

# Design Technology overview



The Academy at  
**St James**  
Aspire, Achieve, Believe

|                |  |  |  |
|----------------|--|--|--|
| <b>EYFS</b>    | <b>3 &amp; 4-year-olds:</b> <ul style="list-style-type: none"> <li>• Talk about the differences between materials and changes they notice.</li> <li>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>• Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.</li> </ul> |  |  |
| <b>Nursery</b> | <b>Autumn<br/>Helping hands</b>  | <b>Spring<br/>Into the wild</b>  | <b>Summer<br/>Making a splash</b>  |
| <b>Cycle A</b> | <i>Can you combine ingredients to achieve a planned effect? (gingerbread man)</i> <ul style="list-style-type: none"> <li>• Name variety of ingredients.</li> <li>• Use mixing skills.</li> </ul>   | <i>Can you use a needle and thread to complete a simple stitch?</i> <ul style="list-style-type: none"> <li>• Thread a needle.</li> <li>• Create a simple stitch on material.</li> </ul>                  | <i>What shape would a box be?</i> <ul style="list-style-type: none"> <li>• Place materials in the correct order for a planned outcome.</li> <li>• Select appropriate tools to shape and join materials.</li> </ul> |
|                | <b>Autumn<br/>Helping hands</b>  | <b>Spring<br/>Move it</b>  | <b>Summer<br/>Secret garden</b>  |
| <b>Cycle B</b> | <i>Can you join materials to create a photo frame?</i> <ul style="list-style-type: none"> <li>• Understand that tools are used for a purpose.</li> <li>• Understand different methods of joining materials together.</li> </ul>  | <i>Can you use tools with a purpose in mind?</i> <ul style="list-style-type: none"> <li>• To use tools with support</li> <li>• Choosing the appropriate method of joining materials together.</li> </ul> | <i>Can you make a bird feeder for your garden?</i> <ul style="list-style-type: none"> <li>• Choose appropriate tools to adapt your work.</li> <li>• Choose materials for a function or purpose.</li> </ul>         |

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| <b>EYFS</b>      | <b>Reception:</b> <ul style="list-style-type: none"> <li>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>Create collaboratively, sharing ideas, resources and skills.</li> </ul> <b>ELG:</b> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; -</li> <li>Share their creations, explaining the process they have used;</li> </ul> |  |  |
| <b>Reception</b> | <b>Autumn<br/>Helping hands</b>   | <b>Spring<br/>Into the wild</b>  | <b>Summer<br/>Making a splash</b>  |
| <b>Cycle A</b>   | <i>Can you use a bridge technique to cut fruit?</i> <ul style="list-style-type: none"> <li>Use a knife safely and competently.</li> <li>Discuss which foods are healthy and unhealthy.</li> </ul>   | <i>Can you use a simple running stitch?</i> <ul style="list-style-type: none"> <li>Use a needle and thread effectively and safely.</li> <li>Design your own puppet.</li> </ul>                   | <i>Can you make a treasure chest that opens and closes?</i> <ul style="list-style-type: none"> <li>Look at treasure chests and how they open and close.</li> <li>Select materials to create a hinge.</li> <li>Plan the finish of the treasure chest and how it will look.</li> </ul> |
|                  | <b>Autumn<br/>Helping hands</b>   | <b>Spring<br/>Move it</b>  | <b>Summer<br/>Secret garden</b>  |
| <b>Cycle B</b>   | <i>How can you make a photo frame stand on its own?</i> <ul style="list-style-type: none"> <li>Explore a range of methods for joining materials.</li> <li>Explore the use of a range of tools.</li> </ul>   | <i>Can you use a saw safely and effectively?</i> <ul style="list-style-type: none"> <li>Select tools for a purpose.</li> <li>Select appropriate method to join materials effectively.</li> </ul> | <i>Can you make a bug hotel that will stay dry in the rain?</i> <ul style="list-style-type: none"> <li>Select natural materials to combine together.</li> <li>Assemble materials to function as a bug hotel.</li> </ul>  |

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|-----------------------|--|--|---|
| <b>KS1</b>            | 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 |  |   |
| <b>Year 1 &amp; 2</b> | <b>Autumn</b><br><b>The great food journey</b>   | <b>Spring</b><br><b>London's burning</b>   | <b>Summer</b><br><b>Just the ticket</b>   |
| <b>Cycle A</b>        | <i>What vegetables would go together in a soup?</i> <ul style="list-style-type: none"> <li>To use cutting skills for chopping vegetables.</li> <li>To taste different vegetables to work out which will go best together.</li> </ul>       | Can you create a 3D Stuart house? <ul style="list-style-type: none"> <li>Research the Stuart era and the houses that were built then.</li> <li>Explore different techniques to make your model stronger, stiffer and more stable.</li> </ul> | <i>How can you make your vehicle move?</i> <ul style="list-style-type: none"> <li>Investigate movement. Testing out different rolling methods.</li> <li>Selecting a final design for a moving vehicle and finishing the product to a working standard.</li> </ul> |
|                       | <b>Autumn</b><br><b>Little explorers</b>   | <b>Spring</b><br><b>Dungeons and dragons</b>   | <b>Summer</b><br><b>Adventure on the high sea</b>   |
| <b>Cycle B</b>        | <i>Can you design and create your own planter?</i> <ul style="list-style-type: none"> <li>To explore techniques of joining materials together.</li> <li>To use tools for a purpose.</li> </ul>   | <i>How will you make your drawbridge open and close??</i> <ul style="list-style-type: none"> <li>Use a simple winch mechanism.</li> <li>Design the front of your castle.</li> </ul>  | Can you design and make a purposeful and functional boat? <ul style="list-style-type: none"> <li>Explore materials and their properties eg waterproof.</li> <li>To build a structure that will float on water.</li> </ul>   |
| <b>Ongoing</b>        | In all units: Designing, making, evaluation, acquiring and applying technical knowledge.   |  |   |

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| <b>KS2</b>            | 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. |  |   |
| <b>Year 3 &amp; 4</b> | <b>Autumn<br/>Prehistoric Park</b>  | <b>Spring<br/>Under the surface</b>  | <b>Summer<br/>Life beneath the sand</b>   |
| <b>Cycle A</b>        | <p><i>Can you use a basic over stitch effectively?</i></p> <ul style="list-style-type: none"> <li>To join materials using a simple over stitch.</li> <li>To design a stone age satchel.</li> </ul>  | <p><i>Can you make a moving chariot?</i></p> <ul style="list-style-type: none"> <li>Use wheels and axles to make your chariot move.</li> <li>Research and design a Roman chariot.</li> </ul>   | <p><i>How did the Egyptians make bread?</i></p> <ul style="list-style-type: none"> <li>Research bread recipes and cooking methods that the Egyptians used.</li> <li>Use appropriate methods of combining ingredients.</li> <li>Follow a simple recipe.</li> </ul> |
|                       | <b>Autumn<br/>Prehistoric Park</b>  | <b>Spring<br/>Under the surface</b>  | <b>Summer<br/>Life beneath the sand</b>   |
| <b>Cycle B</b>        | <p>What foods were available in the Stone Age?</p> <ul style="list-style-type: none"> <li>To identify where different ingredients are produced in the world.</li> <li>To combine ingredients to achieve a planned effect.</li> </ul>        | <p><i>Can you create a volcano with a pneumatic system?</i></p> <ul style="list-style-type: none"> <li>Research how a pneumatic system can make a part of their model move.</li> <li>Design a volcano incorporating a pneumatic system.</li> </ul> | <p><i>Can you create a working Shaduf?</i></p> <ul style="list-style-type: none"> <li>Research a Shaduf and what they were used for.</li> <li>Sketch a labelled diagram of their Shaduf.</li> <li>Test a range of levers for their Shaduf.</li> </ul>             |
| <b>Ongoing</b>        | In all units: Designing, making, evaluation, acquiring and applying technical knowledge.  |  |   |

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| <b>KS2</b>            | 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. |  |  |
| <b>Year 5 &amp; 6</b> | <b>Autumn</b><br><b>Out of this world</b>   | <b>Spring</b><br><b>After the heartbreak</b>   | <b>Summer</b><br><b>Magic, monsters and mayhem</b>   |
| <b>Cycle A</b>        | <p><i>Can you design a moon a battery powered moon buggy?</i></p> <ul style="list-style-type: none"> <li>Making a working model incorporating electrical components.</li> <li>Making a product move using electrical components.</li> </ul> | <p><i>How did the Victorians influence the textile industry?</i></p> <ul style="list-style-type: none"> <li>To understand the process of weaving.</li> <li>To create a functioning weaving frame.</li> </ul>   | <p><i>What nutritional value do certain foods have?</i></p> <ul style="list-style-type: none"> <li>Research recipes used by the Vikings.</li> <li>Use a variety of cooking skills effectively.</li> <li>To combine ingredients to achieve a planned effect.</li> </ul> |
| <b>Year 5 &amp; 6</b> | <b>Autumn</b><br><b>Olympic challenge</b>   | <b>Spring</b><br><b>Friend of foe</b>  | <b>Summer</b><br><b>Peace, poppies, and warfare</b>  |
| <b>Cycle B</b>        | <p><i>Can you use a CAM mechanism to create movement?</i></p> <ul style="list-style-type: none"> <li>Research different CAM's and their functions.</li> <li>To design your own Greek soldier</li> </ul>                                     | <p><i>How can an electrical component be incorporated into a design and technology project?</i></p> <ul style="list-style-type: none"> <li>To research the use of electrical component in a LED lamp.</li> <li>To design your own LED lamp.</li> <li>To use a variety of tools competently.</li> </ul> | <p><i>Can you use a micro-bit to programme a sound into a structure?</i></p> <ul style="list-style-type: none"> <li>Research WW2 air-raid shelters.</li> <li>Programme a micro-bit with a chosen algorithm.</li> </ul>   |
| <b>Ongoing</b>        | In all units: Designing, making, evaluation, acquiring and applying technical knowledge.  |  |  |