



Key Knowledge, Skills and Understanding for Design Technology

EYFS

Key Knowledge and Skills

This document 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

Key Skills and Understanding

Three and Four-Year-Olds	Personal, Social and Emotional Development	<ul style="list-style-type: none"> • 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.
	Physical Development	<ul style="list-style-type: none"> • 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.
	Understanding the World	<ul style="list-style-type: none"> • Explore how things work.
	Expressive Arts and Design	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Progress towards a more fluent style of moving, with developing control and grace. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently.



			<ul style="list-style-type: none"> • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
	Expressive Arts and Design		<ul style="list-style-type: none"> • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively, sharing ideas, resources and skills.
ELG	Physical Development	Fine Motor Skills	<ul style="list-style-type: none"> • Use a range of small tools, including scissors, paintbrushes and cutlery.
	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> • 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.



Key Knowledge, Skills and Understanding for Design Technology

Year 1

Key Knowledge

Designing

- Do they know that the use of split pins will allow their 'toy' to move?

Making

- Do they know that their choice of resources and tools will be different dependant on what they are making?

Evaluating

- Do they know that they should use their design criteria to evaluate against?

Technical Knowledge

- Do they know that they can make their clay plate stronger by using more clay to increase the thickness of their clay plate?

Food Technology

- Do they know that they can use a children's knife to safely cut food?

Key Skills and Understanding

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
Expected	<ul style="list-style-type: none"> • Can they think of some ideas of their own? • Can they explain what they want to do? • Can they use pictures and words to plan? • Can they explain what they are making? • Can they make simple plans before making objects, e.g. Drawings, arranging pieces of construction before building? 	<ul style="list-style-type: none"> • Which tools are they using? • Can they make a structure/ model using different materials? • Is their work tidy? • Can they make a product which moves? • Can they cut materials using scissors? • Can they describe the materials using different words? 	<ul style="list-style-type: none"> • Can they describe how something works? • Can they talk about their own work and things that other people have done? • Can they make their model stronger if it needs to be? • Can they say why they have chosen moving parts? • Can they talk with others about how they want to construct their product? • Can they select appropriate resources and tools for their building projects?



Breadth of Study				
Cooking & Nutrition	Textiles	Mechanisms	Use of materials	Construction
<ul style="list-style-type: none"> • Can they cut food safely? • Can they describe the texture of foods? • Do they wash their hands and make sure that surfaces are clean? • Can they think of interesting ways of decorating food they have made, eg, cakes? 	<ul style="list-style-type: none"> • Can they describe how different textiles feel? • Can they make a product from textiles by gluing? 	<ul style="list-style-type: none"> • Can they make a product which moves? • Can they cut materials using scissors? • Can they describe the materials using different words? • Can they say why they have chosen moving parts? 	<ul style="list-style-type: none"> • Can they make a structure/model using different materials? • Is their work tidy? • Can they make their model stronger? 	<ul style="list-style-type: none"> • Can they talk with others about how they want to construct their product? • Can they select appropriate resources and tools for their building projects? • Can they make simple plans before making objects, e.g. drawings, arranging pieces of construction before building?
Exceeding	<ul style="list-style-type: none"> • Can they explain what went well with their work? • If they did it again, can they explain what they would improve? • Can they join things (materials/ components) together in different ways? • Can they describe their design by using pictures, diagrams, models and words? 			



Key Knowledge, Skills and Understanding for Design Technology

Year 2

Key Knowledge

Designing

- Do they know that they have to think of an idea before designing a product?

Making

- Do they know that they can join materials in different ways?

Evaluating

- Do they know that they can dislike and like elements of an overall design and product?

Technical Knowledge

- Do they know that they can use wheels and axels to make a product move?

Food Technology

- Do they know that they can weigh ingredients using a measuring scale?

Key Skills and Understanding

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
Expected	<ul style="list-style-type: none"> • Can they think of ideas and plan what to do next? • Can they choose the best tools and materials? Can they give a reason why these are best? • Can they describe their design by using pictures, diagrams, models and words? 	<ul style="list-style-type: none"> • Can they join things (materials/ components) together in different ways? 	<ul style="list-style-type: none"> • Can they explain what went well with their work? • If they did it again, can they explain what they would improve?

Breadth of Study

Cooking & Nutrition	Textiles	Mechanisms	Use of materials	Construction
<ul style="list-style-type: none"> • Can they describe the properties of the ingredients they are using? • Can they explain what it means to be hygienic? • Are they hygienic in the kitchen? 	<ul style="list-style-type: none"> • Can they measure textile? • Can they join textiles together to make something? • Can they cut textiles? • Can they explain why they chose a certain textile? 	<ul style="list-style-type: none"> • Can they join materials together as part of a moving product? • Can they add some kind of design to their product? 	<ul style="list-style-type: none"> • Can they measure materials to use in a model or structure? • Can they join material in different ways? • Can they use joining, folding or rolling to make it stronger? 	<ul style="list-style-type: none"> • Can they make sensible choices as to which material to use for their constructions? • Can they develop their own ideas from initial starting points? • Can they incorporate some type of movement into models? • Can they consider how to improve their construction?



Exceeding

- Can they use equipment and tools accurately?
- Can they explain what they changed which made their design even better?
- Can they describe their design using an accurately labelled sketch and words?
- How realistic is their plan?





Key Knowledge, Skills and Understanding for Design Technology

Year 3

Key Knowledge

Designing

- Do they know that they need a step-by-step plan which shows the order and also what equipment and tools they need?
- Do they know that felt would be a good material for a Christmas stocking because it is bright and colourful and will hold small items when joined together?

Making

- Do they know that they need to stick carefully to their plan when making an item?
- Do they know that they can join materials in different ways such as sewing and gluing?

Evaluating

- Do they know that it is OK to change their plan or design if they can explain why?
- Do they know that sometimes things can go wrong but that is OK if they can work out why and how to make it better?

Technical Knowledge

- Do they know that instructions must be given to a robot/model in the right order so that it will work?
- Do they know that different tools can be used for different jobs? E.g. scissors for cutting, needle and cotton to join fabric, glue to add decorations.

Food Technology

- Do they know that foods are ready to be harvested at different times?
- Do they know that some foods are better for us than others and are part of a healthy diet?

Key Skills and Understanding

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
Expected	<ul style="list-style-type: none"> • Can they show that their design meets a range of requirements? • Can they put together a step-by-step plan which shows the order and also what equipment and tools they need? • Can they describe their design using an accurately labelled sketch and words? • How realistic is their plan? 	<ul style="list-style-type: none"> • Can they use equipment and tools accurately? 	<ul style="list-style-type: none"> • Can they explain what they changed which made their design even better?



Breadth of Study				
Cooking & Nutrition	Textiles	Mechanisms	Use of materials	Construction
<ul style="list-style-type: none"> • Can they choose the right ingredients for a product? • Can they use equipment safely? • Can they make sure that their product looks attractive? • Can they describe how their combined ingredients come together? • Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product? 	<ul style="list-style-type: none"> • Can they join textiles of different types in different ways? • Can they choose textiles both for their appearance and also qualities? 	<ul style="list-style-type: none"> • Do they select the most appropriate tools and techniques to use for a given task? • Can they make a product which uses both electrical and mechanical components? • Can they use a simple circuit? • Can they use a number of components? 	<ul style="list-style-type: none"> • Do they use the most appropriate materials? • Can they work accurately to make cuts and holes? • Can they join materials? 	<ul style="list-style-type: none"> • Do they select the most appropriate materials? • Can they use a range of techniques to shape and mould? • Do they use finishing techniques?
Exceeding	<ul style="list-style-type: none"> • Can they evaluate their product, thinking of both appearance and the way it works? • Do they take time to consider how they could have made their idea better? • Do they work at their product even though their original idea might not have worked? • Can they suggest some improvements and say what was good and not so good about their original design? 			



Key Knowledge, Skills and Understanding for Design Technology

Year 4

Key Knowledge

Designing

- Do they know that they can use the ideas from other people when designing?
- Do they know that they can communicate their ideas by sketching, drawing and annotating?

Making

- Do they know that different tools do different tasks and they should choose their tools carefully?
- Do they know that ingredients change state when heated or cooled?

Evaluating

- Do they know that they can make changes at any stage?
- Do they know that they should present their product in an interesting way?

Food Technology

- Do they know that they need to wash their hands before handling food to be hygienic?
- Do they know that they need to handle knives carefully to be safe?

Technical

- Do they know that they need a battery, wires and a bulb to make a basic circuit?
- Do they know that a battery is a source of power?

Key Skills and Understanding

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
Expected	<ul style="list-style-type: none"> • Can they come up with at least one idea about how to create their product? • Do they take account of the ideas of others when designing? • Can they produce a plan and explain it to others? • Can they suggest some improvements and say what was good and not so good about their original design? 	<ul style="list-style-type: none"> • Can they tell if their finished product is going to be good quality? • Are they conscience of the need to produce something that will be liked by others? • Can they show a good level of expertise when using a range of tools and equipment? • Do they work at their product even though their original idea might not have worked? 	<ul style="list-style-type: none"> • Have they thought of how they will check if their design is successful? • Can they begin to explain how they can improve their original design? • Can they evaluate their product, thinking of both appearance and the way it works? • Do they take time to consider how they could have made their idea better?



Breadth of Study				
Cooking & Nutrition	Textiles	Mechanisms	Use of materials	Construction
<ul style="list-style-type: none"> Do they know what to do to be hygienic and safe? Have they thought what they can do to present their product in an interesting way? 	<ul style="list-style-type: none"> Do they think what the user would want when choosing textiles? Have they thought about how to make their product strong? Can they devise a template? Can they explain how to join things in a different way? 	<ul style="list-style-type: none"> Can they add things to their circuits? How have they altered their product after checking it? Are they confident about trying out new and different ideas? 	<ul style="list-style-type: none"> Can they measure carefully so as to make sure they have not made mistakes? How have they attempted to make their product strong? 	<ul style="list-style-type: none"> Can they use a range of advanced techniques to shape and mould? Do they use finishing techniques, showing an awareness of audience?
Exceeding	<ul style="list-style-type: none"> Can they evaluate appearance and function against the original criteria? Can they explain how their product will appeal to the audience? Do they take a user's view into account when designing? 			



Key Knowledge, Skills and Understanding for Design Technology

Year 5

Key Knowledge

Designing

- Do they know that they can use the internet, books and existing designs to research ideas?
- Do they know that they must have a specific audience in mind when designing their product so it is purposeful and appealing?
- Do they know that to plan how they are going to make their product they must create step by step instructions?

Making

- Do they know that a needle and thread can be used to create different stitches such as a running stitch and backstitch?
- Do they know that a 3D model, known as a prototype, is created to see if their design will work?
- Do they know that wheels and gears are used to make their product move?

Evaluating

- Do they know that a success criteria (used to evaluate their product) is a list of features their product should include?
- Do they know that they can make changes to their original design, creating an alternative?
- Do they know that 'evaluating' is considering the positives as well as areas of improvement?

Technical Knowledge

- Do they know that if a switch is closed in a circuit the current can flow, lighting up the bulb?
- Do they know that gears are toothed wheels that lock together and turn one another?
- Do they know that when a small wheel and big wheel turn, the small one turns quickly with less force and the bigger one turns slowly with more force?

Food Technology

- Do they know that to be hygienic they must wash their hands thoroughly, prepare food on clean surfaces and tie their hair back?
- Do they know that to be safe an adult must assist with hot water, sharp cutlery and use of the oven and microwave?
- Do they know that fruit and vegetables are ready for harvesting during certain seasons, such as cherries and raspberries in summer and carrots and cabbage in winter?

Key Skills and Understanding

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
Expected	<ul style="list-style-type: none"> • Can they come up with a range of ideas after they have collected information? • Do they take a user's view into account when designing? • Can they produce a detailed step-by-step plan? • Can they suggest some alternative plans and say what the good points and drawbacks are about each? 	<ul style="list-style-type: none"> • Can they explain why their finished product is going to be of good quality? • Can they explain how their product will appeal to the audience? • Can they use a range of tools and equipment expertly? • Do they persevere through different stages of the making process? 	<ul style="list-style-type: none"> • Do they keep checking that their design is the best it can be? • Do they check whether anything could be improved? • Can they evaluate appearance and function against the original criteria?



Breadth of Study				
Cooking & Nutrition	Textiles	Mechanisms	Use of materials	Construction
<ul style="list-style-type: none"> Can they describe what they do to be both hygienic and safe? How have they presented their product well? 	<ul style="list-style-type: none"> Do they think what the user would want when choosing textiles? How have they made their product attractive and strong? Can they make up a prototype first? Can they use a range of joining techniques? 	<ul style="list-style-type: none"> Can they incorporate a switch into their product? Can they refine their product after testing it? Can they incorporate hydraulics and pneumatics? 	<ul style="list-style-type: none"> Are their measurements accurate enough to ensure that everything is precise? How have they ensured that their product is strong and fit for purpose? 	<ul style="list-style-type: none"> Are they motivated enough to refine and further improve their product using mouldable materials?
Exceeding	<ul style="list-style-type: none"> Does their product meet all design criteria? Did they consider the use of the product when selecting materials? Can they justify their plan to someone else? Do they consider culture and society in their designs? 			



Key Knowledge, Skills and Understanding for Design Technology

Year 6

Key Knowledge

Design

- Do they know that completing surveys can inform their product design?
- Do they know that there may be different audiences required to complete market research in different products?

Making

- Do they know that there are safety requirements to follow when using a wood saw?
- Do they know that a woodwork vice is the best tool to use when cutting wood as it restricts its movement?

Evaluating

- Do they know that salad products should be stored in a refrigerator to extend its freshness?
- Do they know that evaluating a product is a key element of product design (e.g. was the right thread used to sew a design onto a card)?

Technical knowledge

- Do they know that using an electrical circuit can enhance a product (e.g. having a light in an alarm system)?
- Do they know that IT could further enhance an alarm system (e.g. having a camera)?

Food Technology

- Do they know that fresh food should be stored in a refrigerator?
- Do they know that different salad ingredients cost different amounts of money (and come in different quantities)?

Key Skills and Understanding

	Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
Expected	<ul style="list-style-type: none"> • Can they use a range of information to inform their design? • Can they use market research to inform plans? • Can they work within constraints? • Can they follow and refine their plan if necessary? • Can they justify their plan to someone else? • Do they consider culture and society in their designs? 	<ul style="list-style-type: none"> • Can they use tools and materials precisely? • Do they change the way they are working if needed? 	<ul style="list-style-type: none"> • How well do they test and evaluate their final product? • Is it fit for purpose? • What would improve it? • Would different resources have improved their product? • Would they need more or different information to make it even better? • Does their product meet all design criteria? • Did they consider the use of the product when selecting materials?



Breadth of Study				
Cooking & Nutrition	Textiles	Mechanisms	Use of materials	Construction
<ul style="list-style-type: none"> • Can they explain how their product should be stored with reasons? • Can they set out to grow their own products with a view to making a salad, taking account of time required to grow different foods? 	<ul style="list-style-type: none"> • Have they thought about how their product could be sold? • Have they given considered thought about what would improve their product even more? 	<ul style="list-style-type: none"> • Can they use different kinds of circuit in their product? • Can they think of ways in which adding a circuit would improve their product? 	<ul style="list-style-type: none"> • Can they justify why they selected specific materials? • How have they ensured that their work is precise and accurate? • Can they hide joints so as to improve the look of their product? 	<ul style="list-style-type: none"> • Can they justify why the chosen material was the best for the task? • Can they justify design in relation to the audience?