strong structure and for the cladding.</p> <p>Reinforcing corners to strengthen a structure.</p> <p>Creating a design in accordance with a plan.</p> <p>Learning to create different textural effects with materials.</p>
Evaluate	<p>Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.</p> <p>Suggesting points for modification of the individual designs.</p>	<p>Evaluating structures made by the class.</p> <p>Describing what characteristics of a design and construction made it the most effective.</p> <p>Considering effective and ineffective designs.</p>
<b>Mechanisms/Mechanical Systems</b>		
Design	<p>Designing a toy which uses a pneumatic system.</p> <p>Developing design criteria from a design brief.</p> <p>Generating ideas using thumbnail sketches and exploded diagrams.</p> <p>Learning that different types of drawings are used in design to explain ideas clearly.</p>	<p>Designing a shape that reduces air resistance.</p> <p>Drawing a net to create a structure from.</p> <p>Choosing shapes that increase or decrease speed as a result of air resistance.</p> <p>Personalising a design.</p>
Make	<p>Creating a pneumatic system to create a desired motion.</p> <p>Building secure housing for a pneumatic system.</p> <p>Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy.</p> <p>Selecting materials due to their functional and aesthetic characteristics.</p> <p>Manipulating materials to create different effects by cutting, creasing, folding, weaving</p>	<p>Measuring, marking, cutting and assembling with increasing accuracy.</p> <p>Making a model based on a chosen design.</p>
Evaluate	<p>Using the views of others to improve designs.</p> <p>Testing and modifying the outcome, suggesting improvements.</p> <p>Understanding the purpose of exploded diagrams through the eyes of a designer and their client.</p>	<p>Evaluating the speed of a final product based on</p> <ul style="list-style-type: none"> <li>• the effect of shape on speed</li> <li>• the accuracy of workmanship on performance</li> </ul>
<b>Cooking and Nutrition</b>		
Design	<p>Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish</p>	<p>Designing a biscuit within a given budget, drawing upon previous taste testing.</p>
Make	<p>Knowing how to prepare themselves and a workspace to cook safely in, learning the basic rules to avoid food contamination.</p> <p>Following the instructions within a recipe</p>	<p>Following a baking recipe.</p> <p>Cooking safely, following basic hygiene rules.</p> <p>Adapting a recipe</p>

Evaluate	Establishing and using design criteria to help test and review dishes. Describing the benefits of seasonal fruits and vegetables and the impact on the environment. Suggesting points for improvement when making a seasonal tart.	Evaluating a recipe, considering taste, smell, texture and appearance. Describing the impact of the budget on the selection of ingredients. Evaluating and comparing a range of products. Suggesting modifications
Textiles		
Design	Designing and making a template from an existing cushion and applying individual design criteria.	Writing design criteria for a product, articulating decisions made. Designing a personalised book sleeve.
Make	Following design criteria to create a cushion. Selecting and cutting fabrics with ease using fabric scissors. Threading needles with greater independence. Tying knots with greater independence. Sewing cross stitch to join fabric. Decorating fabric using appliqué. Completing design ideas with stuffing and sewing the edges	Making and testing a paper template with accuracy and in keeping with the design criteria. Measuring, marking and cutting fabric using a paper template. Selecting a stitch style to join fabric, working neatly sewing small, neat stitches. Incorporating fastening to a design.
Evaluate	Evaluating an end product and thinking of other ways in which to create similar items.	Testing and evaluating an end product against the original design criteria. Deciding how many of the criteria should be met for the product to be considered successful. Suggesting modifications for improvement. Articulating the advantages and disadvantages of different fastening types.

Upper Key Stage 2 – Year 5 and 6		
	Year A (Violet, Turquoise and Maroon Class- Year 5 and 6)	Year B (Violet, Turquoise and Maroon Class- Year 5 and 6)
Structures		
Design	Designing a stable structure that can support weight. Creating frame structure with focus on triangulation	Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs
Make	Making a range of different shaped beam bridges.	Using a systematic and independent approach, research, test and develop ideas and plans using sketchbooks.

	<p>Using triangles to create truss bridges that span a given distance and supports a load.</p> <p>Building a wooden bridge structure.</p> <p>Independently measuring and marking wood accurately.</p> <p>Selecting appropriate tools and equipment for particular tasks.</p> <p>Using the correct techniques to saws safely.</p> <p>Identifying where a structure needs reinforcement and using card corners for support.</p> <p>Explaining why selecting appropriating materials is an important part of the design process.</p> <p>Understanding basic wood functional properties.</p>	
Evaluate	<p>Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary.</p> <p>Suggesting points for improvements for own bridges and those designed by others.</p>	<p>Improving a design plan based on peer evaluation.</p> <p>Testing and adapting a design to improve it as it is developed.</p> <p>Identifying what makes a successful structure.</p>
<b>Mechanisms/Mechanical Systems</b>		
Design	<p>Designing a pop-up book which uses a mixture of structures and mechanisms.</p> <p>Naming each mechanism, input and output accurately.</p> <p>Storyboarding ideas for a book.</p>	<p>Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement.</p> <p>Understanding how linkages change the direction of a force.</p> <p>Making things move at the same time.</p> <p>Understanding and drawing cross-sectional diagrams to show the inner working.</p>
Make	<p>Following a design brief to make a pop-up book, neatly and with focus on accuracy.</p> <p>Making mechanisms and/or structures using sliders, pivots and folds to produce movement.</p> <p>Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.</p>	<p>Measuring, marking and checking the accuracy of the jelutong and dowel pieces required.</p> <p>Measuring, marking and cutting components accurately using a ruler and scissors.</p> <p>Assembling components accurately to make a stable frame.</p> <p>Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles.</p> <p>Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set.</p>
Evaluate	<p>Evaluating the work of others and receiving feedback on own work.</p>	<p>Evaluating the work of others and receiving feedback on own work.</p>

	Suggesting points for improvement.	Applying points of improvements. Describing the changes they would make/do if they were to do the project again.
Cooking and Nutrition		
Design	Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. Writing an amended method for a recipe to incorporate the relevant changes to ingredients. Designing appealing packaging to reflect a recipe.	Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken.
Make	Cutting and preparing vegetables safely. Using equipment safely, including knives, hot pans and hobs. Knowing how to avoid cross-contamination. Following a step-by-step method carefully to make a recipe.	Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence.
Evaluate	Identifying the nutritional differences between different products and recipes. Identifying and describing healthy benefits of food groups.	Evaluating a recipe, considering taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions. Evaluating health and safety in production to minimise cross contamination.
Textiles		
Design	Designing a stuffed toy considering the main component shapes required and creating an appropriate template. Considering the proportions of individual components.	Designing a waistcoat in accordance to specification linked to set of design criteria to fit a specific theme. Annotating designs.
Make	Creating a 3D stuffed toy from a 2D design. Measuring, marking and cutting fabric accurately and independently. Creating strong and secure blanket stitches when joining fabric. Threading needles independently. Using applique to attach pieces of fabric decoration. Sewing blanket stitch to join fabric. Applying blanket stitch so the space between the stitches are even and regular.	Using a template when pinning panels onto fabric. Marking and cutting fabric accurately, in accordance with a design. Sewing a strong running stitch, making small, neat stitches and following the edge. Tying strong knots. Decorating a waistcoat -attaching objects using thread and adding a secure fastening. Learning different decorative stitches. Sewing accurately with even regularity of stitches.
Evaluate	Testing and evaluating an end product and giving point for further improvements.	Evaluating work continually as it is created.

