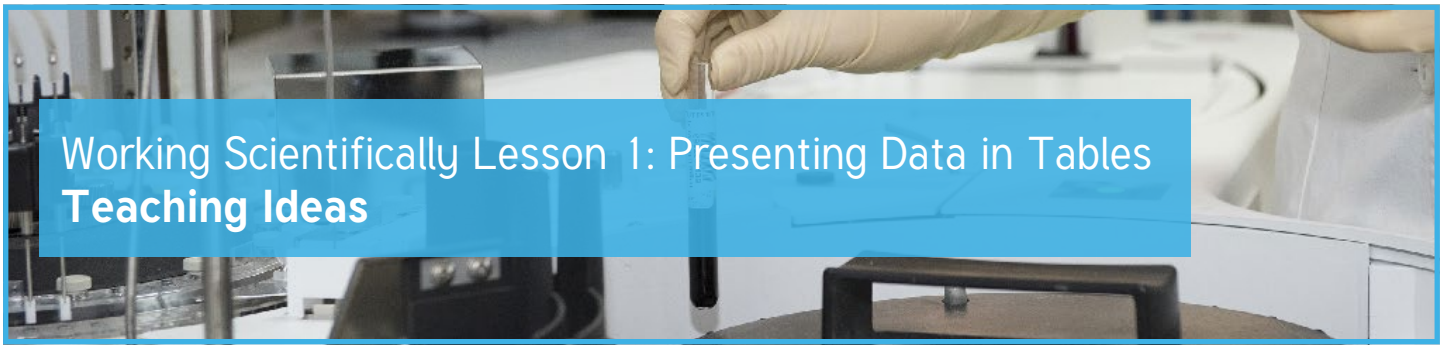

Working Scientifically Lesson 1: Presenting Data in Tables
Teaching Ideas

Learning Objective:	To record data accurately and appropriately.	Resources
Success Criteria:	• To identify the most important aspects of a results table. • To understand how to organise data in a table format. • To analyse the data and suggest improvements.	**Lesson Pack** Rulers/tape measure for measuring height.
Context:	This is the first lesson in a sequence of lessons on tables and graphs. This lesson covers the AQA Working Scientifically part of the specification points 2.6 and 3.1. Students will need to know what the terms repeatable, independent and dependent variables, and anomalies mean prior to the lesson.	

Starter

Students will look at a table of results and answer the questions 'What should be changed about this table of results? Why?' Individually, they should write down as many ways that it needs to be changed as possible.

Answers: Temperature is an independent variable, so should be in the left column of the table, with units given. Time taken to dissolve should be the heading for the other column, again with units given. There should not be any units anywhere else in the table. Students may also say that there should be space for repeat results and an average to be recorded.

Main Activities

What to Include

Ask students to summarise the key information that should be included in a table and where the information should go. Go through the answers as a class to make sure that everyone knows what to include.

Design a Results Table

Ask students to design a results table for the scenario suggested – how the material of a bag affects the weight it can hold. There is a **Table Outline** provided for students that may take longer to draw the results table.

Have students peer assess tables using the criteria on the slide: how many marks out of 5 did they get?

Ask pupils why this information as a whole is useful. Explain, if necessary, that the information could be used by consumers when deciding what type of bag to take out shopping for different items, by someone who designs bags, or by supermarkets when designing bags that are purchased in their shops.

Class Variation

Introduce this part of the lesson by explaining that there are many different types of tables for recording data, and each depends upon what relationships the investigator hopes to investigate.

Give pupils ample time to draw up a suitable table, perhaps even drafting one as a whole class on the board first (depending on ability). They need to include space to record name, height, eye colour, arm span, and gender, of each member of the class.

Some students may need support whilst drawing the results table so there is a **blank table** available for middle ability pupils, and a **table with the labels** added for lower ability pupils.

Questions - Results Analysis

Check where students are up to in terms of their data collection. You may ask them to collect only a proportion of the class data if there is not enough time to collect it all. There are some differentiated (bronze, silver and gold) questions based on their data for them to answer. These questions will lead into the next lesson on graphs.

Feedback

Are there any differences in the conclusions? Lead a discussion about how a number of factors can affect results: the accuracy of measurement/recording; the range of data collected; the accuracy in calculating frequency.

Height Ranges

Pupils can re-arrange their data into another table, they can then plot a graph of height range and frequency in the next lesson.

Plenary

Show the statements on the board and ask students to state whether they are true or false.

True answers will come up as green and false answers will come up as red on the PowerPoint slide. For those that are false, you could choose students to correct the statements.