**Mathematics for A-level Science**

**Standard form lesson plan**

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

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

Vocabulary: Decimal number, Standard Form, Digit Number, Exponential Number.

Learning objectives:

1. Students will be able to understand and explain the rationale behind using standard form for scientific calculations.
2. Students will be able to use their calculators effectively to perform basic operations with numbers in standard form.
3. Students will be able to answer questions in context.

Key questions:

* Why do we use standard form?
* How do we use standard form?

Proposed structure:

* Begin with asking students what problems could arise from performing calculations with very large numbers, very small numbers, and numbers with many digits. Discuss the possibility for human error, and the difficulty of reading such numbers.
* Open the PowerPoint presentation and explain the rationale behind standard form. Some students may have questions about indices, 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 asking students to explain in their own words what the benefits of standard form are.

**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.**