

Design and Technology at Westminster College

Westminster college trains BEd. students to teach in primary schools. There is a 40-hour optional course for students in Part One (years 1 and 2) of the degree. The students therefore come to us with a variety of backgrounds, and only a few have studied design and technology. In Part Two (years 3 and 4) we teach the professional studies aspects of design and technology to all students. Students have twenty hours of lectures to prepare them to become teachers of D&T. The course has firstly to familiarise the students with the National Curriculum orders and then to show how to implement them. The course is practically based with students learning skills, techniques, knowledge and understanding as they move from focused tasks to tasks where they can design and make things for themselves. The college has an excellent resource base where students can carry out research for their own designs as well as topics to use on their Block School Experiences. We hope that through their own enjoyment of designing and making, students will be able to engender this in their pupils.

We teach ten 2-hour focused sessions:

- *The nature of technology and the National Curriculum Orders.* We examine objects both old and new to show that there is nothing fresh about technology as it has been with us for hundreds of years.
- *Starting points for technology.* The use of story books, for example. Students are read the SAT story *A Greeting for Marcus* and have to design and make a pop-up card. We teach the use of levers and linkages which can be included in their designs in they wish.
- *An evaluation of construction kits and their use in the classroom.* We examine LEGO and DUPLO, and the associated workcards in detail. Students are taught about belt and gear drive.
- *Making a wooden Jinks frame as a chassis for a buggy.* Students are also required to make it move across the room, powered in any way that they wish to try.
- *Food technology and the development of a new flavour of yoghurt.* We show the links between technology and EIU as students have to set up their own companies to market their product.
- *The study of cams and cranks to achieve different types of movement, and the use of pneumatics and hydraulics to operate simple mechanisms.* Students carry out a design and make task using one of these mechanisms.
- *The study of different types of structures and the properties of materials.* We look at various methods for joining materials, and building and testing bridges and towers.
- *Designing and making a puppet using textiles.* Groups of students also have to present a short play.
- *Energy choices with particular reference to electricity and simple electronics.* We look at the design of various types of switches and circuits.
- *Cross-curricular links and the development of integrated design and make tasks.* Students select their own topic and research ideas for D&T which can come out of the topic.

Year 5/6 Home Design





Throughout all sessions we emphasise the safety and hygiene aspects of the work. We also look very carefully at the National Curriculum documentation to show how the ideas covered are appropriate for different age groups. Students are provided with information about differentiation and ways to assess pupils' work. They are encouraged to go into schools and try out the activities they have developed and reflect on these in future workshop sessions.

The photographs show work carried out by a student on school experience using ideas from the college course. The pupils in Years 5 and 6 were studying the topic Homes and had been looking at the buildings and houses in the surrounding area. The student wanted to link electrical work and the building of frame structures into the topic. The pupils had already carried out work in simple circuits in a previous class and were reminded of this at the beginning of the project. They were also shown how to make a wooden frame with triangular card corners to strengthen it.

Many pupils decided that they wished to have more than one light in the house and needed to explore series and parallel circuits. They needed to turn the lights on and off and had to design switches to do this. Some children made various types of burglar alarms with pressure pads to go under carpets or switches which operated when doors were opened.

Having decided which circuits to build, the pupils had to design the house and select materials appropriate to the task. In the example the pupils designed a living room with card walls and underlay for the roof. They built furniture for the room and decided that they wanted a fireplace. They made the flames out of tissue paper and then placed a bulb behind this to show when the fire was burning. The project took a long time to complete but as can be seen from this finished house, the pupils produced work of real quality.

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