Ashby School
Empowered to Learn

Curriculum Information

Key Stage 3

Design Faculty

Shaping creative and confident students who better understand themselves and the world around them

For yourself & for others

LiFE
Inspiration Innovation Integrity

Curriculum Intent

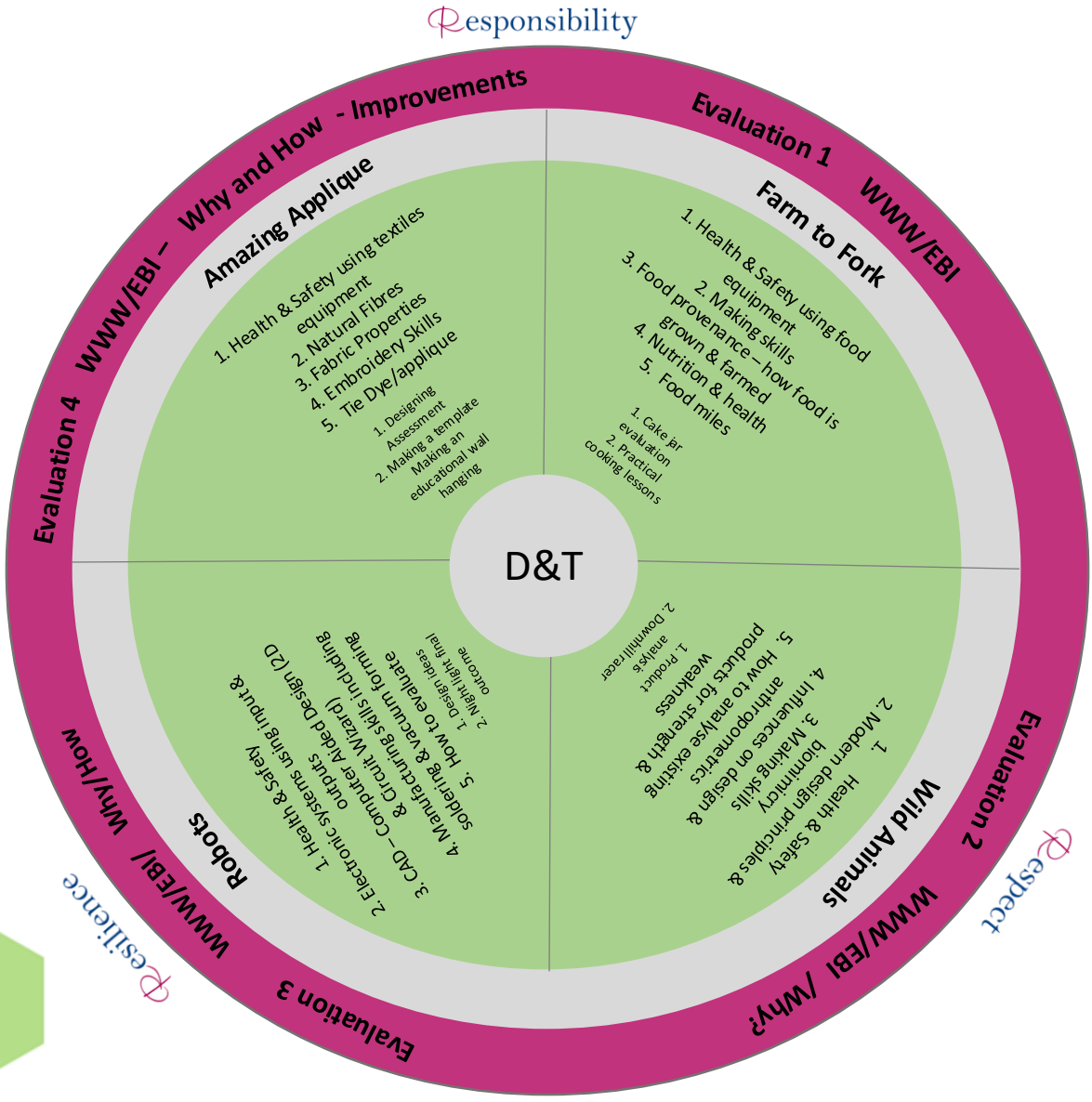
Design and Technology as Ashby School has been developed with the 'D&T learner' in mind, ensuring that students develop the skills, knowledge and understanding to:

- Show Respect to the environment they work in
- Take Responsibility to strive for high quality outcomes
- Show Resilience as problem solvers who are not afraid of making mistakes

Key Stage 3

At Ashby School we want to create a diverse curriculum which is intrinsically linked to and fully embodies our learning ethos: Respect, Resilience and Responsibility.
Our intention is to inspire our students with a love for D&T to allow them to become confident individuals with inquisitive minds who will have the courage, skills and knowledge to thrive in the 21st century.
Through the delivery of our Design Technology curriculum students are better prepared to deal with tomorrow's ever-changing world.
D&T encourages children to become independent, creative problem-solvers and thinkers as individuals and as part of a team - making positive changes to their quality of life. It enables them to identify needs and opportunities and to respond to them by developing a range of ideas and by making products and systems.
We wish to instil a curiosity within our students which means they will ask questions and seek answers when creating new ideas, acquiring new skills and draw on disciplines such as mathematics, science, engineering, computing and art.
Finally, developing our students' sense of appreciation for the design/creative industry supports them in finding their own identity as young designers, enabling them to develop a greater sense of self- awareness and affirming their own ideologies or perception of what design really is. Design and technology offers children a chance to use creative thinking and activity within a defined purpose and tangible outcome. It can be found in many of the object's children use each day and is a part of children's immediate experiences.

Year 7



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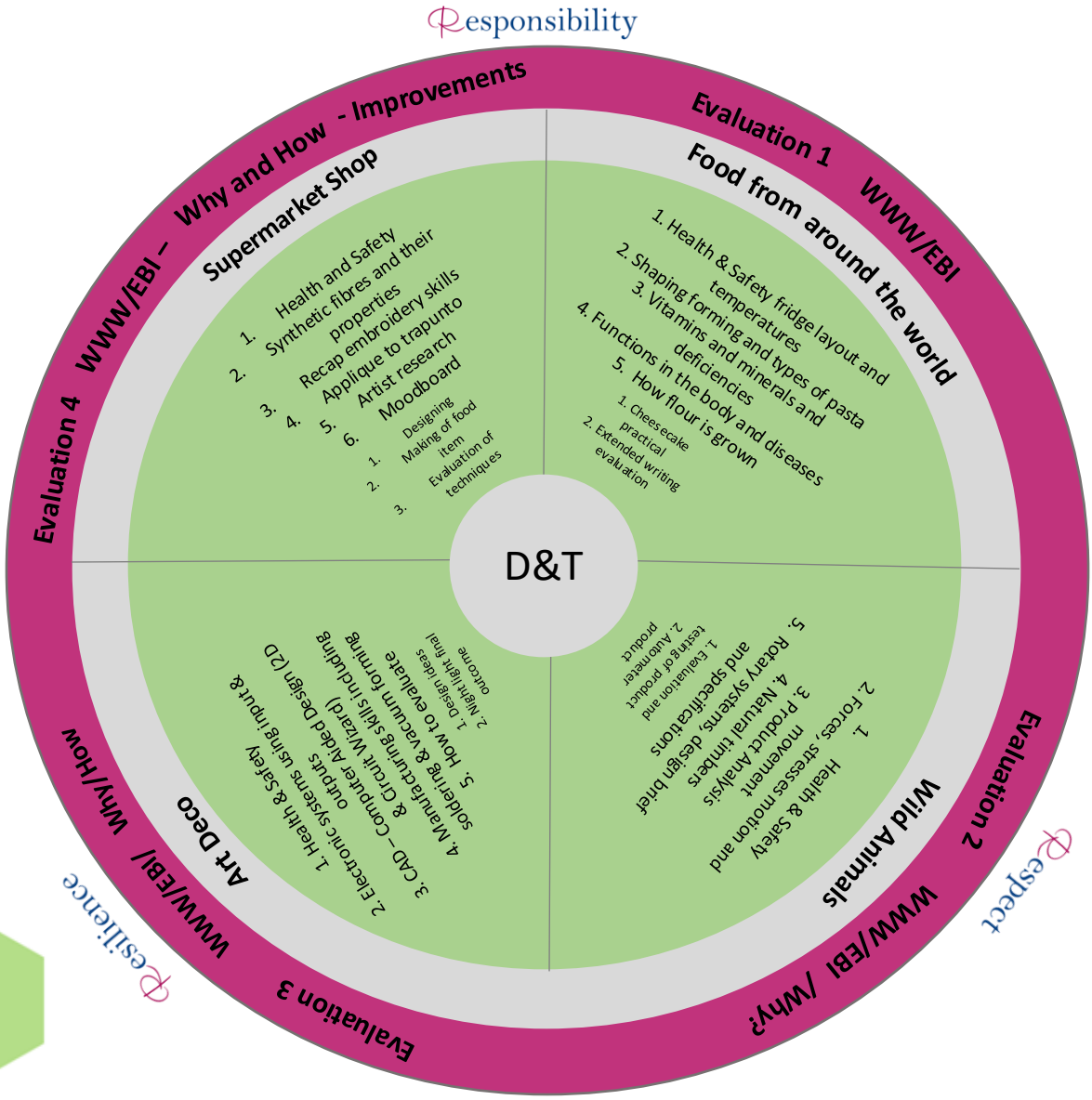
Year 8


Responsibility
Evaluation 1
WWW/EBI
Food from around the world
1. Health & Safety fridge layout and temperatures
2. Shaping forming and types of pasta
3. Vitamins and minerals and deficiencies
4. Functions in the body and diseases
5. How flour is grown
1. Cheesecake practical
2. Extended writing evaluation
Evaluation 2
WWW/EBI /Why?
Wild Animals
1. Health & Safety
2. Forces, stresses motion and movement
3. Product Analysis
4. Natural timbers
5. Rotary systems, design brief and specifications
1. Evaluation and testing of product
2. Autometer product
Evaluation 3
WWW/EBI/ Why/How
Art Deco
1. Health & Safety
2. Electronic systems using input & outputs
3. CAD – Computer Aided Design (2D & Circuit Wizard)
4. Manufacturing skills including soldering
5. How to evaluate & vacuum forming
1. Design ideas
2. Night light final outcome
Evaluation 4
WWW/EBI – Why and How - Improvements
Supermarket Shop
1. Health and Safety
2. Synthetic fibres and their properties
3. Recap embroidery skills
4. Applique to trapunto
5. Artist research
6. Moodboard
1. Designing
2. Making of food item
3. Evaluation of techniques
D&T
Resilience
Respect
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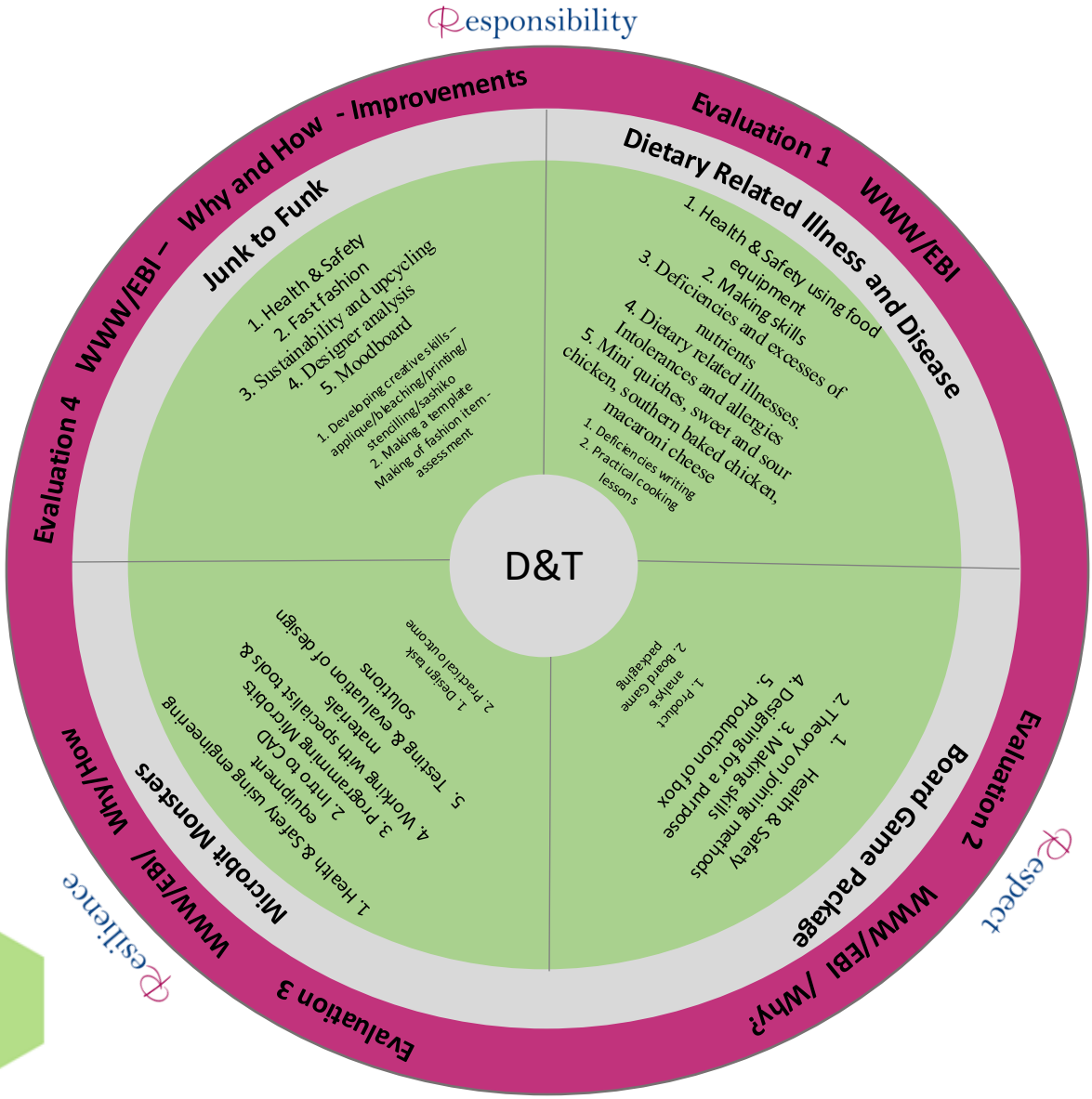
Year 9



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Key Stage 3 – Graphics

Graphics students develop their skills in both practical and theory lessons. Practical skills range from learning how to design using 2d design software which demonstrates the application of graphics theory. Students will learn how to use a range of graphical techniques to design and make a series of practical projects, learning specialist CAD software to design and laser cut a board game vacuum forming process for the plastic insert for storage.

Students learn about graphic theory, production of paper and card. Students create a range of design ideas for a given design brief and specification that will be used for the board game.

Graphics enables students to develop valuable life skills which provide an ideal foundation for either further education or employment.

Students learn resilience but also advance their knowledge on materials, techniques and processes. We encourage all students to achieve their full potential and to use their own creativity and hard work to show that anything is possible in design and technology. Students are taught by passionate subject specialists who strive to ensure that all students leave with the skills they need to embrace the challenges of an increasingly technological world.

This subject builds on KS2 learning by teaching subject specific skills. During KS3 students learn about different types of materials and manufacturing processes such as thermoforming, thermosetting plastics, laser cutting, 3d and 2d drawing techniques. This prepares for KS4, their knowledge is then developed further about a variety of materials and applications that are in the AQA specification through theory and practical work.

Themes / Key Questions	**Knowledge & Skills**
Design and make stencils	Basic Design Elements; Polymers - vacuum forming, 2d design (cad/cam), and analysis of products
Pop up cards	Papers & Boards Pop-up mechanisms 2d Design; CAD/CAM;

Key Stage 3 – Food Technology

Food technology students develop their knowledge and skills in both practical and written lessons. Key stage 3 builds on the preparation skills learnt at key stage 2 where students learn how to confidently use equipment independently in the kitchen environment.

Students develop their knowledge of nutrition, where food comes from and how it is grown and food sustainability. Students begin by utilising their health and safety and knife skills to create simple meals and snacks and then develop their skills to create more complex meals. Students apply the theoretical knowledge learnt weekly through the practical lessons and study where food comes from and how it is grown. They also look at nutrition and diets and how work hygienically and safely and the importance of controlling bacterial growth. Students have the opportunity to grow fruits and vegetables in school and to learn how they can use these in seasonal dishes.

This prepares them for KS4 where they build on this to cover food nutrition in more detail, food science, food choice, food preparation and food provenance. They then develop this further at KS5 to catering college level food preparation standard, nutritional planning for given clients and food science in industry.

The national curriculum requirements for cooking and nutrition are

- To understand and apply the principles of nutrition and health – students follow the NHS recommended Eatwell guide diagram when producing dishes
- students cook a repertoire of predominantly savoury dishes so that they can feed themselves and others a healthy and varied diet
- they become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]
- students understand the source, seasonality and characteristics of a broad range of ingredients

Themes / Key Questions	Knowledge & Skills
Farm to fork	How food is grown, farmed and produced. Seasonality, organic and food miles. Develop practical skills to be able to produce exciting dishes
World cuisine	Authentic ingredients and cultures from different countries, Religions followed and how this effects food choice. Nutrition in detail. Develop practical skills to be able to produce – spaghetti bolognaise, chicken kebabs, pizza swirls, chilled cheesecake
Dietary related illness and disease	Deficiencies and excesses of nutrients, Dietary related illnesses. Intolerances and allergies. Food waste. Develop practical skills to be able to produce – mini quiches, sweet and sour chicken, southern baked chicken, macaroni cheese

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Key Stage 3 Textiles

Textiles Technology students develop their skills in both practical and theory lessons. Practical skills range from learning how to tie dye fabric to learning how to applique and hand embroider.

Textiles Technology enables students to develop valuable life skills which provide an ideal foundation for either further education or employment.

Students learn resilience but also advance their knowledge on materials, techniques and processes. We encourage all students to achieve their full potential and to use their own creativity and hard work to show that anything is possible in design and technology. Students are taught by passionate subject specialists who strive to ensure that all students leave with the skills they need to embrace the challenges of an increasingly technological world.

This subject builds on KS2 learning by teaching subject specific skills. During KS3 students learn about different types of materials including their properties and end uses, design skills and learn about tools and equipment. This prepares for KS4, where their knowledge is then developed further and students look at a variety of textile techniques inspired by various artist and designers following the AQA art and design (textiles) specification through experimenting and developing ideas.

Themes / Key Questions	Knowledge & Skills
Sensory learning wall hanging	Natural fibres and their properties Research skills Design skills How to annotate a design idea. Practical skills using hand embroidery/tie dye and applique including using the sewing machine. Evaluation skills.
Holly Level inspired soft sculpture	Synthetic fibres and their properties Research skills Design skills How to annotate a design idea. Practical skills using applique/ Reverse applique and quilting including using the sewing machine. Evaluation skills.
Inspirational portraits	Sewing machine Printing techniques Applique Techniques Enhanced embroidery skills Artist analysis

Key Stage 3 Engineering

Engineering students develop their skills in both practical and theory lessons. Practical skills range from learning how to turn items on a lathe to learning how to construct and operate microcontrollers. Engineering enables students to develop valuable life skills which provide an ideal foundation for either further education or employment.

Students learn resilience but also advance their knowledge on materials, techniques and processes. We encourage all students to achieve their full potential and to use their own creativity and hard work to show that anything is possible within Design and Technology. Students are taught by passionate subject specialists who strive to ensure that all students leave with the skills they need to embrace the challenges of an increasingly technological world.

This subject builds on KS2 learning by teaching subject specific knowledge and practical skills. During KS3 students learn about different types of materials including smart and modern materials, design skills as well as learn about tools and equipment. This prepares for KS4 by giving them the basic grounding for all GCSE strands.

Themes / Key Questions	Knowledge & Skills
Students design and manufacture a night light.	Electronics theory. Researching and designing skills. Manufacturing skills
Pewter Casting based on Biomimicry	Theory on Biomimicry Casting and working of pewter using specialist tools CAD CAM and associated drawing packages
Microbit Monsters	Robotics Coding/programming Problem solving

Key Stage 3 Product Design

Product design students develop their skills in both practical and theory lessons. Practical skills range from learning how to use basic woodworking hand tools to learning how to operate a pillar drill and disc sander. In year 7, students use their knowledge of biomimicry and streamlining to create a downhill toy racer car. In year 8, students create moving toys which display movements in sports.

Product design enables students to develop valuable life skills which provide an ideal foundation for either further education or employment. Students learn resilience but also advance their knowledge on materials, techniques and processes. We encourage all students to achieve their full potential and to use their own creativity and hard work to show that anything is possible within Design and Technology. Students are taught by passionate subject specialists who strive to ensure that all students leave with the skills they need to embrace the challenges of an increasingly technological world.

This subject builds on KS2 learning by teaching subject specific knowledge and practical skills. During KS3 students learn about different types of materials such as man-made boards and natural timbers. They also learn design skills such as biomimicry, CAD and product analysis, as well as learn about tools and equipment. This prepares them for KS4 by giving them the basic grounding for all GCSE strands.

	Themes / Key Questions	Knowledge & Skills
YEAR 7	Wild Animals What is biomimicry? How can it be used in the design of products?	• The design process and designing for a client • How to contextualise a product using a theme. (Wild animals) • What is 'Anthropometrics' and how is it used in the design of a product. • Using 2D illustration to develop a product using data to design for a client • Types and uses of manufactured boards • Health and safety requirements of a workshop • Understanding of how to use tools and equipment • Evaluation skills
YEAR 8	Sports What are forces and stresses? How is the knowledge of forces and stresses used in the design of products?	• The design process • How to contextualise a product using a theme. (Sports) • What compression, tension, torsion, shear and bending forces are and how products are designed to withstand these forces. • What linear, reciprocating, oscillating and rotary movements are. • What CAMs, followers and gears are. • Types and uses of natural timbers • Health and safety requirements of a workshop • Understanding of how to use tools and equipment • Evaluation skills
YEAR 9	Board game packaging	• Identify target market • Research types of games • Practical work including wood joints • Vinyl stickers and design