*Institute for Research in Schools*KS5 Covid-19 Lesson 2

This lesson is aimed at KS5 students studying A-Level sciences. Lesson 1 is most relevant to Biology students. Lesson 2 is equally relevant to A-Level mathematicians and statisticians. The lessons are produced by the Institute for Research in Schools in partnership with the University of Bristol.

The lessons aim to help students apply their studies to the Covid-19 pandemic, discovering important STEM career possibilities and applying mathematical principles to better understand the Covid-19 data available.

Staff leading the sessions should be sensitive to the possibility that students may have been affected directly by illness or bereavement due to Covid-19.

Lesson 2 delves deeper into the data that is available on Covid-19 and asks students to interpret and analyse the data to answer some questions. Some students may then choose to take this research further, carrying out their own research project through the Institute for Research in Schools.

Lessons comprise a broad lesson plan, an accompanying PowerPoint and all other necessary materials. They can be carried out in the classroom, as a lesson over virtual platforms such as MS Teams, or they can be set for independent study.

**Lesson 2:**

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| Slide 1 | Titles |  |
| Slide 2 | Outcomes:   * Understand how big data can be used to make decisions * Recognise the limitations of data and suggest ways to improve it * Answer some questions by interpreting data in various forms * Evaluate data and give an indication of how secure your conclusions are * Explain how trends in data can be used to make public health decisions | Introduction of outcomes. These fit with the A-Level curriculum (better fit with OCR Specification than AQA)  (5 mins) |
| Slide 3 | We recommend that you complete and discuss the answers to Worksheet KS5.1 (from Lesson 1) before you tackle this lesson. | The worksheet KS5.1 can be found in the Lesson 1 resource folder. |
| Slide 4 | How can data be used during a pandemic to help to inform the response from health agencies and the Government? | This can be discussion that is teacher-led, either in person or on an online platform, or students can do this independently, making their own notes on the lesson.  There are many ways in which data can be helpful. Try to think about different areas that might be useful. How is data useful to health services, from GP practices to hospitals? How is it useful to know what is happening to case numbers in different areas? What might the Government need to plan for and why is it helpful for them to track the numbers? Is it useful to know what ages or professions those that are infected are? How might this be useful?  (10 mins) |
| Slide 5 | Ways data can be useful | **For GPs**: To have information about novel illnesses that they should be alert for  **For hospitals:** To prepare staff, beds and equipment needed to deal with a particular disease  **For Local Government:** For advance warning of likely issues for their area; for example if cases are rising quickly and action needs to be taken  **For National Government**: So that decisions can be made in a timely manner about how to control the spread of a disease  It is useful to know ages / jobs that people are in and case rates so that appropriate measures can be put in place where needed. |
| Slide 5 | Using data | This slide gives an introduction to the Office for National Statistics Data for Covid-19.  Explore the data individually or as a class to answer the questions. |
| Slide 6 | Using data – suggested answers | When was the Covid-19 data last updated on the site?  The data is generally updated daily.  How confident are you in this data and why?  Fairly or very confident. It is a gov.uk site, there are very large sample sizes, there is a huge amount of verifiable detail, other reputable sites have similar data. ONS data is widely used by academics.   * In what month in 2020 was Covid-19 the leading cause of death in the UK?   December 2020 |
| Slide 7 | Data task: Complete Worksheet KS5.2 |  |
| Slide 8 | Opportunity | If students have enjoyed their work on this lesson, perhaps they would like to complete a more advanced research project in this area? The Institute for Research in Schools has a new project starting in September 2021. Visit our website to find out more: www.researchinschools.org |
| Slide 9 | Review of outcomes  Outcomes:   * Understand how big data can be used to make decisions * Recognise the limitations of data and suggest ways to improve it * Answer some questions by interpreting data in various forms * Evaluate data and give an indication of how secure your conclusions are * Explain how trends in data can be used to make public health decisions |  |