**Mathematics for A-level Science**

**Units and prefixes lesson plan**

Description: A 15-minute lesson to revise units from Mathematics for application to A-level Science.

Required materials: Project PowerPoint, copies of worksheet, and calculators for all students.

Vocabulary: Unit, Prefix, Digit number, Exponential number.

Learning objectives:

1. Students will be able to understand and explain the rationale behind prefixes when measuring and using scientific data.
2. Students will be able to convert between standard form and the appropriate prefix, or vice-versa.
3. Students will be able to answer questions in context.

Key questions:

* How do units behave when we do a calculation?
* How must we manipulate them?

Proposed structure:

* Begin with asking students how many centimetres are in a metre (100), and then how many cubic centimetres are in a cubic metre (100 × 100 × 100 = 1 000 000). Ask them to explain why via a diagram.
* Open the PowerPoint presentation and explain the rationale behind prefixes and the combination of units. Some students may have questions about standard form, which is not covered explicitly in this lesson and is considered a prerequisite.
* Ensure all students have a calculator capable of exponential numbers and can enter numbers in standard form into their calculator successfully.
* Display the examples in the PowerPoint and allow students to attempt these questions before revealing the answers on the next slides.
* Encourage students to work through the attached worksheet.
* End the lesson by checking answers on the worksheet, and ask students to explain in their own words what they have learnt.

**Answers to the questions on the worksheet are available on** [**e-AQA**](https://signon.aqa.org.uk/sso/jsp/login.jsp?site2pstoretoken=v1.4~AF33DB4F~4A81154507A0B7085D7798809964E8E4E23D4C788ABE0516552B12E951ED249DAB2AE4A2F10EF9C457804AF2944B7D40FF6725C56462AE4475F1F047DA2CD9DC2A9D8D58E8D16F6199E2496E2EAA6C2A2DE730254F0E6AD1F59ED726CF75E8237EFE35DA33590BBF70CF4428FE626076F4DB25AD50C59966AB4A9371F54A7A7CF7CA67B6E51CE708C7D61FE333E281C177B0091AB34583332E9341F2C7C20B3E2AF07674A908FBBF436D471A289A961295E7B001470DECB6&p_error_code=&p_submit_url=https%3A%2F%2Fsignon.aqa.org.uk%2Fsso%2Fauth&p_cancel_url=https%3A%2F%2Fextranet.aqa.org.uk&ssousername=) **in the Secure Key Materials section.**