



HAILEY HALL SCHOOL

Believe | Strive | Achieve

Hailey Hall School
Design & Technology
Curriculum Map

Design & Technology Curriculum Intent

In Design & Technology our intent at Hailey Hall is to enable pupils from all backgrounds to actively contribute to the creativity, culture, wealth and well-being of themselves. We teach pupils how to take managed creative risks and so become more resourceful, innovative, enterprising and capable. Pupils will develop a critical understanding of the impact of design and technology on daily life and the wider world. Design and Technology encourages our pupils to learn to think and intervene creatively to solve problems both as individuals and as members of a team.

Additionally, we wish to provide excellent opportunities for pupils to develop and apply value judgments of an aesthetic, economic, moral, social, and a technical nature both in their own designing and when evaluating the work of others.

Schemes of Work

All schemes of work are mapped against the national curriculum for D&T and are taught on the principal of interleaving where possible. Core skills and knowledge are built upon and links between topics are made in order to cement learning and give students a more holistic understanding of the subject.

The DT curriculum is planned to enable all pupils to develop skills in the following areas:

- To develop an understanding of health and safety
- To gain a range of practical DT skills
- To understand the impact people and products have on the environment
- To gain a wider understanding of the world around us and the impact people and products can have on this

We aim to, wherever possible, link work to other disciplines such as mathematics, science, computing and art. The pupils are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness. In doing so they are encouraged to become innovators and risk-takers.

Throughout our programs of study, every attempt is made to make explicit links to careers and the world of work. In addition to subject specific links, we aim to explicitly reinforce the skills and aptitudes which support what employers say are important in the workplace;

- Aiming high, staying positive and resilience
- Communication skills (listening, speaking, presenting)
- Teamwork and problem solving,
- Creativity and thinking skills
- Self-management and leadership
- The British values of democracy

The British values of democracy, the rule of law, individual liberty, and mutual respect of those with different faiths and beliefs are taught explicitly and reinforced in the way in which the school operates.

Year 7 Resistant Materials

Why this subject is important:

- It helps you to demonstrate your design and technology capability.
- It helps you to design and make original, creative products
- It allows you to work with a range of materials.
- It helps you to explore and investigate different products.
- It helps you to carry out individual, original research.

What you will learn:

Unit name	Topics	Skills and understanding	Skills: Curriculum links
Term / Unit: Autumn	Tangram Project	<ul style="list-style-type: none"> • Record a creative and diverse range of formal elements to meet the requirements of specialist briefs • Explore different geometric shapes and how they can be used to form a puzzle. • Explore what finishes are and their importance in terms of aesthetics. 	<p>Year 8 Pewter key ring - create imaginative outcomes in response to the qualities and techniques relating to a selected material. Create a good quality finish on a specialist material.</p> <p>Year 8 Kite – display a range of visual formal elements within a range of proposed ideas for a kite.</p> <p>Year 8 Clock – respond to a client brief for a clock and raise specification points to test their product against. Create a finish on the surface of each piece of material to convey the aesthetics of their design.</p>
Term / Unit: Spring	Bird box project	<ul style="list-style-type: none"> • Independently select a range of wood based shaping techniques, equipment and processes to create moving parts within a product. • To research forces, record a range of formal elements to meet the requirements of a specification. 	<p>Year 8 Phone stand – use specialist materials to create a product against specification and client criteria.</p> <p>Year 8 Pewter key ring casting – work within a size and shape that will be successful to cast a keyring.</p> <p>Year 9 Automaton – plan an idea to exploit the qualities produced by using a combination of hand tools and machine devices. Explore the characteristics of MDF to create a range of cams.</p>

			Year 9 Dragster – to record a creative and diverse range of proposed ideas for the design of a dragster.
Term/ Unit: Summer/	Kite Project	<ul style="list-style-type: none"> Independently select specialist materials, equipment and processes to create imaginative kite designs that meet the requirements of client briefs. Record a creative and diverse range of formal elements to meet the requirements of specialist briefs. 	<p>Year 8 Clock – test a product to ensure it fully functions making any modifications and refinements as the need arises from this process.</p> <p>Year 9 Rocket – exploit a range of formal elements to propose a range of designs for a rocket in line with client requirements and specification developed in response to a brief.</p>

How you will be assessed:

Your work will be marked regularly against the relevant Life Without Levels Grid and targets will be set for progression.

How parents / carers can help:

1. Talk to your child about what they are learning in lessons, perhaps getting them to teach you what they have been learning.
3. Encourage your child to use the internet if he has access to this to do research.
4. Encourage your child to revise each week for examinations.
5. Ensure your child meets all the coursework deadlines.
7. Provide them with a quiet place to do homework and revision

Useful website and details of course books:

www.bcbitesize.co.uk
www.technologypupil.com
www.designandtech.com
www.dtonline.org

Progression routes and career opportunities

College.
Sixth form.

Who to contact and how if you have a query regarding your child

Name	Position	Email Address	Telephone
Ms LA Fraser McPherson	Teacher of D&T	lmcpherson@haileyhall.herts.sch.uk	01992 465208

Year 8 Resistant Materials Technology

Why this subject is important:

- It helps you to demonstrate your design and technology capability.
- It helps you to design and make original, creative products
- It allows you to work with a range of materials.
- It helps you to explore and investigate different products.
- It helps you to carry out individual, original research.

What you will learn:

Unit name	Topics	Skills and understanding	Intent (Rationale)
Term/ Unit: Autumn	Pewter Casting Project	<ul style="list-style-type: none"> • Research the casting process and the qualities of pewter. Watch the process of casting once they have experienced making a mould and its requirements so that a casting can be successful. • Exploring the application of a finish on resulting edges by using a range of filing techniques with the application of a fine finish using an abrasive paper. 	<p>Year 9 Rocket Project - develop manufacturing skills making refinements to improve performance after each testing stage.</p> <p>Year 8 Phone Stand – creating a good quality finish by exploiting materials characteristics.</p>
Term/ Unit: Spring	Clock Project	<ul style="list-style-type: none"> • Consider specific client requirements about where a clock would be required and visual appearance in terms of theme, colour scheme and size. • Independently select a diverse range of specialist materials, techniques, equipment and processes making modifications as work progresses to ensure that the clock mechanism can be fitted and tested appropriately. 	<p>Year 9 Automaton Project - continue to develop hand and machine skills to shape wood based materials with the consideration of moving parts and contributing forces.</p>
Term/ Unit: Summer/	Phone stand	<ul style="list-style-type: none"> • Generate designs that meet a specification for a phone stand inclusive of aesthetics and the ergonomics of usage. • Exploit the characteristics of specialist materials, techniques, 	<p>Year 9 Dragster Project - select and combine a more complex range of materials.</p> <p>Year 9 Automaton -</p>

		equipment and processes relating to acrylic plastic.	further develop skills in balancing aesthetics against the usability of a product.
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Promoting British Values:

Pupils develop their self-knowledge, self-esteem and self-confidence.
Pupils acquire a broad general knowledge of and respect for public institutions and services in Britain.
Pupils develop respect for themselves and learn to respect other people.
Pupils develop the skills to evaluate the values and arguments of people wanting their support or their vote.

How you will be assessed:

Throughout the term pupils will be regularly assessed against specific Life after Levels criteria.

How parents / carers can help:

1. Talk to your child about what they are learning in lessons, perhaps getting them to teach you what they have been learning.
3. Encourage your child to use the internet if he has access to this to do research.
4. Encourage your child to revise each week for examinations.
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Progression routes and career opportunities:

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Sixth form.

Who to contact and how if you have a query regarding your child:

Name	Position	Email Address	Telephone
Ms LA Fraser McPherson	Teacher of D&T	lmcpherson@haileyhall.herts.sch.uk	01992 465208

Year 9: Resistant Materials Technology

Why this subject is important:

- It helps you to demonstrate your design and technology capability.
- It helps you to design and make original, creative products
- It allows you to work with a range of materials.
- It helps you to explore and investigate different products.
- It helps you to carry out individual, original research.

What you will learn:

Unit name	Topics	Skills and understanding	Curriculum Links
Term/ Unit: Autumn	Dragster Project	<ul style="list-style-type: none"> • Independently select a diverse range of specialist materials, techniques, equipment and processes to create imaginative outcomes that meet the requirements of client briefs • Confidently develop and exploit the characteristics of specialist materials, techniques, equipment and processes • Record a creative and diverse range of formal elements to meet the requirements of specialist briefs • Use specialist materials, techniques, equipment and processes in response to client briefs • Project Specific: • Understand simple electronics – series and parallel circuits • Understand how to use soldering equipment safely. • Understand the principles of development. • Understand how gear ratios can affect the speed of a vehicle 	<p>Students who choose to continue with the subject can opt to study towards:</p> <p>NCFE Level 2 Certificate in Creative Studies: Craft</p> <p>This is a 2-year course</p> <p>Mandatory units</p> <ol style="list-style-type: none"> 1. Exploring Craft and Enterprise Skills (H/505/2773) 2. Research and Develop Design Ideas for Craft Items (K/505/2774) 3. Respond to a Craft Brief (M/505/2775) 4. Produce Final Craft Work (T/505/2776) <p>It is expected that the 4 units be split over years 10 and 11.</p>

<p>Term/ Unit: Spring</p>	<p>Automation Project</p>	<ul style="list-style-type: none"> • Independently select a diverse range of specialist materials, techniques, equipment and processes to create imaginative outcomes that meet the requirements of client briefs • Confidently develop and exploit the characteristics of specialist materials, techniques, equipment and processes • Record a creative and diverse range of formal elements to meet the requirements of specialist briefs • Use specialist materials, techniques, equipment and processes in response to client briefs • Project Specific: • Understand how CAMS can transfer movement • Understand how Computer Aided Manufacture can assist the designer 	<p>Students who choose to continue with the subject can opt to study towards:</p> <p>NCFE Level 2 Certificate in Creative Studies: Craft</p> <p>This is a 2-year course</p> <p>Mandatory units Exploring Craft and Enterprise Skills (H/505/2773) Research and Develop Design Ideas for Craft Items (K/505/2774) Respond to a Craft Brief (M/505/2775) Produce Final Craft Work (T/505/2776)</p> <p>It is expected that the 4 units be split over years 10 and 11</p>
<p>Term/ Unit: Summer/</p>	<p>Rocket Project</p>	<ul style="list-style-type: none"> • Independently select a diverse range of specialist materials, techniques, equipment and processes to create imaginative outcomes that meet the requirements of client briefs • Develop and exploit the characteristics of specialist materials, techniques, equipment and processes • Record a creative and diverse range of formal elements to meet the requirements of specialist briefs • Use specialist materials, techniques, equipment and processes in response to client briefs • Project Specific: • Understand the principles of development • Understand the principles of QA + QC 	<p>Students who choose to continue with the subject can opt to study towards:</p> <p>NCFE Level 2 Certificate in Creative Studies: Craft</p> <p>This is a 2-year course</p> <p>Mandatory units Exploring Craft and Enterprise Skills (H/505/2773) Research and Develop Design Ideas for Craft Items (K/505/2774) Respond to a Craft Brief (M/505/2775) Produce Final Craft Work (T/505/2776)</p> <p>It is expected that the 4 units be split over years 10 and 11.</p>

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Promoting British Values:

Pupils develop their self-knowledge, self-esteem and self-confidence.
 Pupils acquire a broad general knowledge of and respect for public institutions and services in Britain.
 Pupils develop respect for themselves and learn to respect other people.
 Pupils develop the skills to evaluate the values and arguments of people wanting their support or their vote.

How you will be assessed:

Throughout the term pupils will be regularly assessed against Life after Levels criteria with specific design and make strands, this culminates in an overall grade on all the theory and practical work that has been completed.

How parents / carers can help:

1. Talk to your child about what they are learning in lessons, perhaps getting them to teach you what they have been learning.
2. Encourage your child to use the internet if he has access to this to do research.
3. Encourage your child to revise each week for examinations.
4. Ensure your child meets all the coursework deadlines.
5. Provide them with a quiet place to do homework and revision

Useful website and details of course books:

- www.bcbitesize.co.uk
- www.technologypupil.com
- www.designandtech.com
- www.dtonline.org

Progression routes and career opportunities:

College.
 Sixth form.

Who to contact and how if you have a query regarding your child:

Name	Position	Email Address	Telephone
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Ms LA Fraser McPherson	Teacher of D&T	lmcpherson@haileyhall.herts.sch.uk	01992 465208
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Year 10 NCFE Level 2 Craft

Why this subject is important:

- It helps you to demonstrate your design and technology capability.
- It helps you to design and make original, creative products.
- It allows you to work with a range of materials.
- It helps you to explore and investigate different products.
- It helps you to carry out individual, original research.

What you will learn:

Unit name	Topics	Skills and understanding	Skills - Curriculum Links
Term/ Unit: Autumn	<ul style="list-style-type: none"> • Understanding different terminology and using skills that they will need to use during their controlled assessment and exam. • How to use a wide range of media/materials. • How to use different techniques in Design Technology. • Designing products involves analysing existing products. • Disassembly. • Customer profiling. • Methods used to generate ideas and the importance of communication. • Moving from 2D to 3D and of different materials. • Sources of wood and plastic and primary processes 	<ul style="list-style-type: none"> • Understanding how to use a variety of materials and techniques • Understanding the different pathways in Design Technology • Understanding how a good finish can improve the quality of your end product. • Understanding the needs of the target user. • Understanding how to analyse products in a structured way • Understanding how to disassemble a product and to produce an exploded drawing. • Understanding how to locate and target specific audiences. • Understanding how to communicate, modify, refine and improve design ideas. 	<p>Unit 01: Use materials, tools and equipment to develop craft techniques (M/506/2674)</p> <p>1.1 Describe the properties of available materials for a craft item or items</p> <p>1.2 Select suitable materials and techniques and give reasons for choices</p> <p>1.3 Use appropriate tools and equipment for selected techniques</p> <p>1.4 Develop technical skills in craft to make effective use of materials, techniques and resources</p> <p>1.5 Maintain a safe working environment by</p>

	<p>involved in conversion to workable materials.</p> <ul style="list-style-type: none"> • Scales of Production. • Life cycle and the impact of a wide range of products. 	<ul style="list-style-type: none"> • Understanding how to construct a model that is a development of the design process. • Understanding how the work of standard agencies affects product design, manufacture and testing. 	<p>ensuring safe use of tools and equipment, materials and resources and the learning environment</p>
<p>Term/ Unit: Spring</p>	<ul style="list-style-type: none"> • Understanding different terminology and using skills that they will need to use during their controlled assessment. • Technical drawing • CAD • CAM • Materials Investigation • Understanding about health and safety in more detail. • Understanding how to use a variety of materials and techniques • Understanding the different pathways in design • Understanding how a good finish can improve the quality of your end product • Understanding the needs of the target user • Understanding how to analyse products in a structured way 	<ul style="list-style-type: none"> • To be able to explore different materials to express ideas relating to a theme • To understand how to use a theme or reference point to develop original works • To understand how to use individual and mixed media to communicate ideas. • To understand how to use a theme or reference point to develop original works 	<p>Unit 01: Use materials, tools and equipment to develop craft techniques (M/506/2674)</p> <p>1.4 Develop technical skills in craft to make effective use of materials, techniques and resources</p> <p>1.5 Maintain a safe working environment by ensuring safe use of tools and equipment, materials and resources and the learning environment</p>
<p>Term/ Unit: Summer</p>	<ul style="list-style-type: none"> • Researching the available employment opportunities within the craft sector • What is an enterprising individual, what are the key characteristics. • Strengths and weaknesses within the craft sector • Career pathways within the craft sector 	<ul style="list-style-type: none"> • Understanding how to carry out relevant research and analyse it to form a clear opinion • Be able to form a specification including essential and desirable criteria. • Understanding how to locate and target specific audiences. • Understanding the different pathways in Design Technology 	<p>Unit 02: Investigate creative enterprise and employment opportunities (K/506/2673)</p> <p>2.1 Explore employment opportunities within a chosen craft area</p> <p>2.2 Describe the characteristics of an enterprising individual in a chosen craft area</p>

			<p>2.3 Identify own strengths and areas for development within a chosen craft area</p> <p>2.4 Produce an action plan for personal development/career aspirations</p>
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How you will be assessed:

There are 4 mandatory Units (25% of final marks each)

Unit 1: Use materials, tools and equipment to develop craft techniques (M/506/2674)
Unit 2: Investigate creative enterprise and employment opportunities (K/506/2673)
Unit 3: Develop craft ideas (H/506/2672)
Unit 4: Create, present and evaluate final craft item (T/506/2675)

Grades awarded: Level 2 Pass.

The controlled assessment will be internally assessed and externally moderated. Your teacher will assess you at the end of each unit.

The final grade is calculated in the following way:

The grades from your controlled assessments will be put together and create an overall result.

From this, you will be awarded an overall grade

How parents/carers can help:

1. Talk to your child about what they are learning in lessons, perhaps getting them to teach you what they have been learning.
2. Encourage your child to use the internet if he has access to this to do research.
3. Encourage your child to revise each week for examinations.
4. Ensure your child meets all the coursework deadlines.
5. Provide them with a quiet place to do home learning and revision

Useful website and details of course books:

- www.bbcbitesize.co.uk
- www.ncfe.org.uk – Examination board
- www.technologypupil.com
- www.designandtech.com
- www.dtonline.org

Progression routes and career opportunities:

College.
Sixth form.

Who to contact and how if you have a query regarding your child:

Name	Position	Email Address	Telephone
Mr Barnaby Aldiss	Deputy Headteacher	baldiss@haileyhall.herts.sch.uk	01992 465208

Year 11 NCFE Level 2 Craft

Why this subject is important:

- It helps you to demonstrate your design and technology capability.
- It helps you to design and make original, creative products.
- It allows you to work with a range of materials.
- It helps you to explore and investigate different products.
- It helps you to carry out individual, original research.

What you will learn:

Unit name	Topics	Skills and understanding	Skills - Curriculum Links
Term/ Unit: Autumn	<ul style="list-style-type: none"> • Understanding different terminology and using skills that they will need to use <ul style="list-style-type: none"> • How to use a wide range of media/materials. • How to use different techniques in Design Technology. • Designing products involves analysing existing products. • Disassembly. • Customer profiling. • Methods used to generate ideas and the importance of communication. • Moving from 2D to 3D and of different materials. • Sources of wood and plastic and primary processes involved in 	<ul style="list-style-type: none"> • Understanding how to use a variety of materials and techniques • Understanding the different pathways in Design Technology • Understanding how a good finish can improve the quality of your end product. • Understanding the needs of the target user. • Understanding how to analyse products in a structured way • Understanding how to disassemble a product and to produce an exploded drawing. • Understanding how to locate and target specific audiences. • Understanding how to communicate, modify, refine and 	Unit 03: Develop craft ideas (H/506/2672) 3.1 - Use a range of different sources to develop craft ideas - Inspiration Page. 3.1 - Use a range of different sources to develop craft ideas - Design Features. 3.2 - Develop visual language to communicate craft ideas - Initial Ideas. 3.3 - Use feedback and evaluation of own work to develop craft ideas – Models. 3.4 - Adapt craft ideas in response to feedback and evaluation of own work

	<p>conversion to workable materials.</p> <ul style="list-style-type: none"> • Scales of Production. • Life cycle and the impact of a wide range of products. 	<p>improve design ideas.</p> <ul style="list-style-type: none"> • Understanding how to construct a model that is a development of the design process. • Understanding how the work of standard agencies affects product design, manufacture and testing. 	<p>3.4 - Adapt craft ideas in response to feedback and evaluation of own work - Cutting List + Construction Joints.</p> <p>3.5 - Select preferred craft idea giving reasons for choice.</p> <p>3.6 - Maintain a safe working environment.</p>
<p>Term/ Unit: Spring</p>	<ul style="list-style-type: none"> • Understanding different terminology and using skills that they will need to use • Technical drawing • CAD • CAM • Materials Investigation • Understanding about health and safety in more detail. • Understanding how to use a variety of materials and techniques • Understanding the different pathways in design • Understanding how a good finish can improve the quality of your end product • Understanding the needs of the target user • Understanding how to analyse products in a structured way 	<ul style="list-style-type: none"> • To be able to explore different materials to express ideas relating to a theme • To understand how to use a theme or reference point to develop original works • To understand how to use individual and mixed media to communicate ideas. • To understand how to use a theme or reference point to develop original works 	<p>Unit 03: Develop craft ideas (H/506/2672)</p> <p>3.4 - Adapt craft ideas in response to feedback and evaluation of own work - Cutting List + Construction Joints.</p> <p>3.5 - Select preferred craft idea giving reasons for choice.</p> <p>3.6 - Maintain a safe working environment.</p> <p>Unit 04: Create, present and evaluate the final craft item (T/506/2675)</p> <p>4.1 - Use chosen idea to create a production plan.</p> <p>4.2 - Use selected tools, materials, equipment and techniques to produce final craftwork.</p>
<p>Term/ Unit: Summer</p>	<ul style="list-style-type: none"> • Coursework selection pupils will complete their practical in this area during this term. 	<ul style="list-style-type: none"> • Be able to demonstrate safe use of tools machinery and equipment. 	<p>Unit 04: Create, present and evaluate final craft item (T/506/2675)</p>

		<ul style="list-style-type: none"> • Understand the characteristics and properties of materials and use them to their advantage. • Demonstrate a wide knowledge of joinery and fixing methods. • Select appropriate finishes that will protect and enhance the visual appearance of their product. • Evaluate their workshop practice and their final outcome. 	<p>4.2 - Use selected tools, materials, equipment and techniques to produce final craftwork.</p> <p>4.3 - Display craftwork in an appropriate way/setting.</p> <p>4.4 - Maintain a safe working environment.</p> <p>4.5 - Evaluate the creative process.</p> <p>4.6 - Review final craft item to identify opportunities for improvement or further development.</p>
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Promoting British Values:

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Pupils develop respect for themselves and learn to respect other people.

How you will be assessed:

There are 4 mandatory Units (25% of final marks each)

Unit 1: Use materials, tools and equipment to develop craft techniques (M/506/2674)

Unit 2: Investigate creative enterprise and employment opportunities (K/506/2673)

Unit 3: Develop craft ideas (H/506/2672)

Unit 4: Create, present and evaluate final craft item (T/506/2675)

Grades awarded: Level 2 Pass.

The controlled assessment will be internally assessed and externally moderated. Your teacher will assess you at the end of each unit.

The final grade is calculated in the following way:

The grades from your controlled assessments will be put together and create an overall result.

From this, you will be awarded an overall grade

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