

Design and Technology in the Early Years

	Communication and Language	PS&ED	Physical Development	Maths	Understanding of the world	Expressive arts and Design
Early Years	<p>Overview: Through design and technology, children listen carefully to instructions and follow them accurately when using tools and practising techniques. When responding to questioning, children explain how their own and others' products work, say who they think they are for and what purposes they fulfil. They develop technical vocabulary and learn how to express their ideas for what they want to design and make.</p>	<p>Overview: Design and technology is ultimately about people and making things better for people. As a result there are many issues to explore empathy, values and needs of users. Design and technology also provides unique opportunities for children to develop their self confidence and self awareness, manage their feelings and make relationships.</p>	<p>Overview: Design and technology activities can significantly help with fine and gross motor experiences in children. Opportunities for sensory explorations and co-ordination can be achieved through a number of tasks and play. Using small tools, with feedback and support from adults, allow children to develop proficiency, control and confidence. Ensure you have a range of tools as they employ muscles in different ways (twisting, pushing and pulling) and can develop gross motor skills such as hammering and sawing.</p>	<p>Overview: This area of learning enables children to explore and further their understanding of shapes, spatial awareness and measure. Developing a risk-taking approach is also key and should help to embed a growth mindset which is vital for D&T.</p>	<p>Overview: This area of learning enables children to learn about products and environments that have been designed and made by people. Children think about how a range of everyday and less familiar products are used in places such as schools and homes. They select and use these products for particular purposes and investigate and evaluate them using a range of questioning techniques. They talk about features of their indoor and outdoor environment. To support their learning in design and technology, it is essential that children explore the built or design and made world.</p>	<p>Overview: The area focuses on children's creative development and mentions the need for a wide-range of materials, tools and other resources. This provides opportunities for children's learning in D&T to draw on the 'arts' when they are designing and making. It is equally important to be aware of the distinctive nature of D&T so that children receive a genuine design and technological experience. For D&T, the children and adult would be discussing different users, the purpose of their product and how it works (function). In D&T we often mention 'Something for Somebody for Some purpose' with teachers. Children should be using a variety of materials and engage in imaginative role-play where they create and use indoor and outdoor environments based on the designed and made world.</p>

D &T Skills and Knowledge Progression Map – Early Years - Chilton

<p>Early Years – Nursery</p>	<p>PS&ED 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.</p> <p>Tips on effective practice:</p> <ul style="list-style-type: none"> • Provide opportunities for children to work collaboratively on design and make tasks. • Try giving different jobs to the children in the team. Different high-visibility jackets can help to distinguish roles. • Begin with simple tools that can be used one-handed (e.g. sandpaper block) and allow them to experience a range of tools, and those that require 2 hands too (e.g. twist drill). • Including some aspects of (low) risk situations can help develop self-esteem. Use a hammer to drive a nail under supervision. Consider holding the nail with a strip of cardboard keeps fingers away. • Have children understand risks and what we do to reduce them, for example, wearing goggles. This will help to develop self-care. • When designing and/or making things for other people, ask the children what they think the user would like/need. • Get children to empathise with users e.g. if a dinosaur with short arms can't do his shoe laces, how would he feel? 	<p>Physical Development -Continue to develop their movement, balancing, riding (scooters, trikes and bikes) and ball skills.</p> <ul style="list-style-type: none"> • Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. • Use one-handed tools and equipment, for example, making snips in paper with scissors. <p>Tips on effective practice:</p> <ul style="list-style-type: none"> • Using small tools help to develop precision • Exploring different fastenings such as zips, press-studs, Velcro, toggles, nuts and bolts on product handling collections. • Wooden boards with holes in can accommodate a number of different fixings such as hex nuts, screws and nails. Where possible introduce tools too such as allen keys, stubby screwdrivers and hammers. • Consider soft surfaces for using hammers and nails, for example, polystyrene and cork can make the process easier. Golf tees provide a larger surface area to hit than many nails. • Can you set up a workshop area with wood, sandpaper and saw? Clamps and jigs can hold items in place as children cut and assemble. 	<p>Maths Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.</p> <ul style="list-style-type: none"> • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. • Combine shapes to make new ones - an arch, a bigger triangle etc. • Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc. <p>Tips on effective practice:</p> <ul style="list-style-type: none"> • Ensure construction materials and kits feature a range of different shaped items. • Manipulation of different materials such as plasticine, sheet materials such as card into different shapes. • Use a range of units of measure, both standard and non-standard. • Set challenges that require measures e.g. a bridge that needs to hold 3 cups of sand. • Provide opportunities to use their developing skills in measures when creating products as well as using estimation and comparison. • Show how to weigh ingredients when following a recipe. • Get children to predict when creating objects and experiment with making small adjustments e.g. 	<p>Understanding of the world</p> <ul style="list-style-type: none"> • Use all their senses in hands on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Explore how things work. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice. <p>Tips on effective practice:</p> <ul style="list-style-type: none"> • Children need frequent opportunities to explore existing products. • Ensure they explore products designed for different users and purposes. Having a product handling collection is useful. • Make sure that existing product collections include those made from textiles, food and construction materials. They can feature everyday (but unusual) items and some with moving parts e.g. hand whisk. • Encourage children to ask questions about who the products are for and what they do. • Ask them to think about the materials that have been used and how the products have been made. 	<p>Expressive arts and Design Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</p> <ul style="list-style-type: none"> • Join different materials and explore different textures. <p>Tips on effective practice:</p> <ul style="list-style-type: none"> • Children's learning In D&T should include planned, purposeful play and both child-initiated and adult-led activities. • Encourage children to think about what their product is for e.g. fruit drink for a party. • Ask them to say who their product is for e.g. coat for Teddy. • Function – make sure that children have opportunities to create products that have to work in some way in order to be successful e.g. using a construction kit, make a wall strong and stable enough for Humpty Dumpty. • Aesthetics – ask children to think about the appearance, finish and texture of the product e.g. decorative effects used on a simple felt bag to suit the user.
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<p>Early Years - Reception</p>	<p>PS&ED Show resilience and perseverance in the face of challenge.</p> <p>Manage their own needs.</p> <p>(Effective practice as above)</p> <p>Communication and Language:</p> <ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check they understand what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Engage in non-fiction books. <p>Tips on effective practice:</p> <ul style="list-style-type: none"> • Use the correct technical terms specific for tools and materials. • Sort and store materials into different categories based on their properties e.g. optical properties such as opaque, translucent and transparent. This may be changed at different times, so you may then have materials that can bend, be folded etc. • Provide a range of non-fiction books related to machines, vehicles, buildings etc. • Graphical instructions such as building block instructions can be used to help graphical communication. 	<p>Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.</p> <p>(Effective practice as above).</p>	<p>Maths Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p> <ul style="list-style-type: none"> • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. • Continue, copy and create repeating patterns. • Compare length, weight and capacity. 	<p>Understanding of the world Explore the natural world around them.</p> <p>(Effective Practice as above)</p>	<p>Expressive arts and design</p> <ul style="list-style-type: none"> • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively, sharing ideas, resources and skills.
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