



Blue Coat Church of England Academy

Year: 7

Subject: 3D Design

Overview

Here at Blue Coat Church of England Academy all Key Stage 3 Design Technology Pupils are allocated two lessons (one double lesson) per week and follow a rich and varied programme of study. The schemes of work are structured to ensure that by the end of Key Stage Three all pupils have a broad understanding of the wide range of skills related to Design and Technology. Year 7 and 8 pupils will be part of a carousel rotation with Hospitality and Catering and Textiles, they will undertake 3D Design once within this year.

Homework is issued on a fortnightly basis and is issued via the schools show my homework application. Pupils are taught to develop their creativity and ideas and increase proficiency in their execution.

Within year 7 & 8, pupils are required to carry out workshop practical for 8 out of their 10 lessons. These 2 years practically focus upon personal safety and developing skills with basic tools and equipment. The aim is to build on key that could be applied to everyday life.

3D Design- Race for the line

Every student in year 7 has the opportunity to enter the national race for the line competition as part of the rotations. The Race For The Line competition objective is simple: Student teams must design and make the fastest rocket powered car they can and compete with their designs across multiple stages in a national competition.

Every team's car will use the same size rocket motor and compete over the same track distance. The winning teams on race days will have the cars that have the most efficient aerodynamics, have lower mass and that have safe, well designed wheels that reduce friction and can survive the forces of a high speed run. Every student in Year 7 will have an opportunity to refine their designs through the at-school test stages, and at the regional and national finals, where they will build new cars to compete with other schools. The key challenges for student teams are: to shape the foam block into the most aerodynamic and lightweight shape possible within the safety guidelines and rules, to create efficient wheels and axles that are safe and strong and meet size limits. Teams may use laser cutting to 3D printing to make wheels to devise and carry out tests to evaluate, refine and improve their designs. (Andel Plastics offer a comprehensive turn-key solution from concept to volume production of injection moulded plastics and are our current sponsors for the national race for the line competition.)

Pupils should be able to identify that the work they produce meets outcomes linked to the following GCSE skills.

AO1 Develop - Mood Board

AO2 Refine

AO3 Record- Cad Drawings

AO4 Present- Final design Product