Early Years Foundation Stage

DESIGN AND TECHNOLOGY

Understanding the World

Understanding the World is a specific area and includes aspects of design and technology. The specific areas include essential skills and knowledge. They grow out of the prime areas and provide important contexts for learning.

Understanding the World comprises of:

People and communities
The world
Technology

The prime areas begin to develop quickly in response to relationships and experiences, and run through and support learning in all other areas. The prime areas continue to be fundamental throughout the EYFS.

The ways in which the child engages with other people and their environment – playing and exploring, active learning, and creating and thinking critically – underpin learning and development across all areas and support the child to remain an effective and motivated learner.

The Unique Child reaches out to relate to people and things through the Characteristics of Effective Learning, which move through all areas of learning.

- playing and exploring
- active learning
- creating and thinking critically

Curriculum 2014 – Design and Technology

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

The national curriculum for design and technology aims to ensure that all pupils:

☐ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
☐ 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
☐ critique, evaluate and test their ideas and products and the work of others
☐ understand and apply the principles of nutrition and learn how to cook.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject content

Key stage 1
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, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment. When designing and making, pupils should be taught to:

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 such as 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, such as levers, sliders, wheels and axles, in their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

☐ use the basic principles of a healthy and varied diet to prepare dishes
☐ understand where food comes from.

Design and Technology – Steps

Development matters in the Early Years Foundation Stage (EYFS)			
Prime area: Understanding the World			
	Aspect People and Communities	**Aspect The World**	**Aspect Technology**
Birth – 11 months	The beginnings of understanding of people and communities lie in early attachment and other relationships. See Personal, Social and Emotional Development and Communication and Language.	Moves eyes, then head, to follow moving objects. Reacts with abrupt change when a face or object suddenly disappears from view. Looks around a room with interest; visually scans environment for novel, interesting objects and events. Smiles with pleasure at recognisable playthings. Repeats actions that have an effect, e.g. kicking or hitting a mobile or shaking a rattle. See also Characteristics of Effective Learning – Playing and Exploring, and Physical Development	The beginnings of understanding technology lie in babies exploring and making sense of objects and how they behave. See Characteristics of Effective Learning - Playing and Exploring and Creating and Thinking Critically.
8-20 months	As above	Closely observes what animals, people and vehicles do. Watches toy being hidden and tries to find it. Looks for dropped objects. Becomes absorbed in combining objects, e.g. banging two objects or placing objects into containers. Knows things are used in different ways, e.g. a ball for rolling or throwing, a toy car for pushing.	As above

Development matters in the Early Years Foundation Stage (EYFS)

Prime area: Understanding the World			
	Aspect People and Communities	**Aspect The World**	**Aspect Technology**
16-26 months	Is curious about people and shows interest in stories about themselves and their family. Enjoys pictures and stories about themselves, their families and other people.	Explores objects by linking together different approaches: shaking, hitting, looking, feeling, tasting, mouthing, pulling, turning and poking. Remembers where objects belong. Matches parts of objects that fit together, e.g. puts lid on teapot.	Anticipates repeated sounds, sights and actions, e.g. when an adult demonstrates an action toy several times. Shows interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them.
22-36 months	Has a sense of own immediate family and relations. In pretend play, imitates everyday actions and events from own family and cultural background, e.g. making and drinking tea. Beginning to have their own friends. Learns that they have similarities and differences that connect them to, and distinguish them from, others.	Enjoys playing with small-world models such as a farm, a garage, or a train track. Notices detailed features of objects in their environment.	Seeks to acquire basic skills in turning on and operating some ICT equipment. Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car.

Development matters in the Early Years Foundation Stage (EYFS)

Prime area: Understanding the World			
	Aspect People and Communities	**Aspect The World**	**Aspect Technology**
30-50 months	Shows interest in the lives of people who are familiar to them. Remembers and talks about significant events in their own experience. Recognises and describes special times or events for family or friends. Shows interest in different occupations and ways of life. Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family.	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time. Shows care and concern for living things and the environment.	Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Knows that information can be retrieved from computers

40–60+ months	Enjoys joining in with family customs and routines. **<u>Early Learning Goal</u>** **Children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions.**	Looks closely at similarities, differences, patterns and change. **<u>Early Learning Goal</u>** **Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.**	Completes a simple program on a computer. Uses ICT hardware to interact with age-appropriate computer software. **<u>Early Learning Goal</u>** **Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.**

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Design and Technology						
	Designing		**Making**		**Evaluating**	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical skills and techniques**	**Own ideas and products**	**Existing products.** **Key events and individuals.**
Band 1 Beginning Beginning+ Within Within+ Secure Secure+	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	Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing	Evaluate their ideas and products against design criteria	Explore and evaluate a range of existing products

MINIMUM EXPECTED STANDARDS – By the end of Year 1 most pupils should be able to:			
	Designing	**Making**	**Evaluating**
	Work within a range of contexts eg, imaginery/story-based, playgrounds, home, garden, local community, industry and wider environment. Begin to draw on their own experience to help generate ideas and research conducted on criteria. Begin to understand the development of existing products: what they are for, how they work, materials used. Start to suggest ideas and explain what they are going to do. Plan by suggesting what to do next Understand how to identify a target group for what they intend to design and make based on a design criteria. Begin to develop their ideas through talk and drawings. Make templates and mock ups of their ideas in card and paper or using	Begin to make their design using appropriate techniques. Select from a range of tools, materials and components Begin to follow safety and hygiene rules Explore using tools safely *e.g. scissors ,a hole punch*. Begin to build structures, exploring how they can be made stronger, stiffer and more stable. See focused practical task (FPT) Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking Use a range of materials, components, construction kits, textiles and mechanical products. With help measure, mark out, cut and shape a range of materials. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). Talk about the strengths of their product and how to make it better Explore what products are, what they are made from, who they are for, how they are used and where they are from. Talk about what they like and dislike from a range existing products and explain why

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	Design and Technology					
	Designing		**Making**		**Evaluating**	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical skills and techniques**	**Own ideas and products**	**Existing products.** **Key events and individuals.**
Band 2 Beginning Beginning+ Within Within+ Secure Secure+	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	Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing	Evaluate their ideas and products against design criteria	Explore and evaluate a range of existing products

	MINIMUM EXPECTED STANDARDS – By the end of Year 2 most pupils should be able to:		
	Designing	**Making**	**Evaluating**
	Work within a range of contexts eg, imaginery/story-based, playgrounds, home, garden, local community, industry and wider environment. Start to generate ideas by drawing on their own and other people's experiences. Use knowledge of existing products to help come up with ideas. Begin to develop their design ideas through discussion, observation, drawing and modelling. Say what products they design and make. Say how their products will work and how they are intended for users Understand how to identify a target group for what they intend to design and make based on a simple design criteria. Develop their ideas through talk and drawings and label parts. Make templates and mock ups of their ideas using different materials, construction kits or using ICT.	Plan by suggesting what to do next. Select from a range of tools, materials and components according to their characteristics and explain their choices. Confidently follows procedures for safety and hygiene. Use a range of materials, components, construction kits, textiles, food ingredients and mechanical products. Begin to accurately measure, mark out, cut and shape a range of materials and components. Begin to accurately assemble, join and combine materials and components. Build structures, exploring how they can be made stronger, stiffer and more stable. See focused practical task (FPT) Begin to use finishing techniques, based on own ideas and those from art and design sessions.	Talk about their design ideas and what they are making. Make simple judgements about their products and ideas against design criteria. Start to talk and write about their products as they develop, identifying strengths and how they might make it better. Begin to refer to their design criteria as they design and make. Explore what products are, what they are made from, who they are for, how they are used and where they might be used. Think about whether products can be recycled. Talk about likes and dislikes of existing products and give reasons. With confidence talk about their ideas, saying what they like and dislike about them.

	National Curriculum 2014					
	Design and Technology					
	Designing		**Making**		**Evaluating**	
	Understanding contexts, users and purposes	**Generating, developing, modelling and communicating ideas**	**Planning**	**Practical skills and techniques**	**Own ideas and products**	**Existing products.** **Key events and individuals.**
Band 3 Beginning Beginning+ Within Within+ Secure Secure+	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	Select from and use a wider range of materials and components, including construction materials, textiles according to their functional properties and aesthetic qualities	Select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	Investigate and analyse a range of existing products Understand how key events and individuals in design and technology have helped shape the world

	***EXCEEDING* EXPECTED STANDARDS – By the end of Year 2 pupils should be able to:**		
	Designing	**Making**	**Evaluating**
	Work confidently and imaginatively within a range of contexts e.g fiction and non-fiction (as per Year 2 expectations). State what products they are designing and making, who they are for and their purpose. Say how their products will work and how they're suitable for intended users. Use simple design criteria to help develop their ideas. Generate ideas by drawing on their own experiences. Use knowledge of existing products to help come up with ideas. Develop and communicate ideas by talking and drawing or shared discussion. Model ideas by exploring materials, components, using prototypes, constructions kits and by making templates and mock-ups. Use ICT confidently (where appropriate) to develop and communicate their ideas.	Plan by suggesting what to do next. Select from a range of tools, materials and components according to their characteristics and explains their choices. Begin to select tools, equipment, materials and components suitable to the task. Begin to explain their choices. Begin to use a wider range of materials and components. Build structures, exploring how they can be made stronger, stiffer and more stable. Explore different materials when undertaking a focused practical task (FPT) Begin to order the main stages of making Confidently follow procedures for safety and hygiene and explains reasons for this. Use a range of materials, components, construction kits, textiles, food ingredients and mechanical products. Accurately measure, mark out, cut and shape a range of materials and components. Accurately assembles, joins and combines materials and components. Use finishing techniques from own ideas and those from art and design sessions.	Talk about their design ideas and what they are making. Make simple judgements about their products and ideas against design criteria. Identify the strengths and areas for development in their ideas and products and consider the views of others, including intended users, to improve their product. Begin to refer to their design criteria as they design and make. Explore what products are, what they are made from, who they are for, how they are used and where they might be used. Think about whether products can be recycled. Talk about likes and dislikes of existing products and give reasons. Begin to disassemble and evaluate familiar products and consider the views of others to improve them. Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products and evaluate their designs.

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Design and Technology		
	Technical Knowledge **Making products work**	**Cooking and Nutrition** **Where food comes from.** **Food preparation, cooking and nutrition.**
Band 1 Beginning Beginning+ Within Within+ Secure Secure+	Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.	Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from

	MINIMUM EXPECTED STANDARDS – By the end of Year 1 most pupils should be able to:	
	Technical Knowledge	**Cooking and Nutrition**
	Begin to make their design using appropriate techniques. Know about the simple working characteristics of materials and components such as the movement of simple mechanisms eg, levers, sliders, wheels and axles. Know how freestanding structures can be made stronger, stiffer and more stable. Recognise a range of technology is used in places such as homes and schools. Select and use technology for particular purposes. Know how to operate simple equipment and show an interest in toys with buttons, flaps and simple mechanisms and operate them successfully. Begin to use the correct technical vocabulary for projects.	Begin to understand that all food comes from plants or animals. Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught. Start to understand how to name and sort foods into the five groups in 'The Eat well plate'. Begin to understand that everyone should eat at least five portions of fruit and vegetables every day. Know how to prepare simple dishes safely and hygienically, without using a heat source. Know how to use techniques such as cutting, peeling and grating. Use a range of ingredients

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	Design and Technology	
	Technical Knowledge **Making products work**	**Cooking and Nutrition** **Where food comes from.** **Food preparation, cooking and nutrition.**
Band 2 Beginning Beginning+ Within Within+ Secure Secure+	Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.	Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from.

	MINIMUM EXPECTED STANDARDS – By the end of Year 2 most pupils should be able to:	
	Technical Knowledge	**Cooking and Nutrition**
	Begin to select tools and materials; use correct vocabulary to name and describe them. Understand the working characteristics of materials and components. Know about the movement of simple mechanisms such as levers, sliders, wheels and axles. Understand how freestanding structures can be made stronger, stiffer and more stable. Recognise that 3D textiles products can be assembled from two identical fabric shapes. Use the correct technical vocabulary for projects. Begin to recognise that food ingredients should be combined according to their sensory characteristics and have an awareness of the taste, texture and smell of ingredients.	Understand that all food comes from plants or animals. Know that food has to be farmed, grown elsewhere (e.g. home) or caught. Understand how to name and sort foods into the five groups in 'The Eat well plate'. Know that everyone should eat at least five portions of fruit and vegetables every day. Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Demonstrate how to use techniques such as cutting, peeling and grating. Use a range of ingredients

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	Design and Technology	
	Technical Knowledge **Making products work**	**Cooking and Nutrition** **Where food comes from.** **Food preparation, cooking and nutrition.**
Band 3 Beginning Beginning+ Within Within+ Secure Secure+	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors Apply their understanding of computing to programme, monitor and control their products.	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.

	***EXCEEDING* EXPECTED STANDARDS – By the end of Year 2 most pupils should be able to:**	
	Technical Knowledge	**Cooking and Nutrition**
	Begin to understand how mechanical systems such as levers and linkages or pneumatic systems create movement Begin to understand how simple electrical circuits and components can be used to create functional products Begin to understand how to program a computer to control their products Understand how freestanding structures can be made stronger, stiffer and more stable. Know about the movement of simple mechanisms such as levers, sliders, wheels and axles. Recognise that 3D textiles products can be assembled from two identical fabric shapes. Use the correct technical vocabulary for projects. Recognise that food ingredients should be combined according to their sensory characteristics. Using awareness of taste, texture and smell to decide how to season dishes and combine ingredients.	Start to know that a recipe can be adapted a by adding or substituting one or more ingredients. Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eatwell Plate' Know that to be active and healthy, food and drink are needed to provide energy for the body Use a wide range of ingredients