

## THE TEXTILE TRAIL

Textile students from Oakbank School, Keighley visited three businesses involved in different stages of textile production, exploring the route from woollen fleece to finished carpet.

### Background

**Oakbank School** is an 11-19 specialist Sports College secondary school, situated on the edge of the Bronte countryside in West Yorkshire. The nearby towns and cities of West Yorkshire have a long tradition of textile production and about 50 GCSE students are studying Textiles as part of their Design and Technology course. The proximity of several textile firms provided the school with an exceptional opportunity to give students insights into almost the entire carpet production process within a single day.

### The learning objectives

The students involved had recently embarked on their Key Stage 4 studies. The visit was designed:

- to reinforce and build upon learning about the origins of materials and about production processes previously covered briefly during Key Stage 3
- to provide additionally, specific information about materials, and insights into the relationship between material, form and the manufacturing process.

### The visits

Three companies were visited over the course of a single day. Each company was engaged in a different stage of production. The companies visited were:

**Haworth Scouring Company (Bradford)**. This company provides a scouring service, cleaning raw, greasy, woollen fleeces to produce clean, dry fibres that are then ready for spinning into yarn. The operation is a large-scale continuous process and students were able to view all aspects of it from start to finish. Students also had an opportunity to see and learn how various by-products, which are extracted during the cleaning process, (such as lanolin and soil) are handled and sold for use in other industries, for example in the production of toiletries, and in horticulture.



**S Lyles, Sons & Co Ltd (Dewsbury)**. This company is a long established yarn spinner, supplying yarn to carpet manufacturers both in the UK and overseas. Yarns are produced to meet individual customer needs and vary in composition, gauge and colour. Plain fibres including wool (as processed by Haworth Scouring), nylon and polyester are blended as required, dyed and spun to produce the finished yarn. The

sequence of operation is different for different types of yarn. The company explained to students the different yarns needed to produce different types of carpet, the differing properties of those yarns and how they are produced. The company's manufacturing processes are large-scale, continuous and automated. Students were able to follow production from start to finish, examining and comparing materials at different stages.

***Interface Europe Ltd (Halifax).*** Interface Europe is part of a large multi-national business operating across four continents. The Halifax factory is a modern plant, which produces carpet tiles for use in commercial environments. A wide variety of colours and patterns are produced all involving large-scale automated processes which extend to the packing of the finished product ready for despatch to customers. Students were given an explanation of the various processes and shown the operation from start to finish.

### Learning outcomes

This visit provided an unrivalled opportunity for students to view a complete production process, showing how materials are transformed from their raw state to the finished product. In particular students learned about:

- Different properties of raw materials, e.g. how man-made fibres behave differently from wool.
- Matching the properties of materials (for example the strength, wearing properties and colour of yarn) to the customer's requirement, i.e. the finished carpet.
- How different fibres can be combined and processed to provide the necessary properties.
- How materials are prepared and processed at different stages (and the principles behind the processes).
- The use of large scale, continuous and automated processes (involving computer aided manufacture and control systems).
- Environmental issues including the importance of minimising waste and energy use and the handling of by-products.
- The importance of health and safety issues (for example in relation to hot surfaces, moving machinery, dust, noise, vehicles moving around the factories, etc.)



### Conclusion

The school and the companies involved considered the visits very successful. The learning objectives were fully achieved. Students were able to take away samples of materials (ranging from raw wool to finished yarn) and these have provided the students with a useful resource to back up their subsequent work.

*"This was an excellent opportunity for both students and teachers to see so many aspects of textiles brought together in the context of an industrial process".*  
**Andy Hartley, Head of Design and Technology, Oakbank School.**