

Chemistry Subject Knowledge Audit

Throughout this course, you must demonstrate continuous improvement in your subject knowledge to meet the required standards. Strong expertise in your subject is essential for effective teaching. You will show your knowledge partly through lesson observations, but also by completing the subject knowledge audit below at each assessment point during your training year. The audit's red-amber-green rating of course content will map your progress. This live document will serve as a professional tool that you can build on throughout the early stages of your teaching career.

| RAG Rating Key | |
|-----------------------|--|
| S | Secure knowledge = I have good pedagogical content knowledge and would be able to teach it |
| D | Developing knowledge = I understand it, I need to study it further to be able to teach it |
| L | Limited Knowledge = I have little knowledge and have not seen it taught |

| Subject Knowledge | Pre-Course Knowledge | AP1 Autumn Term | AP2 Spring Term | AP3 Summer Term | Final Assessment Summer Term | Action Plan for Development |
|---|-----------------------------|---------------------------------------|---------------------------------|--------------------------------|-------------------------------------|------------------------------------|
| Dates | | 18 November 24 to 2 December 24 | 3 March 25 to 24 March 25 | 28 April 25 to 12 May 25 | | |
| To be confident in the knowledge of the KS3 National Curriculum including: | | | | | | |
| Structure and function of living organisms | | | | | | |
| Material cycles and energy | | | | | | |
| Interactions and interdependencies | | | | | | |
| Genetic and evolution | | | | | | |
| Matter and atoms, elements and compounds | | | | | | |
| Pure and impure substances | | | | | | |
| Chemical reactions and energetics | | | | | | |
| Periodic Table | | | | | | |
| Materials | | | | | | |
| Earth and the atmosphere | | | | | | |

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|---|----------------------|-----------------|-----------------|-----------------|------------------------------|-----------------------------|
| Energy | | | | | | |
| Motion and forces | | | | | | |
| Waves | | | | | | |
| Electricity and electromagnetism | | | | | | |
| Matter | | | | | | |
| Space Physics | | | | | | |
| To be confident in the knowledge of the KS4 National Curriculum including: | | | | | | |
| Atomic structure and the periodic table | | | | | | |
| Bonding, structure and the properties of matter | | | | | | |
| Quantitative chemistry | | | | | | |
| Chemical changes | | | | | | |
| Energy Changes | | | | | | |
| Rate and extent of chemical change | | | | | | |
| Organic Chemistry | | | | | | |
| Chemical Analysis | | | | | | |
| Chemistry of the atmosphere | | | | | | |
| Using resources | | | | | | |
| To have an understanding of the required practicals for Chemistry | | | | | | |
| Non-Specialist KS4 Knowledge | | | | | | |
| | | | | | | |
| | | | | | | |
| Health and Safety | | | | | | |
| Carry out risk assessment of lab activities | | | | | | |
| Use of CLEAPSS to risk assess experiments | | | | | | |
| Safely manage the classroom during science experiments | | | | | | |
| Knowledge of procedures to deal with accidents and injuries that can occur in a science classroom | | | | | | |
| Handling and safe use of equipment | | | | | | |

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|---|----------------------|-----------------|-----------------|-----------------|------------------------------|-----------------------------|
| Practical Skills | | | | | | |
| Planning and ordering practical equipment for experiments | | | | | | |
| Setting up a classroom for safe class experiments or demonstration Be confident in delivering demonstrations | | | | | | |
| Experience using specialist science equipment for example data harvest, oscilloscope, quick fit glassware, potometers | | | | | | |
| To have an understanding of the terms accuracy, precision, repeatability, reproducibility and error | | | | | | |
| To ensure students understand the purpose of the experiment so that all practical work is meaningful | | | | | | |
| To understand and teach students how to control variables to ensure a robust scientific method | | | | | | |
| To ensure that all students are actively engaged in practical work | | | | | | |
| Maths Skills | | | | | | |
| To understand the use of prefixes (e.g. micro, nano, kilo) and units (e.g. cm, W, g) | | | | | | |
| To understand the use of standard form and significant figures | | | | | | |
| To be confident in the use of 3 part equations | | | | | | |
| To be confident in drawing graph with a range of axes and be able to calculate gradients and tangents from line of best fit | | | | | | |
| Science Literacy | | | | | | |
| To understand the use of command different words in science exams. E.g. compare, describe, explain | | | | | | |

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|---|----------------------|-----------------|-----------------|-----------------|------------------------------|-----------------------------|
| To be able to introduce and confidently use specialist scientific language at an appropriate level | | | | | | |
| To create the opportunity for extended reading in science lessons | | | | | | |
| Cultural Capital | | | | | | |
| To create the opportunity for students to experience science beyond the classroom. E.g. Science clubs, trips, enrichment activities | | | | | | |
| To create opportunities in the classroom to make students aware of possibilities of science-based careers | | | | | | |
| To use your hinterland knowledge to enrich science lessons | | | | | | |
| To develop students' science knowledge to enhance the life choice beyond school. E.g. understanding doctor's appointment, making better diet/exercise choices | | | | | | |