



Design and Technology

Individually Strong, Collectively Stronger!



Intent:

At Allen Edwards, children will use practical skills, creativity and imagination to design, make and evaluate products that solve real and relevant problems. Our broad and balanced curriculum will enable our children to develop their knowledge – both declarative and procedural – of DT as well as build upon previous learning to ensure progression. As innovators, pupils will be provided with learning opportunities in a variety of contexts considering the user, purpose and functionality of their designed and made prototypes and products. Using their researched knowledge and critical evaluation skills, pupils will develop analytical thinking identifying features, possible problems and reasoned solutions in products from the past and present day in addition to their own and their peers'. As DT learning is cross-curricular, children will make links to the real world by investigating, analysing and applying their knowledge. Pupils will gain a knowledge and understanding of the basic concepts of design, making and evaluating as well as technical skills through memorable experiences.

Impact:

The structure of the design and technology curriculum ensures that children are able to develop their knowledge, skills and understanding alongside a passion for design. Through using a range of tools, materials and techniques, children gain an insight into how products are made and understand the basic concepts used in everyday items. By evaluating and analysing their ideas, children can review, modify and refine prototypes and products while using the design, make and evaluate process. They will possess the skills and knowledge needed to participate successfully in an increasingly technological world. Children understand the importance of a healthy, balanced diet, where their food comes from and how to utilise ingredients to refine recipes. Children reflect on their finished products recognising imperfections as learning opportunities. Effective lesson sequencing and progression allows children to develop their knowledge supporting children's attainment and progress within DT.

Implementation:

Design and technology teaching and learning is cross-curricular, linking together knowledge from English, History and Geography. This provides a starting context for all DT work, which is supplemented further by more in depth knowledge taught about the real-life context and functionality of products. These relevant contexts build upon their knowledge across other subjects.

Through many teaching and learning experiences planned and provided for the children, teachers' expectations of learning remain high. This supports children's development of their creative imagination and critical thinking as well as development of mastery in the design, make and evaluate process. Investigative and evaluative activities are used to provide opportunities for analysing current products to assess whether they are fit for purpose and deciding which positive aspects of these product could be used for their own designs. Learning intentions and explanations are presented clearly to children within lessons. Misconceptions are addressed to ensure that children understand declarative and procedural knowledge and then they are given opportunities to apply this knowledge in functional ways. Mistakes are celebrated and recognised as an opportunity to further learning.

Modelling and demonstrations in lessons are paramount in building children's knowledge, skills and understanding. Teachers model each lesson showcasing different methods of manufacture to apply and critically develop ideas. These demonstrations are broken down into steps to allow the children to be part of explanations of how a problem is identified and how this can be tackled within a task. During these demonstrations, subject-specific language is used to allow children to embed their ability to apply newly learnt vocabulary to explanations. During modelling, teacher's use a variety of strategies, such as silent modelling so that children can observe and digest but also verbalisation and questioning so that children then become heightened to the steps for success.

Pupils are given opportunities to engage in collaborative learning and projects as well as developing individual ideas to further develop their discussion, critiquing and evaluating skills alongside their resourcefulness and problem solving abilities. Through collaboration and structured discussions as a class, children share ideas freely, which provides support for those who find design and technology challenging but also allows for extension or improving of current ideas for those who are more-able. To further support and extend learning, resources are effectively adapted to cater for all levels of learning and learning styles in classrooms.

Teacher questioning ensures that all children understand the knowledge – declarative and procedural – being developed and is a good form of assessment to ensure secure understanding. Questioning, in many different forms (e.g. think-pair-share, pose-pause-pounce-bounce), is used to encourage children to contribute to the development of success criteria for their design briefs. It also provides an opportunity for pupils to think about the problems they may face during their design and make process and discuss a wider range of strategies to solve them before they do arise. Questioning and classroom discussions allow for the contribution of all pupils and provides a safe space to support, challenge and extend design and technology thinking, design and manufacture.

Learning from previous lessons is used to inform the next steps in design and technology allowing children to build and deepen their knowledge, skills and understanding. Immediate feedback during lessons is important and is verbally shared with children. This may be individualised to support their personal design project, group-based to tackle a shared misconception or if there has been a recognition for the need of whole-class support or extension. Adaptive teaching methods, such as providing templates, videos to support learning, amending the task and focus group verbal guidance are used to support and extend learners during lessons. Peer and self-evaluation are used to test the usability, purpose and functionality of the products created.

For more-able pupils, they have opportunities to work at a deeper level in design and technology through ensuring clarity in each stage of the design process. Design is extended by gaining a deeper understanding of the user's needs and explaining why the design is as it is. The manufacturing process requires those who are working at mastery level to draw across their making experiences to create functional, strong and innovative products. Evaluation is interwoven throughout the process as well as at the end to identify pinch points and tackle problems.