

**Curriculum map charting a child's journey through the Design and Technology Curriculum at Bishop Cornish School.**

## **Aims and Intent**

All children will have the opportunity to:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

As part of their work with **food**, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

# Key stage 1

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will work in a range of relevant contexts (e.g. the home and school, gardens and playgrounds, the local community, industry and the wider environment).

When designing and making, pupils will be taught to:

## Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

## Make

- select from and use a range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- use the basic principles of a healthy and varied diet to prepare dishes

## Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

## Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
- understand where food comes from.

## Year 1

### Linked into our topic work the children will develop skills in ....

- Exploring a ready made product i.e. a puppet and seeing how it works. This will mainly be done through play.
- Designing given a chosen brief and identifying what they will need to make their product.
- Making their product using the range of skills such as cutting, sticking, sewing and folding. Children will be encouraged to try different things out before making a final attempt.
- The products the children make will be purposeful and linked with our topics such as making a Christmas puppet for our literacy stories or designing a new space rocket for an astronaut.
- The children will be encouraged to evaluate their products and will talk about what they would do next time. This evaluation happens as the child is making as well as at the end so that they have the opportunity to be successful.
- Through trying different fruits and then making fruit kebabs the children learn about healthy foods. They also have lots of opportunities to cook on the open fire through the year.



## Year 2

DT is closely linked to our topic work. Children engage in a range of activities:

- Investigating unusual objects from around the world – how are they made and how do they work eg. a paper umbrella from India (Geography/History link)
- Investigating the first aeroplanes – discuss what materials they were made from and how they worked.
- Designing own flying machines – labelling parts and materials
- Designing, making, testing and perfecting paper aeroplanes.
- Design and make own crowns/crown jewels (History/Geography link)
- Cookery – make and taste traditional foods from the countries of the UK (Geography link)
- At school and on visit to Morwellham Quay, investigate Victorian artefacts, machines, inventions/inventors and toys. Discuss materials used (Science link) and how they work. Compare to designs for these objects today – what has changed and improved?
- Be a Victorian inventor - use construction materials to make an invention that makes a task easier.
- Find out about and make Zulu shields
- Look at different designs of houses in Africa, and make a small scale round house, constructing from clay bricks and a card/straw roof.
- Make and eat traditional foods from South Africa.

## Key stage 2

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will work in a range of relevant contexts (e.g. leisure, culture, enterprise, industry and the wider environment).

When designing and making, pupils will be taught to:

### 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 tools and equipment to perform practical tasks (e.g. 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

### 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
- understand how key events and individuals in design and technology have helped shape the world

### Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

## Year 3



In Year 3, children will be given creative and practical opportunities to design, make and evaluate a product. Our DT topics will have cross-curricular links with our History, Geography and Science topics.

Children in Year 3 will have a variety of opportunities to explore food technology. Through these sessions, we will understand and apply the

principles of a healthy and varied diet; prepare and cook savoury dishes and begin to know where and how a variety of ingredients are grown or reared.

As part of our history unit of work, Year 3 will learn all about the amazing development of food and cooking from the Stone Age to Bronze Age. Children will make a delicious prehistoric stew based upon the kinds of animals hunters killed in the Palaeolithic and Mesolithic periods. When learning about the bronze age, children will find out about how crops were introduced and then make oatcakes and bean stew.

In tradition Cornish style, Year 3 will investigate the origins of the Cornish pasty and put their culinary skills to the test in making their own.

'Our Awesome Planet' will see Year 3 look at a range of boxes and bags from around the world. We will investigate a variety of different bags and boxes looking at how these are made. Following on from this, we will be inspired to put our talents to the test in making our own.

As part of our Captivating Cornwall topic, we will look at our local bridges across the River Tamar. We will investigate different types of bridges and the structures that support them. Using readily-available materials such as card, paper or art straws, we will explore how bridges are constructed and strengthened. This topic will culminate in making a prototype/model bridge and children will consider ways in which their models may be strengthened, stiffened or reinforced.

## 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.

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 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.

### **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.

Understand how key events and individuals in design and technology have helped shape the world.

### **Technical Knowledge**

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].

Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].

Apply their understanding of computing to program, monitor and control their products.

### **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.

## **Year 5**

Year 5 will design, make and evaluate several projects throughout the year linked to our Topics. These will include projects such as:

Analysing the evolution of the design of the early telescope.

Designing making and evaluating a Space Rocket re-entry device to hold and land an egg safely on the ground.

Creating a Greek pot fit for purpose.

As part of a healthy eating topic year 5 investigate healthy alternatives to the takeaway burger.

Within the North American topic we will focus on architecture & design features in earthquake proof buildings.





## Year 6

Year 6 design and make products linking to our topic themes throughout the year.

For example, examining the benefits and effects of trade and tourism on the South American country of Peru, children design and make a prototype of a bridge (continuing and progressing on from Year 3's learning) to connect inaccessible parts of rural Peru across the Colca Canyon – a major geographical and tourist attraction.



They will also have the opportunity to design World War II foods, designing recipes based on rationing as part of a 1939 Department of Health initiative to 'feed the nation!'



Other DT learning occurs in a cross-curricular manner e.g. through R.E, designing Christian 'mission



lanterns,' for a public procession through Saltash at Christmas.

We also design and make (and eat!) different foods and drinks that relate to

the seasons and our topics. For example, we collect berries in autumn to make jam, crumbles and cordials, which link to our history topic on the Tudors and Maths (through estimation and mass); a Tudor feast for Epiphany (including a pig's head!); a healthy Peruvian meal; a vegan Buddhist curry that we cook outside and occasional campfire cooking.

