Teacher notes

Working with chemicals : Hair and beauty

Description

Hair and beauty professionals use a wide range of chemicals in their treatments. For example, minerals, bleaches and dyes are used to affect hair colour. Soaps, oils and emulsifiers are used to cleanse the skin. Chlorine or bromine is used in keep the water clean in spas and hot tubs. Their training includes understanding the reactions they might encounter among some clients as the result of the chemicals which some treatments contain.

Activity 1: Questionnaire questions

Activity 2: What do people think?

Resources

Scissors, 14 labelled boxes.

This topic is designed to help pupils develop their understanding of the data handling cycle. In Questionnaire questions, they consider how questions vary and the importance of providing a suitable format for the answers. Ideally, photocopy the Questionnaire questions cut out sheet onto card and cut up before the lesson. The pupils match each question card to a suitable response card. They will find that some answers could be used for several different questions but there is only one way to complete the task so that every card is paired.

They then take away copies of the What do people think? questionnaire and bring them back to the next lesson completed by family, friends and neighbours. Two questionnaires from each pupil is likely to provide sufficient data for the whole class to analyse in What do people think? Organise the pupils in groups of three or four for this activity. They cut out the Q&As from the completed questionnaires – the questions are numbered but it will be easier to sort if the questionnaires have been photocopied in colour. Each group puts their cut out Q&As in suitably labelled boxes at the front of the class. Once the Q&As are all sorted, each group takes a box, discusses how to analyse the data, completes the analysis and chooses how the data is best represented. You will want to review some different ways of representing data before asking the pupils to make their choice.

If appropriate, more explicit work on the varying nature of the data sets will provide a challenge. Data is often categorised as qualitative (non-numeric data) or quantitative (numeric data). Quantitative data is often further subdivided into nominal, ordinal, interval and ratio scales. Quantitative data may be continuous or discrete. This is a highly complex area with some genuinely problematic issues. For example, time and height are both continuous variables, yet they can only be recorded as discrete values! A search on the internet will reveal many useful (and sometimes contradictory) articles which can provide starting points for valuable discussions on the categorisation of data.

The Mathematics

This topic provides the opportunity to consider many aspects of the data handling cycle, from consideration of questions suitable for a questionnaire, through the collection and analysis of data to its representation in various forms.