

Design and Technology Curriculum

Design and Technology vision statement

At Sunnybrow Primary we believe that Design and Technology is a main part in children's development and skills as it is changing all the time in the outside world. We believe that Design and Technology in our school should prepare children to be creative problem solvers, as individuals and as members of a team. It is a practical activity, which spans the curriculum, drawing on and linking a range of subjects. It involves developing ideas in response to needs and applying practical skills in order to design and make quality products fit for their intended purpose.

We follow the national curriculum of design, make, evaluate and technical knowledge as well as this we ensure that each year group also develops their skills in cooking and nutrition, which encourages the children to recognise how to have a balanced diet and to provide them with basic cooking skills. This is a very important part as many of our children do not get this knowledge of nutrition and diet and home.

We believe that Design Technology in our school gives the children the skills and knowledge they need for moving onto secondary school and out into the wider world. We believe this because we aim to develop children social interaction, getting them to talk about likes and dislikes, develop their capability of designing and making skills and knowledge to make high quality products, ensure they are able to select the correct tools and use these safely, to have an understanding of technological processes, products, and their manufacture, and their contribution to our society and most importantly for them to be able to foster an enjoyment, satisfaction and purpose in designing and making. These practical skills that they develop throughout Sunnybrow will help them to develop their life skills for when they reach the end of school life or it will go towards our children raising their aspirations and becoming interested in a range of job roles that will then provide them with a career path.

At Sunnybrow Primary we want our children to grow in self-confidence and have a sense of purpose to everything they do.

Intent

By the end of their time in each class, the key information and skills that we want children to have and apply is as follows.

Class 1:

Children will have shown that they have explored a range of materials, tools and techniques to show different textures, design, form and function. Through their exploration children should start to experiment how different techniques and materials work together and can be combined. They will be able to represent their own ideas and thoughts through their design and making skills and talk about the features of what they have made and what it will do.

Class 2:

Children should be able to generate their own ideas for design by exploring materials and make templates of what they are wanting to create. Pupils should have designed purposeful, functional

and appealing products for themselves and others. They will be able to generate, develop and communicate their ideas through talking, drawing and making mockups. They will then be able to select a range of tools and equipment and saying why they have chosen these. They will be able to select and use a wide range of materials including construction materials, textiles and ingredients. They will be able to measure, mark out and cut shapes, join and assemble materials and also use finishing techniques. Pupils should also be able to explore and evaluate their products. Making simple judgements and suggest ways in which they could improve their work. They will understand how to make products move and how they are made stronger. When looking at food children will understand the basic principles of a healthy diet and will understand where food comes from. They will understand how to weigh and measure ingredients, understand how to safely use the kitchen equipment e.g cutting and understand the importance of food hygiene.

Class 3:

Children should gain information about the needs and wants of groups and individuals as well as develop their own design criteria and research designs. They would share and discuss ideas, use annotations to understand their sketch or diagram and use a computer aided design if needed. Pupils will start to select from a wider set of tools to perform their task and start to select materials from a wider range. They would be able to start and discuss why they have chosen the equipment or material. They could measure, cut and shape materials with some accuracy and would assemble and join with some accuracy. When evaluating their product, they would be able to identify strengths and weaknesses and consider the views of others on how they could improve. When looking at existing products they would be able to investigate who designed it, where and when it was made and if it could be recycled or reused. Pupils would know whether food is grown, reared or caught and start to think about the seasons and how that would affect what food was available when and understand how food is changed into ingredients. They will know what a healthy diet consists of and how it has to be balanced to give the body the correct energy. They can follow a recipe and can measure in grams.

Class 4:

After the time in class 4 pupils should be able to select and use a wider range of tools, equipment and materials to perform practical tasks according to their function and aesthetic properties. They will complete a list of tools, equipment and materials that they need as well as explaining why they have chosen these when ordering the main stages of their making. They will be able to accurately measure to the nearest mm, accurately assemble and join as well as applying a range of finishing techniques to their product. Children will show that they can look at their product and make refinements as they are in the process of making. Children will be able to consider the views of others when identifying their strengths and weaknesses when evaluating their final product. They will evaluate their design and the fit for purpose as they are making their product. They will compare any changes they had made throughout the making process to their design. When evaluating existing products, they will do a lot of investigating, looking at how much it would cost to make and how sustainable the product would be. They will identify great designers which will have influences their work. Children will have a good understanding on how to stiffen and strengthen complex structures, understand mechanisms, understand and use electrical systems within their products and they should be able to apply their knowledge of computing to program and control their products. Children should know how food is caught, reared and grown within the UK and around the world, they will know that the weather affects what food is produced and they will understand how food is processed into ingredients that can be eaten or used in cooking. They will know that recipes can be adapted to change the appearance, texture and taste, look at how they would correctly store different foods and know what different foods contain in their nutritional terms.

Implementation

Throughout the school Design and Technology is taught every two weeks for a 2-hour block (whole afternoon), this is so children can take their time on understanding the task that has been given to them, experimenting with the different skills/techniques we have tried and discussed, designing their own mechanism, structure or food type, making their design and then evaluating what they have made as their final product.

We have decided to have Design Technology as a standalone subject in school where it will not have to link to our topics, this is because we believe that Design and Technology should give children the understanding of why things are made and their uses. Throughout the classes children will be focusing on Structures, Mechanisms and Food. We will also be focusing on the electricity and textiles areas of Design Technology and believe these areas link well with science and art so they will be combined.

We have looked at the curriculum and the progression or skills documents to carefully plan what each class are doing. Each class does the areas stated above at the same time through the course of the year and will build on their prior knowledge and skills they have learnt previously. In food we are focusing on skills and knowledge of how to prepare fruit and vegetables for class 2 children, healthy and variety of foods in class 3 and then we will focus attention on celebrating culture and seasonality in class 4. In Mechanisms children in class 2 will focus on sliders and leavers as well as wheels and axels, children will then move onto leavers and linkages and pneumatics in class three and then finally in class 4 they will look at pulleys or gears and cams. Throughout their term on structures children will be focused on freestanding structures in class 2, shell structures and shell structures using computer aided design in class 3 and finally frame structures in class 4.

Impact

Throughout lessons children will develop their skills and knowledge of the three main areas of the Design technology curriculum. Children will have their own scrapbooks to keep their designs, experiments of their technical skills they have learnt, photographs of final pieces and their evaluations.

We measure the impact of our curriculum through the following methods:

- Learning walks
- Lesson observations
- Scrutiny of work
- Pupils discussion and questionnaire
- Staff questionnaire
- Teacher assessment

Teachers assess children's knowledge, understanding and skills in design technology by making observations throughout lessons, through conversations with children in lessons and looking at the work and what they have said in their evaluations in their scrapbooks. This helps teachers make a judgement and the data collected will be added on to our tracking system. This will then be looked at by subject leaders to see if there are any gaps to plug.