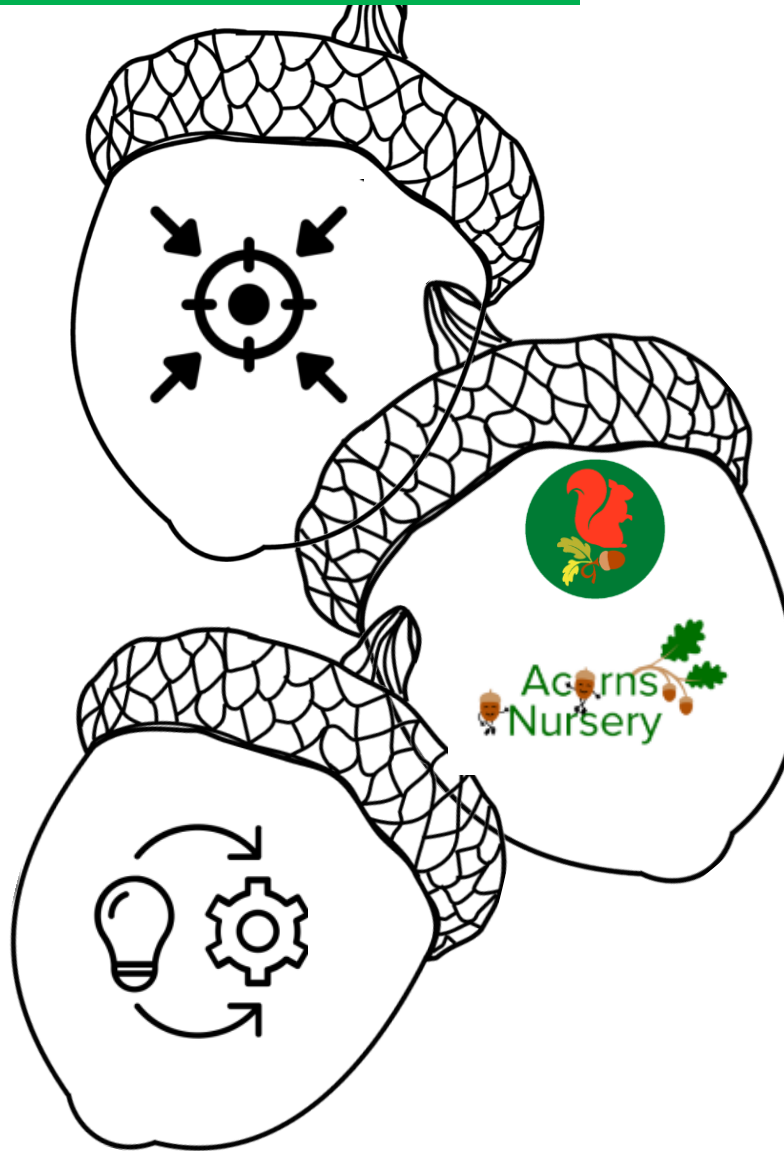


Design Technology at Hamsey Green

Curriculum intent:

Children at Hamsey Green will engage in a variety of inspiring, diligent and practical lessons to design and make products that solve real and relevant problems.. As children progress throughout the school, they will develop their skills and techniques through: food technology, construction, textiles, mechanical structures and electrical components. Throughout children's learning of DT, we aim to develop children's independency, self-confidence, creativity and a sense of achievement of the products that they have created!



Curriculum implementation:

The Design and Technology curriculum at Hamsey Green has been planned with a particular focus on the three key areas of **Design, Make** and **Evaluate**. These need to be in place in teachers' planning to ensure children's learning is genuinely design and technological in nature. They are consistent with the National Curriculum requirements and should be applied whenever children are designing and making products.

Design: Within this key area is included a pathway of considering the needs (or problem) of the user, generating initial design ideas backed by research of existing products and selection of a chosen design rationalised by the student. This includes which materials and equipment the pupil intends to use.

Make: Within this section of learning, children will be making their product. This can include working prototypes or a finished model. Children are expected to work with a wide variety of materials, learning to use an array of tools and techniques e.g. cutting, shaping, joining and finishing.

Evaluation: Children are taught to evaluate their product against age-appropriate success criteria and their initial design specification. They are taught to evaluate what has gone well within their design and making process and what they would choose to do in future. Over time, we look to help children recognise flaws within their initial designs and practical working.

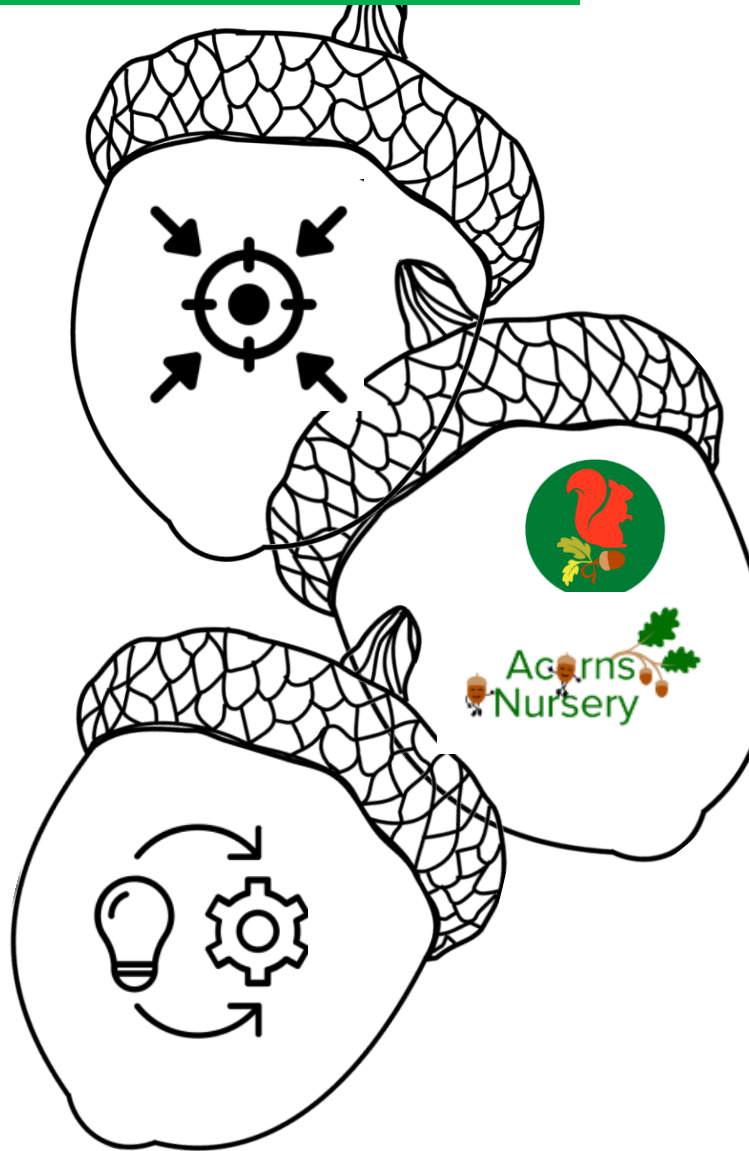
Design Technology – Designing Skills

Generating and developing ideas

Across Key Stage 1, pupils should generate ideas by drawing on their own experiences and use their knowledge of existing products to support the development of new ideas. They should be encouraged to develop and communicate their ideas through talking and drawing. To model their thinking, they should explore materials, components, and construction kits, as well as create templates and mock-ups. Where appropriate, they should also use information and communication technology (ICT) to support the development and presentation of their ideas.

Across Key Stage 2, pupils should share and clarify their ideas through discussion and begin to model their designs using prototypes and pattern pieces. They should learn to develop and communicate their ideas through annotated sketches, cross-sectional drawings, and exploded diagrams. The use of computer-aided design (CAD) should also be introduced to help them present their ideas more effectively.

In early Key Stage 2, pupils should begin to generate realistic ideas that focus on the needs of the user. They should also start making informed design decisions that take into account the availability of resources. By late Key Stage 2, pupils should be generating innovative ideas, drawing on research to inform their thinking. Their design decisions should reflect an



Understanding of context, user and purpose

Across Key Stage 1, pupils should work confidently within a range of contexts such as imaginary settings, story-based scenarios, home, school, gardens, playgrounds, the local community, industry, and the wider environment. They should be able to state what products they are designing and making, say whether their products are for themselves or for other users, and describe what their products are for. Pupils should also be able to explain how their products will work, consider how to make their products suitable for their intended users, and use simple design criteria to help develop their ideas.

Across Key Stage 2, pupils should continue to work confidently within a variety of contexts, including the home, school, leisure, culture, enterprise, industry, and the wider environment. They should be able to describe the purpose of their products and indicate the design features that will appeal to the intended users, as well as explain how particular parts of their products function.

In early Key Stage 2, pupils should begin to gather information about the needs and wants of particular individuals and groups. They should develop their own design criteria and use these to inform their ideas. In late Key Stage 2, pupils should progress further by carrying out research using surveys, interviews, questionnaires, and web-based resources. They should be able to identify the needs, wants, preferences, and values of specific individuals and groups, and develop

a simple design specification to guide their thinking and planning

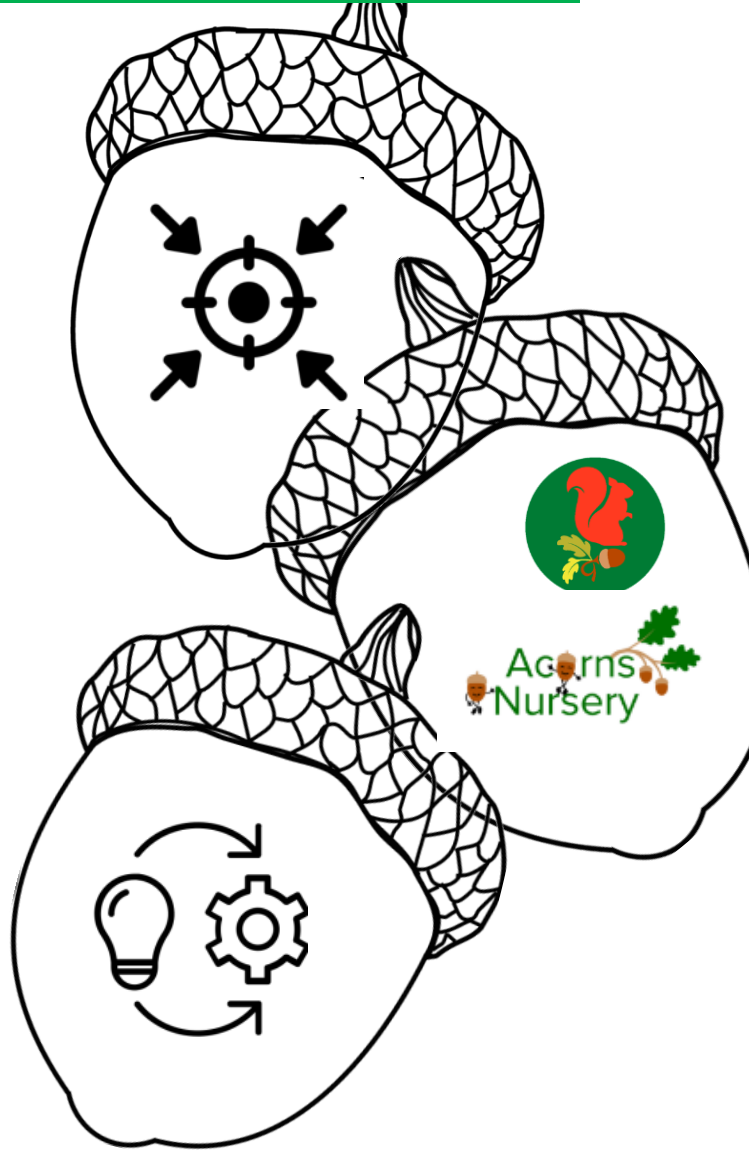
Design Technology – Making Skills

Planning

Across Key Stage 1, pupils should begin to plan by suggesting what to do next in their projects. They should select from a range of tools and equipment, explaining why they have made these choices. Additionally, they should choose materials and components based on their characteristics.

In Key Stage 2, pupils are expected to select tools and equipment that are suitable for the specific task. They should be able to explain their choices in relation to the skills and techniques they will be using. Similarly, pupils should select materials and components appropriate for the task and justify their choices by considering both the functional properties and aesthetic qualities of those materials.

In early Key Stage 2, pupils should also learn to order the main stages of making. By late Key Stage 2, they should be capable of producing detailed lists of the tools, equipment, and materials they need, as well as formulating step-by-step plans to guide the making process.



Practical skills and techniques

Across Key Stage 1, pupils should follow procedures for safety and hygiene while working with a range of materials and components, including construction materials and kits, textiles, food ingredients, and mechanical components. They will measure, mark out, cut, and shape materials and components, assemble, join, and combine them, and use finishing techniques drawn from art and design.

In Key Stage 2, pupils continue to follow safety and hygiene procedures and work with a wider range of materials and components than in Key Stage 1, which now includes electrical components alongside construction materials, textiles, food ingredients, and mechanical components. In early Key Stage 2, pupils should measure, mark out, cut, and shape materials and components with some accuracy, assemble and join these components with some precision, and apply a range of finishing techniques from art and design with increasing accuracy. By late Key Stage 2, pupils are expected to carry out these tasks with greater accuracy, using multi-step techniques and demonstrating resourcefulness when facing

practical problems.

Design Technology – Evaluating Skills

Evaluating own ideas

Across Key Stage 1, pupils are encouraged to talk about their design ideas and explain what they are making. They make simple judgements about their products and ideas by comparing them to design criteria, and suggest ways their products could be improved.

In Key Stage 2, pupils develop the ability to identify strengths and areas for improvement in their ideas and products. They also consider feedback from others, including intended users, to enhance their work.

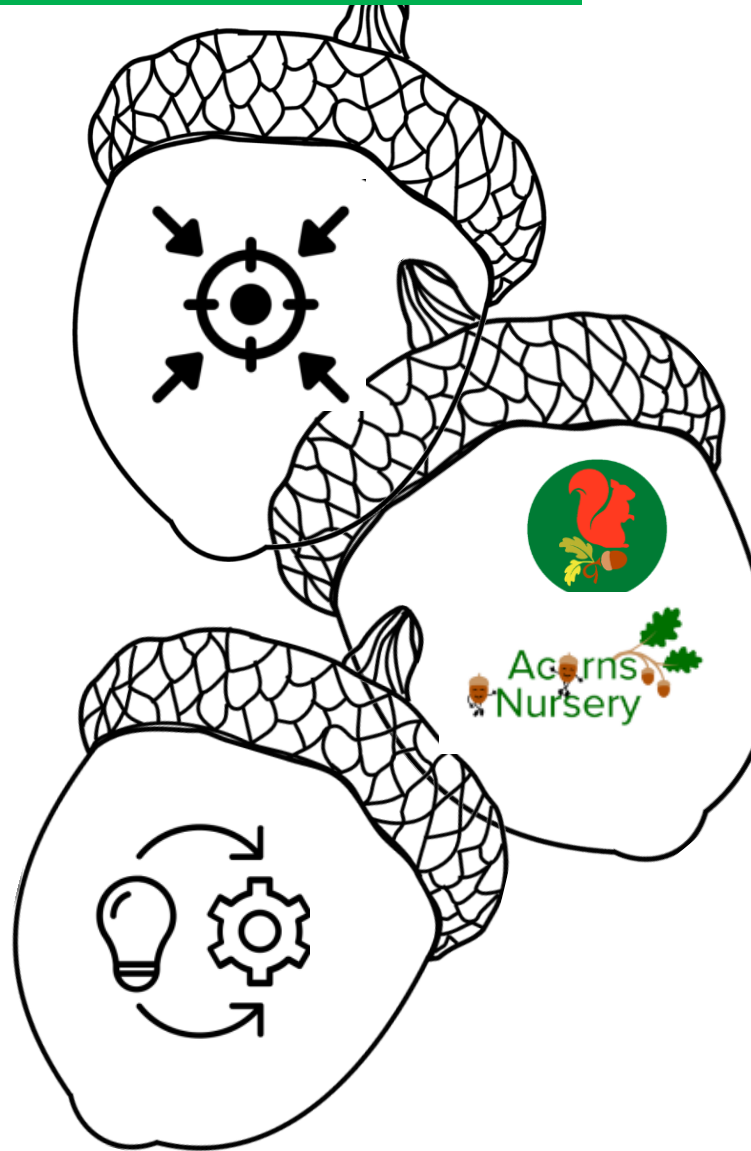
In early Key Stage 2, pupils refer back to their design criteria during the design and making process and use these criteria to evaluate their finished products. By late Key Stage 2, pupils critically evaluate the quality of the design, manufacture, and fitness for purpose of their products as they work, and assess their ideas and outcomes against their original design specifications.

Evaluating existing products

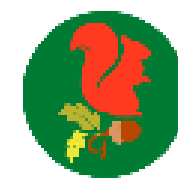
Across Key Stage 1, pupils should explore basic concepts about products, including what products are, who they are for, what their purpose is, how they work, how they are used, where they might be used, what materials they are made from, and what they like and dislike about different products.

In Key Stage 2, pupils deepen their understanding by investigating and analysing how well products have been designed and made, why particular materials have been chosen, and what methods of construction have been used. They also evaluate how well products function, how effectively they achieve their purposes, and how well they meet the needs and wants of users. Additionally, pupils learn about inventors, designers, engineers, chefs, and manufacturers who have developed ground-breaking products.

In early Key Stage 2, pupils extend their investigations to include who designed and made the products, where and when they were designed and made, and whether products can be recycled or reused. By late Key Stage 2, pupils further develop their analytical skills by considering how much products cost to make, how innovative they are, how sustainable the materials used in the products are, and what impact the products have beyond their intended purposes.



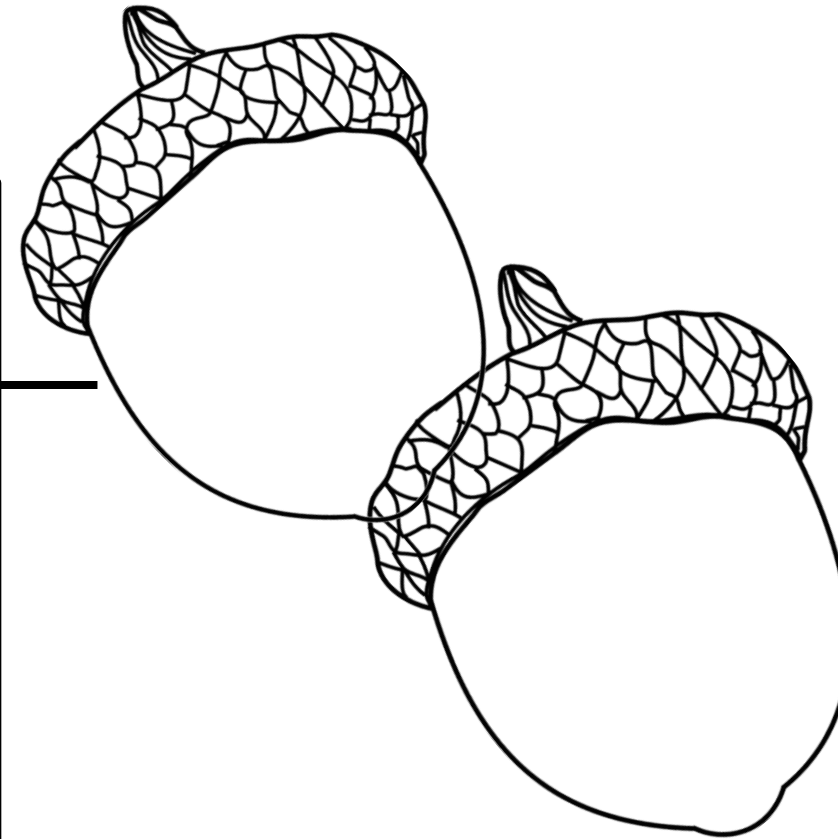
Design Technology EYFS Overview



Hamsey Green
Primary School

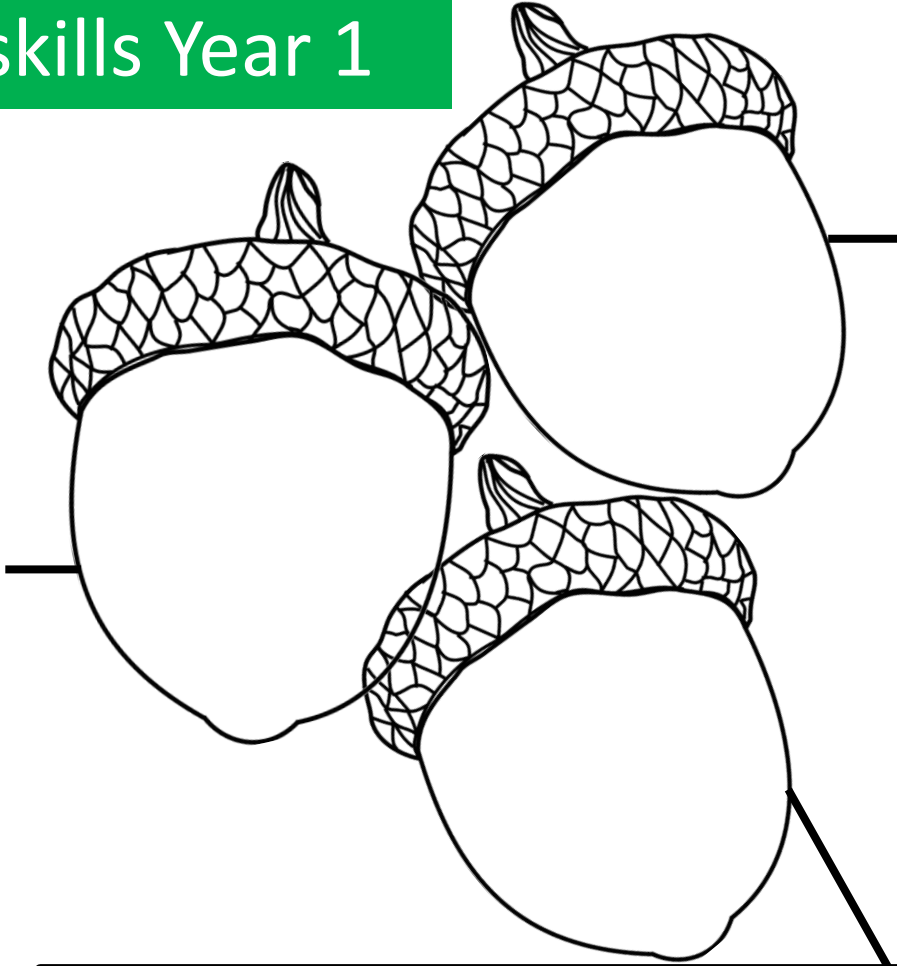


Children construct with a range of materials, thinking about and discussing what they want to make. They discuss problems and how they might be solved as they arise and then reflect on how they have achieved their aims. Children learn different techniques for joining materials, such as how to use sticky tape and glue. Children learn to use a range of materials and tools safely and with increasing independence.



Food technology focuses on hands-on activities that introduce children to food, its properties, and its role in a healthy lifestyle. These activities engage children's senses, develop their fine motor skills, and foster a positive relationship with food. Children also learn basic health and safety techniques for handling food and tools. Children also begin to learn where food comes from.

Design Technology skills Year 1



Design:
Design purposeful, functional, appealing products for themselves and other users based on design criteria.

Understand and apply the principles of a healthy and varied diet

Make:
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing.

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

Evaluate:
Evaluate their ideas and products against design criteria.

What your child will make this year:
Pop-up books, puppets, vehicles, hot air balloons, castles and fruit salad.

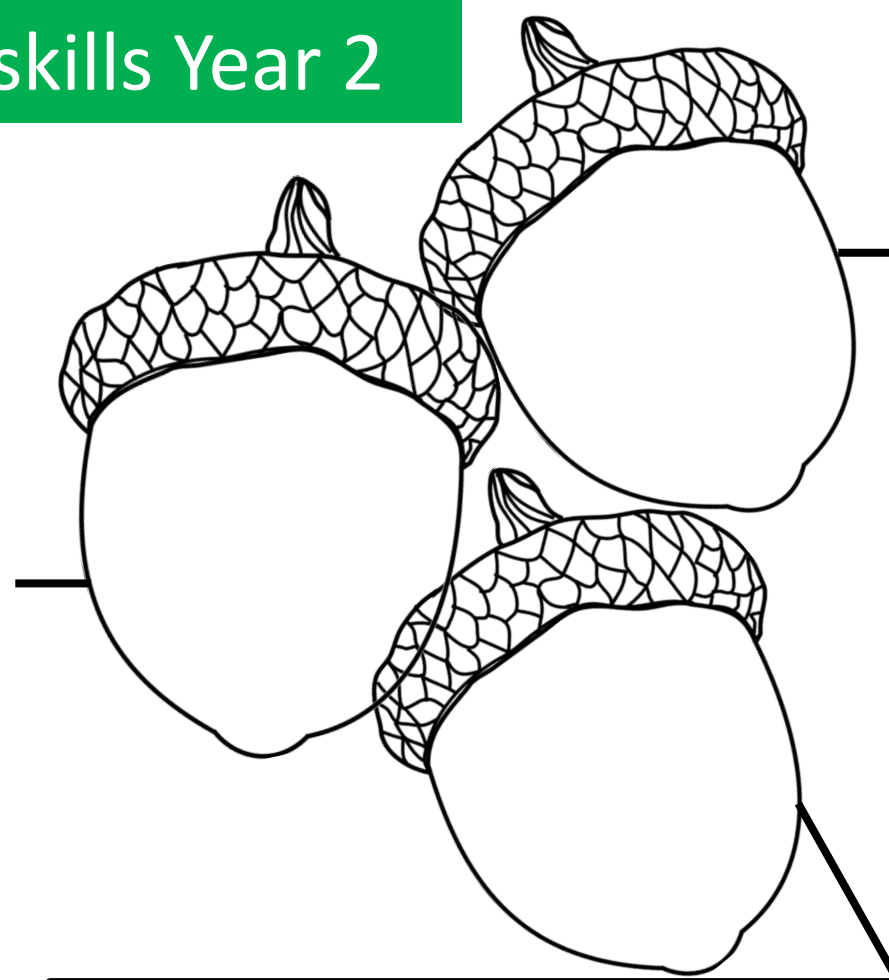
Design Technology skills Year 2

Design:

Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Design purposeful, functional, appealing products for themselves and other users based on design criteria.

Understand and apply the principles of a healthy and varied diet.



Make:

Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

Evaluate:

Evaluate their ideas and products against design criteria.

Explore and evaluate a range of existing products.

Explore and evaluate a range of existing products.

What your child will make this year:

Houses (linked to Great Fire of London), toys, Chinese wraps, ferris wheel, Maasai Tribe necklace and a sewn pouch.

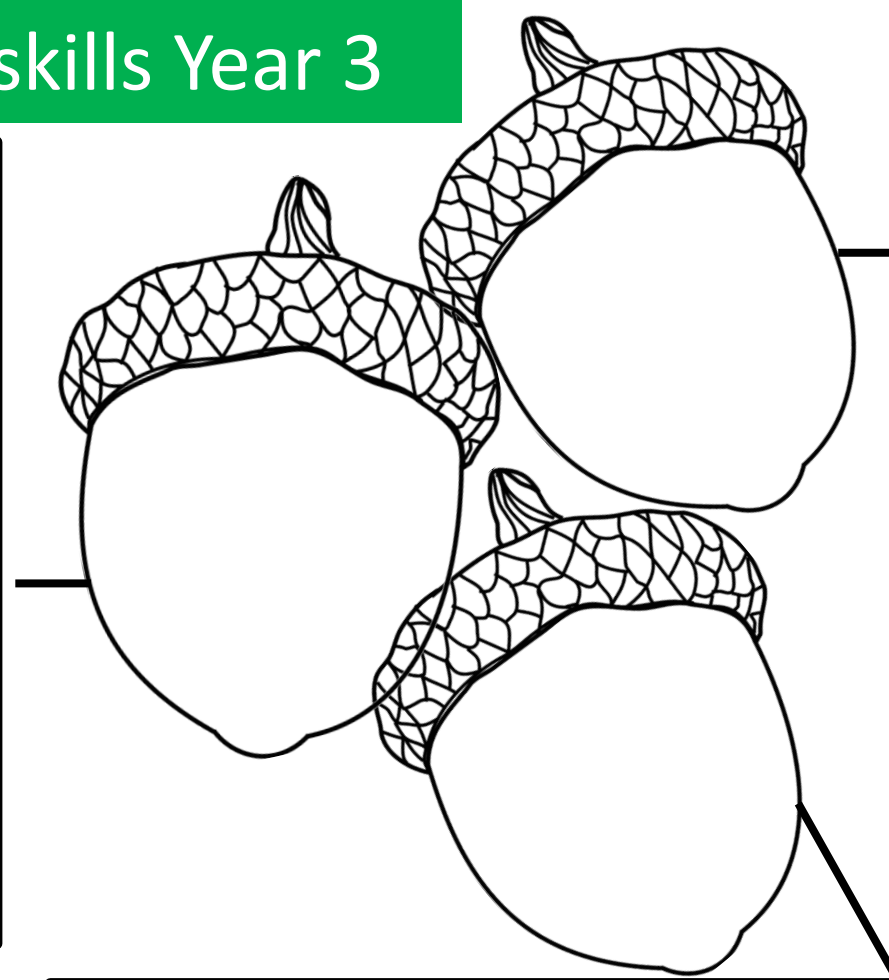
Design Technology skills Year 3

Design:

Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes.

Understand and apply the principles of a healthy and varied diet.

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups.



Make:

Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing.

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities

Evaluate:

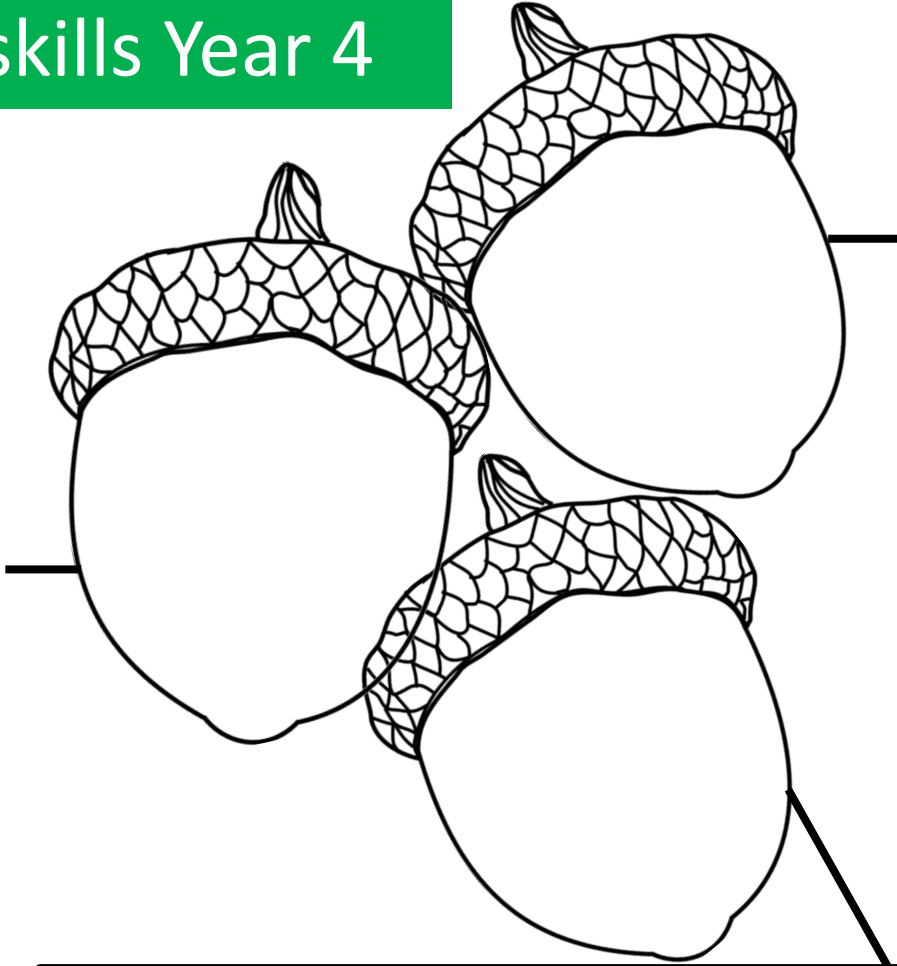
Evaluate their ideas and products against their own design criteria and consider the views of others. Investigate and analyse a range of existing products.

Evaluate their ideas based on the principles of a healthy diet.

What your child will make this year:

Puppet using pneumatics, Greek salad, moving models using different joins, confectionary wrapping, stone age pouch, miniature zoo.

Design Technology skills Year 4



Design:

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.

Understand and apply the principles of a healthy and varied diet.

Make:

Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

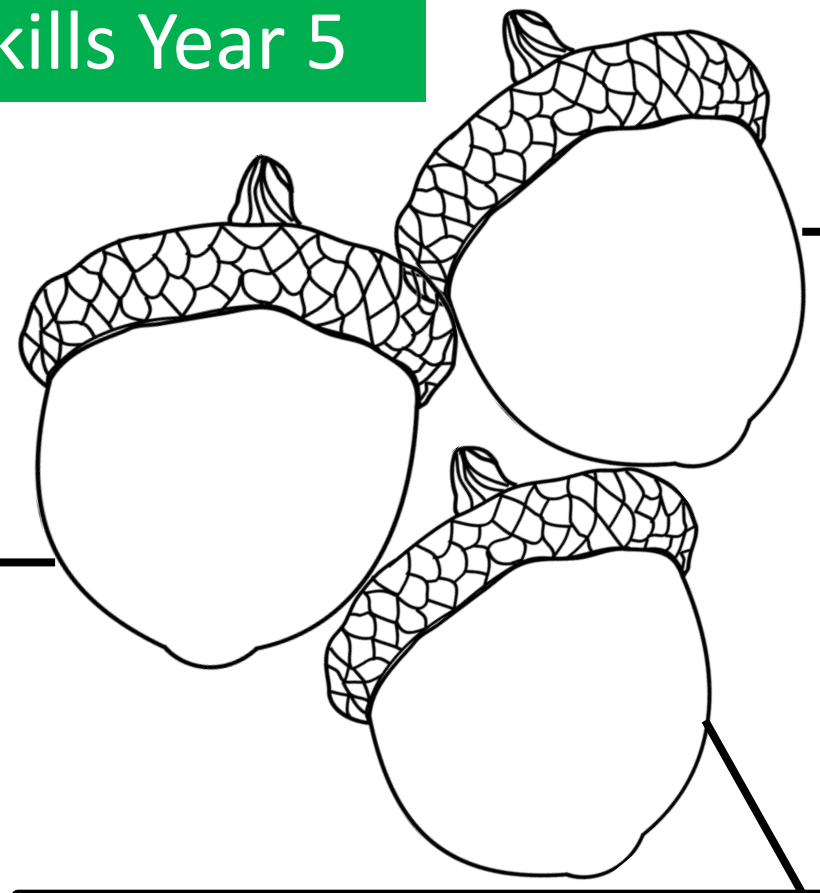
Evaluate:

Understand how key events and individuals in design and technology have helped shape the world. Investigate and analyse a range of existing products. Evaluate their ideas based on the principles of a healthy diet. Evaluate their ideas and products against their own design criteria and consider the views of others

What your child will make this year:

Weaving, roman chariots, bridges, marionettes, curry, Shang Inspired Dragon Motif.

Design Technology skills Year 5



Design:

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.

Understand and apply the principles of a healthy and varied diet. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Use practical skills in food preparation and develop a broader understanding of design principles, food safety, and nutrition.

Use design to support the planning. Make an item fit for purpose with the technique of sewing.

Make:

Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].

Accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

Prepare and create a purse fit for purpose.

Prepare and make food for survival purposes: measure, chop, mix and check for nutrition and flavours.

Evaluate:

Investigate and analyse a range of existing products.

Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Evaluate their ideas based on the principles of a coin purse.

Evaluate by appearance and taste. Discuss future recommendations. Was the food fit for purpose?

What your child will make this year:

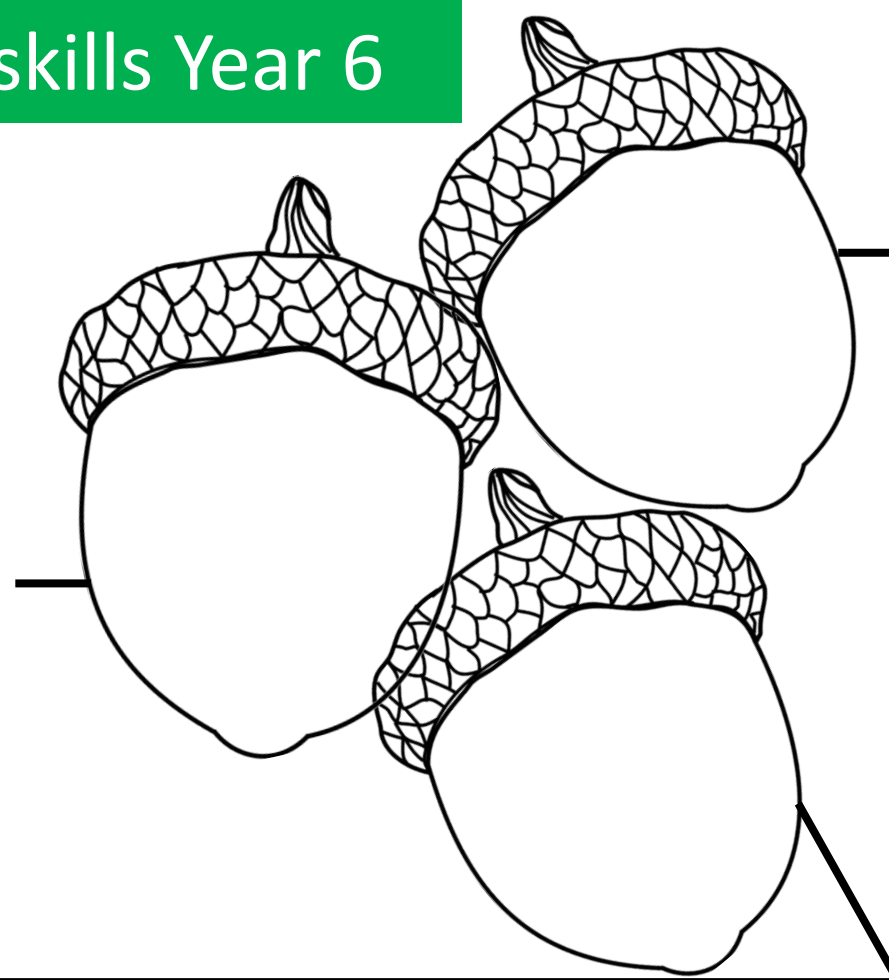
Rocket, Anglo Saxon purse, pulley system for pyramids, Egyptian collar, survival cooking for mountaineers and a Tudor house.

Design Technology skills Year 6

Design:

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.

Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design.



Make:

Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.

Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

Evaluate:

Investigate and analyse a range of existing products.

Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

What your child will make this year:

Rationed scones packaging, periscopes, Mayan head masks, Viking longships.

Design Technology Knowledge at Hamsey Green

Across Key Stage 1, pupils should understand the simple working characteristics of materials and components. They learn about the movement of basic mechanisms such as levers, sliders, wheels, and axles. Pupils discover how freestanding structures can be made stronger, stiffer, and more stable. They also understand that a three-dimensional textiles product can be assembled from two identical fabric shapes, that food ingredients should be combined according to their sensory characteristics, and they learn the correct technical vocabulary related to the projects they undertake.

In Key Stage 2, pupils build on this knowledge by using learning from science and mathematics to help design and make products that work effectively. They understand that materials have both functional properties and aesthetic qualities, and that materials can be combined or mixed to create more useful characteristics. Pupils also learn that mechanical and electrical systems have an input, process, and output, and continue to develop their understanding of technical vocabulary relevant to their projects.

In early Key Stage 2, pupils further explore how mechanical systems such as levers, linkages, or pneumatic systems create movement. They learn how simple electrical circuits and components can be used to create functional products, and how to program computers to control their products. Pupils study how to make strong, stiff shell structures and discover that a single fabric shape can be used to make a 3D textiles product. They also understand that food ingredients can be fresh, pre-cooked, or processed.

By late Key Stage 2, pupils gain knowledge of more complex mechanical systems like cams, pulleys, and gears, as well as more advanced electrical circuits and components for creating functional products. They learn how to program computers to monitor environmental changes and control their products. Pupils study how to reinforce and strengthen 3D frameworks and understand that 3D textiles products can be made from a combination of fabric shapes. Additionally, they learn that recipes can be adapted by adding or substituting one or more ingredients.

Where food comes from

Across Early Years and Key Stage 1, pupils should know that all food comes from plants or animals, and that food has to be farmed, grown elsewhere (such as at home), or caught.

In Key Stage 2, pupils build on this understanding by knowing that food is grown (such as tomatoes, wheat, and potatoes), reared (such as pigs, chickens, and cattle), and caught (such as fish) in the UK, Europe, and the wider world.

By late Key Stage 2, pupils should also understand how seasons may affect the availability of food, and how food is processed into ingredients that can be eaten or used in cooking.

Food preparation, cooking and nutrition skills

Across Early Years and Key Stage 1, pupils should know how to prepare simple dishes safely and hygienically without using a heat source. They also learn basic techniques such as cutting, peeling, and grating.

In Key Stage 2, pupils expand their skills by learning how to prepare and cook a variety of predominantly savoury dishes safely and hygienically, including, where appropriate, the use of a heat source. They also learn to use a wider range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading, and baking.

Food preparation, cooking and nutrition knowledge

Across Early Years and Key Stage 1, pupils should know how to name and sort foods into the five groups shown in The Eatwell Plate and understand that everyone should eat at least five portions of fruit and vegetables every day.

In early Key Stage 2, pupils deepen their knowledge by learning that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted in The Eatwell Plate. They also understand that food and drink provide the energy needed for an active and healthy body. By late Key Stage 2, pupils should know that recipes can be adapted to change the appearance, taste, texture, and aroma of food. They also learn that different foods and drinks contain various substances—including nutrients, water, and fibre—that