

## British Steel Challenge at Beanfield School

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Inspired by a visit to the school of David Wallbank and a subsequent tour by some pupils of the Yacht Commercial Union with Jonathan Wilson, the Design Technology staff agreed to adopt the theme of the Challenge Yacht Race as the focus of some of their work with Year 9 pupils within Key Stage 3. It fired the imagination of staff and pupils alike, presenting the ideal opportunity for an investigative approach to a challenge that was unfolding every day in the national press and that was being supported by up-to-date information on our Campus 2000.

Elsewhere in the school the English Department encouraged pupils to write letters to the sponsors, who gladly responded in a positive manner. Hood Sailmakers Ltd of Lymington provided specification sheets on the sails that they had made for the Challenge and also sent us some samples of the cloth used to manufacture the sails. Other interesting information came from Sea-Fresh Watermaker Systems of Romsey who, although not actually supplying their own system for this race, helped us understand how pure fresh drinking water is produced from seawater by the reverse osmosis process.

Heartened by the general level of awareness and with some support from Fairline boats one class of Design pupils was given the brief to design and make the hull of a model boat using plywood.

Having agreed that the boats should be between 40 and 80 cm in length the process

began with pupils deciding upon the best shape for the hull. In order to help them make the decision a small experiment was set up with different shaped pieces of wood which were attached to a piece of string with a weight on the end. The small shapes were placed in water and the pupils timed each design as it moved through the water, the fastest one being the chosen design.

Working in groups of three or four pupils they decided on the shape, length of the beam and frame sections. A mock-up was first produced in card and the work proper was undertaken in plywood.

The model consisted of planks fastened on to a series of stringers running the length of the boat which were supported by frames. The frames and planking gave the boats their shape and strength.

When problems arose modifications had to be made but this was part of an on-going evaluation which pupils had to carry out, but all pupils have benefited from having to make design decisions.

Within the textiles area pupils were given the brief to design a motif (badge, logo, etc.) for use on a full size promotional item for the British Steel Challenge. Using resources from within school, pupils were asked to take into consideration the size, cost and ultimate marketability of their product.







From their reading of the official programme and copies of *Steel News*, pupils were able to do some research into the design of the boats, the company sponsors and the symbols. Surveys were then carried out about what people would be prepared to buy.

Influenced by consumer demands our pupils then set out to sketch their motifs of logos indicating measurement, their choice of fabrics and estimated cost of the article on to which they would be attaching their design.

The least adventurous contented themselves with the plain Challenge logo or tapestry design of the yachts whilst the more imaginative designed dolphins, seals on rocks or seascapes. The products included make-up bags, pencil cases and badges. One pupil developed a jewellery box from a simple piece of cardboard that was then covered by material, whilst others were proud to model the tee-shirt to which they had appliquéd the design.

Pupils working in the food area had responsibility for planning and serving meals for other members of the crew.

Investigations began in the galley and, thanks to the plans provided in the Challenge Education Pack, it was easy to arrange the classroom furniture to give pupils a clear idea as to how little room there was for manoeuvre whilst preparing meals on board one of the yachts.

Letters were sent to dried food manufacturers before individual research was carried out into some of the different methods of preserving food — canning, salting, dehydration or sterilisation. All this led to an analysis of the process by which Shippams produce their range of Chicken in Sauce products, and pupils were amazed to learn for how many years canned food can be kept before being consumed.

Pupils undertook practicals using dehydrated foods; several of them prepared a dried chicken curry with vegetables and rice. They had expected it to be dry and powdery and were quite surprised how palatable it was.

A day's menu was then prepared by each pupil for crew member David Wallbank. Using the ILEA food program the menus were entered into the computer and the results printed out. In all cases pupils had underestimated the recommended dietary amounts needed by an active 34-year-old male. The RDAs were as follows: energy 3350 kcals; protein 84 g; calcium 500 mg; iron 10 mg; vitamin A 750 mg; vitamin C 30 mg

It's encouraging to report how successful these individual projects have been. Pupils have enjoyed participating in work of an analytical and investigative nature with the opportunity to develop some of their own ideas. Staff too, have made favourable comments, full use having been made of the British Steel Challenge Pack.

