Design Technology Progression of Skills

(Adapted from the D&T Association documents)

Designing

When designing, children need to understand the context they are working in, think about who their products will be for and decide what tasks they will perform. They need opportunities to generate, develop, model and communicate ideas in a variety of ways, including spoken language, drawings, templates, mock-ups, prototypes and pattern pieces.

	Reception	Year 1	Year 2
	Early Learning Goal Shares his/her creations, explaining the process he/she has used	**The National Curriculum (KS1)** To design purposeful, functional, appealing products for themselves and other users based on design criteria To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	
Generating, developing, modelling and communicating ideas	To talk through their design process with others and say what they are doing and why. To talk about how they will create their product/prop/model.	To draw on their own experiences, construction kits and existing products to help generate ideas. To suggest ideas and explain what they are going to do. To use drawing to communicate their ideas	To develop their designs through discussion, observation of existing products, construction kits, drawing and making templates and mock-ups To identify a purpose for what they intend to design and make To use drawings to communicate their ideas paying more attention to details and proportions. Use Digital Media to help where possible.
Understanding contexts, users and purposes	To talk about why they have create props or costumes (e.g. how does it enhance their play, who is it for, what does it do?)	• work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work (e.g. a jacket to keep a Teddy safe at night) • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas	

Making

When making, children should select from a range of tools and equipment, explaining their choices. They also need opportunities to choose the material and components they will use, thinking about their working characteristics. They should follow procedures for safety and hygiene and develop a repertoire of practical skills and techniques, working with increasing accuracy.

	Early Learning Goals	**National Curriculum (KS1)**
	To safely uses and explores a variety of materials, tools and techniques,	**T**o select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

	experimenting with colour, design, texture, form and function (CM) To use a range of small tools, including scissors, paint brushes and cutlery;(FM)	To select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	
	Reception	Year 1	Year 2
Planning	To use various techniques such as folding and cutting with increasing accuracy to obtain a desired size, shape or function. To explore a variety of tools for shaping and joining (hammer, screwdriver, hole punch, stapler, drill) with high level of supervision and scissors and glue with increasing independence.	To make their design using appropriate techniques. To create a product using levers and sliders. To use simple finishing techniques to improve the appearance of their product.	To begin to select tools and materials using correct vocabulary to name and describe them. select from a range of materials and components according to their characteristics To explain their choices when choosing tools and materials. To create a product using wheels and axels. To choose and use appropriate finishing techniques.
Practical skills and techniques		To measure, mark out, cut and shape a range of materials with help. To assemble, join and combine materials and components together using a variety of temporary methods i.e. glue or masking tape. To use tools e.g. scissors and hole punches) safely. To follow procedures for safety and hygiene food ingredients	To assemble, join and combine materials in order to make a product. To measure, cut and score with some accuracy. To use hand tools safely and appropriately. (hacksaw) To follow procedures for safety and hygiene food ingredients
Evaluating When evaluating, children should make increasingly sophisticated judgements about their own ideas and products against design criteria. They should consider the views of others in order to improve their work. They should also investigate and evaluate existing products using a variety of questioning techniques and, in KS2, learn about important inventors and their inventions.			
	Early Learning Goal Shares his/her creations, explaining the process he/she has used	**National Curriculum** To explore and evaluate a range of existing products To evaluate their ideas and products against design criteria	
	Reception	Year 1	Year 2
Own Ideas and Products		To talk about their design and what they are making.	To talk about their design and what they are making.

	Talk with adult and other children how they made their creation and say if they would change anything. They talk about what they like about it and what they thought was difficult.	To evaluate their product by discussing how well it works in relation to the purpose. To evaluate their products as they are developed, identifying strengths and possible changes they might make.	To evaluate against their design criteria e.g. referring to what their product is intended to do, who it will be for and how it works To evaluate their products as they are developed, identifying strengths and possible changes they might make. To talk about their ideas saying what they like and dislike about them.
Existing Products	They talk about toys and costumes and food and say what they like and dislike about them	Children explore: • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products	
Technical knowledge Technical knowledge is the body of knowledge and understanding that is specific to design and technology that needs to be developed and then applied when children are designing, making and evaluating products.			
	Early Learning Goals To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function (CM)	**National Curriculum** To build structures, **exploring** how they can be made stronger, stiffer and more stable To explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	
	Reception	Year 1	Year 2
Making products work	Children explore toys, bikes and trikes, and construction kits such as Mobilo, stickle bricks and Lego to develop a curiosity about how things work and fit together. They develop an understanding of stability and strength through their exploration of junk modelling, and building and joining materials.	**(Both year groups have the same focus, but with a different learning context i.e. different materials explored, different mechanisms explored).** To talk about the working characteristics of materials i.e. which ones are bendy, stiff etc. To describe models and structures and the properties of the materials that have been used. To learn about how mechanisms (such as levers, sliders, wheels and axles) can be used in different ways and for different purposes. To make freestanding structures stronger, stiffer and more stable To make a 3-D textiles product by assembling it from two identical fabric shapes To combine ingredients according to their sensory characteristics to make food. To use the correct technical vocabulary for the projects they are undertaking	

Cooking and nutrition

Cooking and nutrition provides opportunities for children to learn about where food comes from, how food is grown, reared or caught and the effect of seasonality on the availability of food. They also learn about the principles of healthy eating and how to prepare and cook dishes safely and hygienically using a range of techniques. Cooking and nutrition is taught alongside designing and making within a D&T food project.

	Early Learning Goal To use a range of small tools, including scissors, paint brushes and cutlery;(FM)	**National Curriculum** To use the basic principles of a healthy and varied diet to prepare dishes To understand where food comes from.	
	Reception	**Year 1**	**Year 2**
Where food comes from	To know that milk comes from cows and that we can grow and pick fruit and vegetables.	To know that all food comes from plants or animals To know that food has to be farmed, grown elsewhere (e.g. home) or caught	
Food preparation	**With close supervision:** • **Mix** wet ingredients • **Mix** dry ingredients • **Mix** wet and dry ingredients to make a batter or dough • **Measure** ingredients using a teaspoon or tablespoon • **Measure** ingredients using a measuring cup • **Cut** soft vegetables eg cucumbers **Independently:** • **Cut** (cardboard, pumpkins, playdough etc.) using a safety knife or clay tool using wither a sawing motion or straight cut (whichever is appropriate)	Children learn some basic food preparation skills. Examples are below. Not all need to be learned and teachers are free to choose the ones that suit their topic, children's interests and needs. **With close supervision:** • use the **bridge hold to cut** harder foots using a serrated vegetable knife (e.g.apple) • use **claw grip to cut** soft foods using a serrated vegetable knife (eg. tomato) • **Cut** food into evenly sized largish pieces (eg potatoes). • **Peel** vegetables using a peeler (eg carrot) might need physical guidance. • **Grate** soft and hard food using grater (eg. cheese, carrot) **Independently:** • **Drain** away liquids form packaged food using a sieve (eg sweetcorn, feta, mozzarella) • **Use** a lemon squeezer **With close supervision** • **Mix, stir and combine** liquid and dry ingredients (eg. Muffins) • **Crack and egg** and **beat** together using a fork • Use small table knife for **spreading** soft spreads on to bread • Use hands to **shape** dough into small balls or shapes. • **Assemble and arrange** cold ingredients (eg sandwiches, fruit kebabs • **Sift** flour into a bowl.	**With close supervision:** • use the **bridge hold to cut** harder foods using a serrated vegetable knife (e.g.apple) • use **claw grip to cut** soft foods using a serrated vegetable knife (eg. tomato) • **Cut** food into evenly sized largish pieces (eg potatoes). **With moderate supervision:** • **Peel** vegetables using a peeler (eg carrot) • **Grate** soft and hard food using grater (eg. cheese, carrot) **Independently:** **Drain** away liquids form packaged food using a sieve (eg sweetcorn, feta, mozzarella) **Use** a lemon squeezer **With moderate supervision**: • **Mix, stir and combine** liquid and dry ingredients (eg. Muffins) • **Crack an egg** and **beat** together using a fork • Use small table knife for **spreading** soft spreads on to bread • Use hands to **shape** dough into small balls or shapes. • **Assemble and arrange** cold ingredients (eg sandwiches, fruit kebabs **Independently:** **Sift** flour into a bowl.

Cooking	Note: Although children will not be cooking hot food, children should understand how hot food is cooked safely by: • **Observing** adults using the hob, oven, toaster and/or microwave. Understand why it is unsafe to use these until older.	Note: Although children will not be cooking hot food, children should understand how hot food is cooked safely by: • **Observing** adults using the hob, oven, toaster and/or microwave. **With close supervision:** Be able to prepare food for baking and frying such as **greasing** baking tins and **adding oil** to frying pans/saucepans	Note: Although children will not be cooking hot food, children should understand how hot food is cooked safely by: • **Observing** adults using the hob, oven, toaster and/or microwave. **With close supervision:** Be able to prepare food for baking and frying such as **greasing** baking tins and **adding oil** to frying pans/saucepans
Nutrition	Understand the difference between healthy and not healthy food.	Across KS1 pupils should know: • how to name and sort foods into the five groups in The Guide • that everyone should eat at least five portions of fruit and vegetables every day • that a healthy diet comprises food and drinks from each of the food groups.	

Explanations and Examples of terms and terminology in Progression of skills.

	Commentary	Examples of Classroom Practice
Imaginary and story-based contexts	Careful selection of contexts for children's learning is essential if they are to work confidently. Imaginary and story-based contexts, whilst not included as examples in the 2014 programme of study for KS1, can provide real, relevant and motivating starting points for children's designing and making. Traditional stories, fairy tales or nursery rhymes with a design problem to be solved can provide appropriate contexts for children's designing and making. Where appropriate, imaginary and story-based contexts can be linked to cross-curricular topics or themes or connect with learning in other subjects.	• Children in Y2 are given the problem of designing and making a hat to stop Teddy getting sunburnt in the summer. • Children in Y1 are challenged to design and make a stronger, more stable chair for Baby Bear using construction materials, construction kits and textiles. Other examples of projects carried out within imaginary or story-based contexts include: • Designing and making a trolley to carry the Teddy bears' picnic to the park • Designing and making vehicles for Bob the Builder • Designing and making a coat for Katie the class doll • Designing and making a Shaun the Sheep storyboard with moving pictures • Designing and making a new bridge for Billy Goats Gruff • Designing and making a safety jacket that helps Teddy to be seen at night
Local community, industry and the wider environment	Choosing suitable contexts for children's learning is essential if they are to work confidently. It is important to carefully select contexts based on the local community, industry and the wider environment that are meaningful and relevant to KS1 children's learning. Where appropriate, these contexts can be linked to cross-curricular topics or themes or connect with learning in other subjects.	• After a class visit to the local park, children in Y2 are given the challenge of turning the park into a playground by designing and making small-scale freestanding play equipment suitable for young children. • Following a visit to the local library, Y1 children design and make books with flaps and sliders that can be displayed and read in the school library. • Following a visit to the local farm, Y2 children are inspired to design and make a range of toy farm vehicles suitable for the children in Nursery and Reception to play with. Other examples of projects carried out within the context of the local community, industry or the wider environment include: • **Designing and making** fruit drinks for a local supermarket following a class visit, a small-scale carnival float for the local parade, toy emergency service vehicles after a visit by the fire brigade, toy enclosures for farm animals after a visit to a local farm, small-scale park furniture after a visit to the local park, making greeting cards with simple moving parts to put on sale in the class shop
Themselves or other users	Children should think about and be able to say who the products they design and make will be for. Given their early stage of development, the users for KS1 children's products will often be themselves. Other users should be familiar to the children, including imaginary or story-based characters, younger children, their peers or parents, so that the children are able to undertake a real evaluation. As children progress, the range of users can become less	• Children in Y1 design and make finger and glove puppets to use themselves in their classroom theatre. • As part of their topic 'Moving Along' children in Y2 are given the challenge of designing and making a vehicle for Bob the Builder that performs a specific task he needs to carry out. • Children in Y2 design and make a whole class moving picture book of popular nursery rhymes for the children in Reception to enjoy. Other examples of users include: • Teddy bear – design and make a trolley to carry his picnic to the park

	familiar, for example visitors to the school or people they meet in the local community during class visits.	• Katie the class doll – design and make a cape for her to wear when it is cold • Parents and carers – design and make greetings cards for them with simple moving parts for a special occasion • Shoppers – design and make a new range of fruit drinks that they could purchase from a local supermarket
What their products are for	Children should be able to clearly state the purpose of their products. The products children design and make at KS1 should perform clearly defined tasks and should be evaluated in use.	• Designing and making fruit salads for sports day • Designing and making vegetable kebabs for the class picnic • Designing and making a poster with moving parts for a class display • Designing and making a vehicle to solve a problem for a story character • Designing and making a fabric placemat to protect surfaces • Designing and making a finger puppet for imaginary role-play
How their products will work	Children should think about and be able to clearly state how their products will work. Every product should have a functional element. The functionality of products children design and make at KS1 should help to fulfil users' needs and purposes. When children explain how their products work there will often be a link to their knowledge and understanding in science.	• 'A slider moves backwards and forwards and I can use this in my picture to make the snail move forwards and backwards from behind a stone.' • 'I am going to use running stitch to join my glove puppet together as it is stronger than glue or lacing.' • 'I have put more bricks at the bottom of my tower to make the bottom wider so it doesn't fall over.' • 'Thick card is strong so I will use it to make the seat for Baby Bear.'
Simple design criteria	Children should use a limited number of simple design criteria to help develop their ideas. In KS1 design criteria might be provided by the class teacher to guide children's thinking, generated through a class discussion or developed by the children themselves. The criteria should state what the product has to do in order to be successful and children should refer to them to help inform their design ideas	• The fruit salad should be sweet, colourful and crunchy. • The bag should be the right size, strong and easy to carry. • The mechanism should make the mouse go smoothly in and out of the hole. • The structure should stand up on its own and be strong enough to carry Teddy.
Drawing on their own experiences	Children should generate ideas by drawing on their own experiences. This is an important step in building on children's previous learning and utilising their experience of D&T in the home and community. KS1 children are surrounded by products in the designed and made world and should be encouraged to talk about products they have seen and used as a basis for generating their own design ideas. Where appropriate, children could also bring to school examples of the products they use at home.	Example questions to elicit children's experiences and help to generate ideas: • What types of fruit have you eaten? Which is your favourite fruit and why? • Have you played with any puppets before? How did you use them? What were they made from? Why do you think these materials were used? • What types of toy vehicles have you played with? How do they work? What kind of games do you play with them? • Have you built a tower before? What construction kit did you use? How did you stop it from falling over?

Use knowledge of existing products	When children in KS1 are generating ideas it is good practice for these to be informed by existing products they have explored and evaluated. This draws together National Curriculum requirements for designing and evaluating in a coherent way that makes sense to children and reflects D&T in the wider world. The range of existing products, such as handling collections, made available to children should be chosen carefully to support them in generating ideas for their own products. The main methodology for learning about existing products is questioning – by both the teacher and the children. Effective questioning extends the children's thinking.	Examples of questions for exploring and evaluating a range of existing products at KS1 include: • What are the products called? • Who are the products for? • What are the products for? • How are the products used? • How do the products work? • Where might the products be used? • What materials are the products made from? Why have these been used? • What do you like and dislike about the products? • What change/s would you make to the product to make it more appealing to you?
Talking and drawing	Talking and drawing provide two very important ways for KS1 children to develop and communicate their ideas. a) Talking Spoken language is fundamental to the development and communication of design ideas. At KS1 children can use spoken language to imagine possibilities, explain and evaluate their ideas, build technical vocabulary appropriate to the product they are designing and making, and listen to what others have to say. b) Drawing Children should use simple drawings to support their designing with the inclusion of labels to identify materials, components and parts of their products. Careful teacher judgment should be applied in KS1 when using drawing as a technique for designing.	Examples of relevant questions that children might ask to guide their thinking include: • How could we make the ….? • What materials could we use? • What will it look like? • What size, colour, shape, taste, texture ….? • How will it work? • What would happen if ….? • How can we make it stronger? Initially children can find it difficult to develop and communicate their ideas through drawings. In such circumstances, it is good practice to develop this technique retrospectively by drawing their products when they have been completed. As children make progress, drawing can then be used prospectively to develop and communicate their ideas.
Exploring materials, components and construction kits	Children in KS1 should 'model' ideas by exploring materials, components and construction kits. In this context 'modelling' refers to representing thoughts in some way in order to generate, develop, communicate, evaluate and modify ideas for products. Materials and components can be temporarily arranged and rearranged to find out whether a design idea will work in reality. Similarly, models built with construction kits can be used to externalise children's design ideas in a form that	Nigella enjoyed looking at the different toy vehicles on display. After watching a Bob the Builder video, she talked about making a model of a London bus that Bob could ride on a day trip to then capital. Nigella looked at different wheels and body shapes in the collection of toy vehicles, and used construction kits to make models of different buses. She then collected materials and components that could be used to make her final product and arranged them, without fixing them together permanently, to see if her ideas would actually work.

	can be discussed and evaluated prior to using consumable materials and components.	
Making templates and mock-ups	KS1 children should 'model' their ideas by making templates and mock-ups. In this context 'modelling' refers to representing thoughts in some way in order to generate, develop, communicate, evaluate and modify ideas for products. Creating templates enables children to represent the shape and size of their product in a way that also assists with measuring and marking out of the final product. Mock-ups are generally 3-D representations of design ideas. They enable children to try out their ideas quickly using simple, temporary joining techniques and inexpensive materials.	• Using a paper template to develop ideas and mark out the fabric needed for a finger puppet or glove puppet. • Using paper or dipryl and masking tape to mock-up and evaluate ideas for a beach bag prior to using more expensive materials and permanent joining techniques.
Use information and communication technology	Children at KS1 should use information and communication technology (ICT), where appropriate, to develop and communicate their ideas. It is appropriate to use ICT in KS1: • When children can see the value of using it e.g. it improves the accuracy and appearance of their final product • Where it achieves learning objectives within a particular project more effectively or efficiently e.g. it helps children to develop their design ideas more rapidly • Where children have been taught and have practised the skills they need to use the software successfully and independently	• Children use generic paint software to design a coat for Teddy. • Children use simulation software to model and assemble a structure on the computer screen by clicking, dragging and assembling components from a virtual construction kit.
Suggesting what to do next	Most children in KS1 should be able to suggest what to do next in assembling their products.	Examples of next steps might include: • Deciding who they will work with • Choosing where to work • Saying what material or component they need to collect first • Deciding which tool or piece of equipment is needed for a particular task • Saying which practical skill or technique (e.g. sawing or gluing) will be used • Deciding which finishing media to use • Taking a closer look at some existing products

Select from a range of tools and equipment	Children in KS1 should be able to select from a range of tools and equipment and explain their choices. As they progress they should be able to do this with increasing independence. Some of the tools and equipment children select will be suitable for their task. Other selections may not and will require teacher intervention and guidance as appropriate.	Examples of what children might do: • Jacinta correctly identified the tools she needed to make axle rods for her vehicle, including a small vice pre-attached to a work station in the classroom and a junior hacksaw. She could explain that the vice held the dowel securely whist it was sawn using the junior hacksaw. • Marcel independently identified and selected the utensils he needed to make his fruit salad. He could explain that that kitchen scissors could be used to cut some herbs and a juicer used to squeeze juice from an orange.
Select from a range of materials and components	Children in KS1 should be able to select from a range of materials and components according to their characteristics. As they progress they should be able to do this with increasing independence. The explanations children give should refer to either functional properties (i.e. strong or waterproof) or aesthetic qualities (e.g. shiny or patterned) or both. Some of the materials and components children select will be suitable for their task. Other selections may not and will require teacher intervention and guidance as appropriate.	Examples of what children might say and do: • Yoshe looked at the collection of fruit displayed in the classroom. He was able to name most of the fruit and identified some of the sensory characteristics (e.g. appearance, taste) that would make them suitable for his fruit kebab. He used his knowledge of these characteristics when selecting from the range provided by his teacher. • Maia selected fabrics and components to make a safety jacket for Teddy. She could explain that she had chosen some fabric because it was reflective and would help Teddy to be seen at night and other fabric to keep him warm. She chose to use Velcro as her fastener as it made it easy for Teddy to take the jacket on and off.
Measure, mark out, cut and shape	Children in KS1 should be able to measure, mark out, cut and shape a range of materials and components including food ingredients, mechanical components, textiles and construction materials.	Examples at KS1 include: • Making a template and using it to mark out a piece of fabric • Measuring the required length of dowel with non-standard or standard units and marking out before cutting • Slicing vegetables with a serrated, round ended knife • Making holes using an appropriate hole punch • Using a junior hacksaw to cut dowel • Folding paper and card
Assemble, join and combine	Children in KS1 should be able to assemble, join and combine a range of materials and components including food ingredients, mechanical components, textiles and construction materials.	• Assembling construction kit components to build a freestanding framework • Making a mock-up by joining paper with masking tape • Using paper fasteners as pivots in a simple lever • Combining ingredients with a dressing to make a vegetable salad • Combining wooden wheels and axles in a toy vehicle

Use finishing techniques	Children in KS1 should be able to use finishing techniques with a range of materials and components including food ingredients, mechanical components, textiles and construction materials	• Using digital text and graphics to enhance a moving picture • Using paint to make small-scale playground equipment appealing to the intended users • Using glasspaper to finish rough edges where wood has been sawn • Adding sequins to a coat for Kinga the class doll • Applying 3-D fabric paint or printing to a simple bag • Using paper finishing techniques to bring pictures to life in books and cards
Talk about their design ideas and what they are making	Spoken language is the main way that KS1 children reflect upon and evaluate their design ideas and products. When considering their design ideas, children should refer to what their product is intended to do, who it will be for and how it will work. This will involve children asking and answering questions When considering their products, children should be able to say what they are intended to do, who they will be for and how they will work. This will involve children asking and answering questions	a) Talking about design ideas such as: • What type of product will I make? • Who will the product be for? • What will my product do? • How will my product work? • Where will my product be used? • What materials and components will I use? • What do I like about my design ideas? • Will my design ideas meet the design criteria? • What idea has my design buddy given me that might help to improve my design? b) Talking about their products such as: • How well does the product meet the needs of the user? • How well does the product achieve its purpose? • How well does it work? • What do I like about my product? • How well does my product match the design criteria? • What could I do to make it better? What one thing would I tell other children to help them when designing?
Make simple judgements	Throughout the designing and making process, children in KS1 should make simple judgements about their products and ideas against design criteria. Design criteria might be provided by the class teacher to guide children's thinking, generated through a class discussion or developed by the children themselves. The criteria should state what the product has to do in order to be successful and children should refer to them when evaluating their design ideas and products.	Examples of classroom practice: • The fruit salad should be sweet, colourful and crunchy. • The bag should be the right size, strong, easy to carry. • The moving part in the picture should move in and out and it should move smoothly. • The structure should stand up on its own and be strong enough to carry Teddy

Simple working characteristics	Drawing on their science understanding where appropriate, KS1 children should know about the simple working characteristics of a range of materials and components including food ingredients, mechanical components, textiles and construction materials. This knowledge should be applied when children are selecting materials and components for their products. Children should refer to either functional properties (i.e. strong or waterproof) or aesthetic qualities (e.g. shiny or patterned) or both.	Examples of what children might say and do: • Xavier looked at the collection of fruit displayed in the classroom. He was able to name most of the fruit and identified some of the sensory characteristics (e.g. appearance, taste) that would make them suitable for his fruit kebab. He used his knowledge of these characteristics when selecting from the range provided by his teacher. • Maia selected fabric and components to make a safety jacket for Teddy. She could explain that she had chosen some fabric because it was reflective and would help Teddy to be seen at night and other fabric to keep him warm. She chose to use Velcro as her fastener as it made it easy for Teddy to take the jacket on and off.
Movement of simple mechanisms	Drawing on their previous and everyday experiences of things that move, KS1 children should know that simple mechanisms produce different types of movement. Simple mechanisms include sliders which move in a straight line, levers which move in a curve and wheels and axles which turn. Children may also learn about simple winding mechanisms. This knowledge should be applied when children are deciding which type of mechanism they need to create the type of movement they want in their products. For example, a simple card lever could be used to show a butterfly flying to a flower and a slider used to show a snail appearing from behind a stone. In KS1 the expectation is that most children will control mechanisms directly e.g. push or pull a toy vehicle they have designed and made.	Teacher questioning can help to develop children's knowledge and understanding. Existing products: • What parts of the picture do you think will move? • What parts of the vehicle do you think will move? • How do you make the mechanism move? • What is the mechanism called? • What type of movement does the mechanism make? Own products: • What parts of your picture will move? • How do you want them to move? • What type of mechanism do you need for the ...? • Where will you put the slot for the slider? Where will you put the pivot for the lever? • Will the wheels on your vehicle be fixed or loose on the axle? Why? • Where will you put the axle holders so the vehicle will run in a straight line?
Stronger, stiffer and more stable	Children in KS1 should know how freestanding structures can be made stronger, stiffer and more stable. Freestanding structures can be assembled using construction kits to help develop children's understanding and include walls, buttresses, towers and frameworks. They can also fold paper and card to create simple structures, making joins with masking tape where necessary, to explore the concepts of strength, stiffness and stability. This understanding should be applied when children are designing and making products. Construction kits can be used in combination with consumable materials to assemble children's final products.	Teacher questioning can help to develop children's knowledge and understanding. Existing products: • What are the structures called? • What materials have been chosen and why? • How have the parts been joined together? • How have the structures been made stable? • How have they been made strong enough or stiff enough for their purpose? Own products: • How will you make your structure stand up on its own? • How will you make it stable? • How will you make it strong enough for its purpose? • How will you make it stiff enough for its purpose? • What materials or construction kits will you use? Why? • How will you join the parts of your structure together?

Two identical fabric shapes	Children in KS1 should understand that a 3-D textiles product can be assembled from two identical fabric shapes. This understanding should be applied when they are designing and making products. Children should create templates and use these to mark out and cut identical fabric shapes. Some children may progress to use simple pattern pieces. Fabric shapes can be joined together using a variety of techniques, such as simple running stitch, gluing, stapling and lacing. Techniques should be demonstrated by the teacher and then practised, explored and evaluated by the children, with adult supervision as appropriate.	Examples of what children might say and do: • Skylar decided to make an animal glove puppet as a prop to use when retelling one of her favourite stories. Her teacher demonstrated how to mark and cut out identical fabric shapes using a card template and Skylar made a simple finger puppet with glue and felt in order to practise the technique. Her teacher then demonstrated a range of joining techniques including sewing, lacing and stapling. Skylar practised each technique through a focused task and decided to use sewing for her glove puppet as she felt it was strongest. She drew around her hand and used this as a basis for her card template. She could explain why the card template needed to be 1cm wider around its perimeter to provide seam allowance. • Tareek decided to make a simple placemat for Teddy to protect the table from his dinner plate. His teacher demonstrated how to use plastic shapes as templates and how to mark out and cut identical fabric shapes. Tareek practised this technique and applied it to make his placemat which he assembled using two pieces of patterned fabric glued together, with wadding in between. He found this project straightforward and made rapid progress, so his teacher asked him to design and make something for Teddy. Tareek chose to assemble a felt bag using a simple pattern piece and Velcro as a fastening.
Combined according to their sensory characteristics	Children in KS1 should know that food ingredients can be combined according to their sensory characteristics. The sensory characteristics of ingredients are appearance, taste (flavour), texture (mouth feel) and smell (aroma). Children should select the ingredients they wish combine in a food product according to these characteristics in order to meet design criteria and the preferences of the person or people who will consume it. In effective practice, the sensory descriptors children use for each of these characteristics should be supplemented by a word bank in order to develop their sensory vocabulary.	Jordan tasted and looked closely at a variety of types of fruit. He described and recorded the colour, taste and smell of each type of fruit and, when supported by his teacher, used words to describe texture. He decided that he wanted his fruit salad for a class party to be colourful, sweet and crunchy and used these design criteria to select from the range of ingredients provided by his teacher. Children's voice when selecting ingredients: • 'I want my fruit yogurt to be orange, sour and smooth.' • 'I want my fruit kebab to be green, yellow and red, juicy, soft and smell fresh.'
Five groups in the Eatwell Guide	In KS1 children should be able to name and sort foods into the five groups from the Eatwell Guide. They should know that a healthy diet comprises food and drinks from each of the food groups: • Fruit and vegetables; • Bread, rice, potatoes, pasta and other starchy foods; • Milk and dairy foods; • Meat, fish, eggs, beans and other non-dairy sources of protein;	Examples of activities to develop children's knowledge and understanding at KS1: • Naming different foods • Discussing what foods might be in each group • Sorting foods into the correct food groups • Identifying the largest groups • Identifying the smallest group • Discussing what this means for the food products children design and make

	• Foods and drinks high in fat and/or sugar.	
Five portions of fruit and vegetables every day	Children in KS1 should know that everyone should eat at least five portions of fruit and vegetables every day. A portion is what fits into the palm of a hand. Variety is important and different types of fruit and vegetables count, for example: • fresh, e.g. tomatoes • frozen, e.g. frozen peas • dried, e.g. raisins • canned, e.g. sweetcorn or carrots • juice, e.g. orange juice	
Cutting, peeling and grating	KS1 children should learn how to use skills and techniques such as cutting, peeling and grating. It is important that children understand that we need certain skills and techniques to be able to make food products. In KS1 these might include washing, peeling, juicing, grating and cutting (e.g. snipping herbs and spring onions with kitchen scissors suitable for children's use). These skills and techniques should be demonstrated correctly and safely to the children by a teacher or another trained adult.	Examples of practice: • Ingredients for chopping and slicing are cut in half lengthways to provide a flat base and held still with a fork so that children are able to cut safely. • Using carrots, children explore the effects of using different equipment on the same ingredient when grating, slicing into thin rings and slicing into sticks. • Children think about the effects of different utensils on fruit and vegetables e.g. the juicer is used to make juice from an orange. Children may also mix, sift, crack eggs and pour to prepare food which can be less scaffolded or even independent.