

# Design Technology at Almond Hill Junior School 2023-2024



Subject leader: Mrs Bond



## Subject Intent Statement

*By the end of KS2 children at Almond Hill will...*

- be able to develop prototypes for functional products that are fit for purpose and solve real and relevant problems, using a critical understanding of design.
- be encouraged to use creativity and imagination to develop practical expertise, within a variety of contexts such as the home, enterprise or industry.
- learn to be resourceful and use creative, technical skills that will equip them to perform everyday tasks successfully.

### Implementation

Children at Almond Hill will achieve the criteria mentioned above through class teacher taught lessons on two specific topics for each year group. In line with the National Curriculum, Design Technology will be taught both discretely for skills acquisition, and also may be combined with other foundation subjects through a topic-based learning approach.

During every topic, every child will take part in designing, making and evaluating a product. The complexity and range of the skills taught will progress as the children move further up the school as mentioned in the progression of skills and we will aim to build on those already acquired at KS1.

Design Technology topics and lessons will facilitate cross curricular links to skills from subjects such as Maths and Science as well as enhancing the knowledge acquisition and learning in subjects such as History and Geography. Where opportunities arise, the curriculum will aim to celebrate and compliment the cultural diversity within our school, and wider community. Almond Hill's core learning behaviours will be embedded throughout the learning as children will be encouraged to 'be curious', 'work together' and 'have a go', as well as to 'aim high' and 'enjoy learning'.

#### Adaptations for SEND pupils:

As a school we aim to provide an inclusive DT curriculum which is accessible for all pupils. Lessons may need to be adapted to provide appropriate provision for pupils with SEND. This could be in the form of any of the following:

- Adapted tasks
- Adapted resources / equipment
- Reduced / extended space to use
- Additional support

**Curriculum development:** Implementation and development of levers, linkages, CAMs and pulleys (mechanical systems) into long-term plan.

Topics/Units Across the Key Stage  
Progression of skills

Year Group	Autumn	Spring	Summer
Year 3	<b>Mechanisms (AUT2)</b> Moving Christmas cards - levers and linkages		<b>Food Technology (SUM 2)</b> (Making vegetable medleys - food miles and packaging).
Year 4	<b>Structures (AUT 1) -</b> Greek Parthenon (reinforcing 3D structures)	<b>Sewing (SPR 2) -</b> Bookmarks	-
Year 5	<b>Mechanical Systems (cams) - Moving Models - toys (AUT 2)</b>		<b>Food Technology - Bread</b> (making, seasonality, packaging and advertising) (SUM 2)
Year 6	<b>Sewing - (AUT 2)</b> Containers		<b>Structures (SUM 2) - Mini theatres</b> To incorporate electrical circuits, cams and pulleys.

**Whole School Skills**

	Year 3	Year 4	Year 5	Year 6
--	--------	--------	--------	--------

**Designing**

	Year 3	Year 4	Year 5	Year 6
<b>Understanding contexts, users and purposes</b>	<p>WTS</p> <ul style="list-style-type: none"> <li>All ARE with support</li> </ul> <p>ARE</p> <ul style="list-style-type: none"> <li>Generate ideas for an item, considering its purpose and the user/s</li> <li>Start to understand whether products can be recycled or re-used</li> </ul>	<p>WTS</p> <ul style="list-style-type: none"> <li>All ARE with support</li> </ul> <p>ARE</p> <ul style="list-style-type: none"> <li>With growing confidence, start to generate ideas for an item, considering the purposes for which they are designing</li> <li>Begin to use research to inform ideas in terms of functionality and aesthetics</li> </ul>	<p>WTS</p> <ul style="list-style-type: none"> <li>All ARE with support</li> </ul> <p>ARE</p> <ul style="list-style-type: none"> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose</li> <li>Use results of investigations, information sources, including ICT, when developing design ideas</li> </ul>	<p>WTS</p> <ul style="list-style-type: none"> <li>All ARE with support</li> </ul> <p>ARE</p> <ul style="list-style-type: none"> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose</li> <li>Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose</li> </ul>

<p><b>Generating, developing, modelling and communicating ideas</b></p>	<ul style="list-style-type: none"> <li>Identify a purpose and establish criteria for a successful product, drawing on own experiences and existing products</li> </ul>	<ul style="list-style-type: none"> <li>Generate realistic ideas based on user needs, planning how to use materials, equipment and processes</li> <li>Identify the strengths and areas for development in their ideas and products</li> <li>Take account of the ideas of others when designing</li> </ul>	<ul style="list-style-type: none"> <li>Use a range of drawing skills, discussion, prototypes, patterns pieces and computer-aided design to plan and communicate ideas</li> <li>Start to generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes</li> <li>Produce ideas, considering research of similar products</li> </ul>	<ul style="list-style-type: none"> <li>Use a range of drawing skills, discussion, prototypes, patterns pieces and computer-aided design to plan ideas</li> <li>Generate, develop, model and communicate innovative ideas through discussion, annotated sketches, diagrams and prototypes</li> <li>Generate a range of innovative ideas drawing on research</li> <li>Explain how their product will appeal to the intended audience</li> </ul>
<p><b>Greater Depth in Designing</b></p>	<ul style="list-style-type: none"> <li>Suggest a refinement or modification</li> <li>When planning, explain their choice of materials and components including function and aesthetics</li> </ul>	<ul style="list-style-type: none"> <li>Suggest a refinement or modification</li> <li>Consider how to present their product in an interesting way</li> </ul>	<ul style="list-style-type: none"> <li>A creative response to a design brief / problem</li> <li>Suggest some alternative plans and say what the good points and drawbacks are about each</li> </ul>	<ul style="list-style-type: none"> <li>A creative response to a design brief / problem</li> <li>Show consideration to culture and society in a design</li> <li>Suggest ideas about how their product could be sold</li> <li>Work within a given budget</li> </ul>

## Making

<p><b>Planning</b></p>	<ul style="list-style-type: none"> <li>• Start to order the main stages of making a product</li> <li>• Select tools, equipment, materials and components</li> <li>• Know to make drawings with labels when designing</li> <li>• When planning, explain their choice of materials and components</li> </ul>	<ul style="list-style-type: none"> <li>• Order the main stages of making</li> <li>• Select from a range of tools, equipment, materials and components and explain their choices</li> <li>• When planning, explain their choice of materials and components according to function and aesthetic</li> <li>• With more confidence, make labelled drawings of their design</li> <li>• Produce a plan and explain it to others</li> </ul>	<ul style="list-style-type: none"> <li>• Formulate step-by-step plans.</li> <li>• Select suitable tools, equipment, materials and components from own choice and be able to explain those choices</li> <li>• With growing confidence, select appropriate materials, tools and techniques</li> <li>• Use a range of drawing skills, discussion, prototypes, patterns pieces and, where appropriate, computers</li> <li>• Make labelled drawings showing specific features</li> </ul>	<ul style="list-style-type: none"> <li>• Formulate lists of resources and step-by-step plans</li> <li>• Select suitable tools, equipment, materials and components and explain their choices</li> <li>• Suggest alternative methods of making if the first attempts fail</li> <li>• Identify the strengths and areas for development in their ideas and products</li> <li>• Follow and refine their initial plan if necessary</li> <li>• Convincingly justify their plan to someone else</li> </ul>
<p><b>Practical skills and techniques</b></p>	<ul style="list-style-type: none"> <li>• With guidance, follow procedures for safety and hygiene</li> <li>• Select tools and techniques for making their product i.e. construction materials, textiles, food ingredients, mechanical components</li> <li>• Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement</li> <li>• Measure, mark out, cut, score and assemble components with some accuracy</li> <li>• Start to work safely and accurately with a range of simple tools and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Follow procedures for safety and hygiene.</li> <li>• Select a wider range of tools and techniques for making their product safely</li> <li>• Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques</li> <li>• Understand how to reinforce and strengthen a 3D framework</li> <li>• Sew, using a range of different stitches</li> <li>• Start to measure, tape or pin, cut and join fabric with some accuracy</li> <li>• Measure carefully and show initiative to check so as not to make mistakes</li> <li>• Persevere with their product even</li> </ul>	<ul style="list-style-type: none"> <li>• Follow procedures for safety and hygiene</li> <li>• Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately and safely</li> <li>• With growing confidence, apply a range of finishing techniques, including those from art and design</li> <li>• Select from and use a wider range of materials and components, according to their functional properties and aesthetic qualities</li> <li>• Understand that mechanical and electrical systems have an input process and output</li> <li>• Begin to measure and mark out more accurately</li> </ul>	<ul style="list-style-type: none"> <li>• Follow procedures for safety and hygiene</li> <li>• Confidently select appropriate tools, materials, components and techniques and use them safely and accurately</li> <li>• Assemble components to make working models</li> <li>• Aim to make and to achieve a quality product</li> <li>• With confidence pin, sew and stitch materials together to create a product</li> <li>• Make modifications as they go along</li> <li>• Understand how mechanical systems such as cams or pulleys or gears create movement</li> </ul>

	<ul style="list-style-type: none"> <li>• Attempt to make sure that their product looks attractive</li> <li>• Make choices of material both for its appearance and qualities</li> <li>• Make a product which uses mechanical components</li> <li>• Create and use simple pulleys, levers and linkages</li> </ul>	<p>though their original idea might not have worked</p>	<ul style="list-style-type: none"> <li>• With growing confidence cut and join with accuracy to ensure a good-quality finish to the product</li> <li>• Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT</li> <li>• Demonstrate motivation/perseverance to refine and improve their products</li> <li>• Create a 3D product using a range of materials and techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Know how electrical circuits and components can be used to create functional products</li> <li>• Know how to reinforce and strengthen a 3D framework</li> <li>• Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment</li> <li>• Combine fabric to make a high quality product for a purpose</li> <li>• Make decisions and select the most appropriate mechanical system for a particular purpose</li> <li>• Accurately apply a range of finishing techniques, including those from art and design</li> </ul>
<p><b>Greater Depth in Making</b></p>	<ul style="list-style-type: none"> <li>• Accurate, precise and high quality finish</li> <li>• Try alternative ways of fixing something if the first attempt is not successful</li> </ul>	<ul style="list-style-type: none"> <li>• Accurate, precise and high quality finish</li> </ul>	<ul style="list-style-type: none"> <li>• Accurate, precise and high quality finish</li> </ul>	<ul style="list-style-type: none"> <li>• Accurate, precise and high quality finish</li> </ul>

## Evaluating

<p><b>Own ideas and products</b></p>	<ul style="list-style-type: none"> <li>• Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose</li> <li>• Suggest some improvements and say what was good and not so good about their original design</li> <li>• Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate their work both during and at the end of the assignment, against their design criteria, thinking of both appearance and the way it works</li> <li>• Be able to consider the views of others to evaluate and improve their product</li> <li>• Suggest some improvements and say what was good and not so good about their original design</li> </ul>	<ul style="list-style-type: none"> <li>• Start to evaluate a product against the original design specification and by carrying out tests</li> <li>• Evaluate their work both during and at the end of the assignment</li> <li>• Begin to seek evaluation from others</li> <li>• Evaluate appearance and function against original criteria</li> <li>• Evaluate their products by carrying out appropriate tests</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate product, identifying strengths and areas to develop in their ideas and products against their original design specification</li> <li>• Consider the views of others to make improvements</li> <li>• Evaluate their work both during and at the end of the assignment</li> <li>• Test and evaluate their final product to see if it meets all of the design criteria</li> <li>• Justify why they selected specific materials</li> </ul>
<p><b>Greater Depth in Evaluating</b></p>	<ul style="list-style-type: none"> <li>• Can make judgements about their products and ideas against their design criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Can critique a design and suggest purposeful adaptations to meet a specific need</li> </ul>	<ul style="list-style-type: none"> <li>• To think deeply and critically about other products and making an improvement to their design as they go</li> </ul>	<ul style="list-style-type: none"> <li>• To think deeply and critically about other products and continuously improve their design as they go based on feedback from others and their own ideas</li> </ul>

## Cooking and nutrition

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.