

REFRESHED APPROACHES FOR SUCCESSFUL MATHS AND PRACTICAL SKILLS IN A-LEVEL BIOLOGY

CODE **8678**

ABOUT THIS COURSE

This refreshed and reinvigorated course is aimed at all teachers of A-Level Biology who are looking for approaches to support students in raising standards in tackling the maths and data analysis questions, and for high standard quality responses in applying practical skills in essay questions. The course is for teachers of all examination boards.

Recent results show that student performance in these areas remains weak; despite their Maths GCSE and practical experiences in Science at GCSE, many students find it hard to transfer these skills to a biological setting.

This course provides refreshed approaches and ideas that will enable students to be able to tackle questions with confidence. Biology teachers can find the Maths aspect of A-Level Biology specification challenging to teach in an engaging way and our highly experienced Biology teacher and examiner will demonstrate how to integrate the teaching of both maths and the practical skills so that students can gain the most possible in their exams.

PROGRAMME

TIME

Effective Ways to Fully Integrate Maths and Practical Skills into Your Teaching 10.00 – 11.00am

- Feedback from recent exam reports on key areas where students succeed and struggle in A-Level Biology in Maths and Practical Skills Testing
- The challenges for planning and teaching and ways to overcome them
- Interesting and different ways to fully integrating skills teaching into your Biology A-Level curriculum
- Ensuring the depth of skills knowledge and understanding is in place in your planning

Discussion: coffee break

11.00 – 11.20am

Developing the Maths and Data Analysis Skills in Context 11.20 – 12.20pm

- Identifying the best places to teach the maths skills within specification areas
- Where students make mistakes with Maths – reviewing example answers to assess what makes the difference between grades

Key areas for development:

- Linking Maths skills with specification content
- Maths skills in questions
- Calculations using spreadsheets
- Unit conversions
- Log graphs
- Decimal places and significant figures

Accessing Grades A/A* in the Maths and Data Analysis Exam Questions 12.20 – 1.00pm

- Strategies to support students to access grades A/A* in the data analysis exam questions
- Where students make mistakes
- Discussion – questions, types of questions, embedding what the is a top-level response and how to achieve it in your teaching

Lunch and informal discussion

1.00 – 2.00pm

Practical Skills: successfully linking Practical skills with A-Level Biology exam questions 2.00 – 3.00pm

- Why students struggle to identify the practical skills within a question
- Where students make mistakes with practical skills – teaching strategies to prevent this

Key areas for development:

- Understanding and selecting key terminology
- Dealing with the familiar in unfamiliar contexts
- Interpreting and explaining data
- Evaluation of procedures and conclusions
- Teaching approaches to embed synoptic thinking in A-Level Biologists

A-Level Biology exam methods and tests, including Statistical tests 3.00 – 3.45pm

- Step-by-step procedures when calculating statistical values
- Choosing which test to use - Chi Squared, Spearman Rank, correlation coefficient, t-test with experimental data
- Interpretation of the different statistical tests beyond Ecology
- Analysing examples of when to utilise the relevant skills for high marks
- Examples responses to questions and question types
- Question level analysis and tactics for achieving A/A* grades
- Identifying the subtle differences between the A and A*

LOCATION/DATE

London

Tuesday 13 December 2022

COURSE LEADER

Dr Harjit Singh is an experienced teacher and senior examiner for A-Level Biology. She has taught and examined A-Level Biology for over 25 years, IB Biology for 8 years as well as BTEC Applied Science. She is a published author of the Key Skills and Knowledge Booster Biology and co-author of Key Skills and Knowledge Booster BTEC Science Applied and Vocational courses. She has presented many biology courses for teachers, student revision conferences and online web conferences. She is also involved in presenting international IB student revision courses.

WHO SHOULD ATTEND?

- All teachers of A-Level Biology
- Heads of Department for A-Level Biology
- Heads of Science Faculties

BENEFITS OF ATTENDING

- Gain new approaches for ensuring that students can tackle the maths and data analysis questions with full confidence
- Discover successful methods for integrating maths and practical skills into teaching of the course
- Develop new teaching approaches for the practical skills and ensuring students can utilise these with unfamiliar contexts
- Obtain example answers and ideas that ensure success in the A-Level Biology exams