



Lesson Plan 2

Main focus of activity:

- The virus is now known to be transmitted by air not touch, leading to a change in the infection rate.

Learning objectives: (This lesson is designed to extend concepts and content from lesson 1)

- To be able to predict next terms in sequences
- To be able to describe rules involving sequences
- To understand sequences involving powers
- To be able to construct a two way table to summarise data
- To be able to construct and interpret graphs
- To interpret numbers in standard form

Links to the Maths curriculum:

- Sequences
- Predicting
- Interpreting graphs
- Communicating maths effectively

Activity outline:

Introduction

- The students are split into groups and must to report back to the local emergency service commanders on the best and worst case scenarios.
- The activity can be introduced via the second 'London Daily Newsflash' Video Clip 2.

The second task is known to have an infection rate between 7 and 12.

For example, best case is 7 and worst case is 12.

Discussion points:

What is the population of the world? On a global scale when, according to your model, will everyone become infected? Is this realistic?

What factors might make this prediction inaccurate? E.g. Would an Eskimo living in Greenland become infected?

- Pupils need to communicate the best case and worst case scenarios to local emergency service commanders.
- The pupils need to remember that their audience may not understand all of the maths behind the outbreak so the information communicated needs to be as clear and concise as possible.

Main Part of Lesson:

Teaching and Learning:

- The pupils need to work in groups to find the best case and worst case infection scenarios.
 - The task will require communication of ideas.
 - The class teacher may want to provide some scaffolding around the activity.
 - For example, how many people are infected after 5 days, 10 days and 20 days?
 - A two way table could also be provided for them to complete.
 - More able groups could not be given any form of scaffolding and allowed to come up with their own way of presenting the data. There is an auto marking Excel resource available with this resource as well if the ICT facilities are available. Graphing packages like Autograph would also be useful here to demonstrate graphically what is happening.

Differentiation:

- For a **lower ability group** it would probably be only realistic to ask them to work out the spread of the disease with an infection rate of 7. There could also be scaffolding to help them through, with key answers given at key points so the pupils know they are calculating correctly.
- For a **middle ability group** they would be expected to complete the infection rate for both 7 and 12 and put the key findings into a relevant table and/or graph.
- For the **higher ability group** the problem they can be expected to create is a fractional infection rate leading to a fractional power problem. This can then lead to questions around how a fractional power behaves and if a fractional power can realistically be used. They could also model different scenarios using a spreadsheet to help simulate the problem.

Plenary:

- Each group must present their best and worst case scenarios to their peers.
- They need to show their calculations and how many people they expect to be infected and what they think the government should do.
- The pupils can then be asked to rank the presentations based on some predefined criteria, such as mathematical content, communication of ideas and quality of presentation.
- This is an excellent way of using comparative judgement to get the students to peer assess each other's work.