



Classroom Activity

10 Big Question: How do we unravel the causes of disease?

Outbreak

Viral infections can spread quickly through the population. In this activity, you can simulate the uncontrolled spread of a virus among a group of people.

For this activity you will need*:

- > Safety goggles
- > Test tubes or plastic cups (clear or white cups will work best)
- > Distilled water
- > Pipettes
- > A dilute solution of acid or base such as a 0.1M HCl, NaOH or simple household ammonia
- > An appropriate pH indicator that has an obvious colour change

*An alternative is given below if you do not wish to use the liquid method.

Set up

Have someone who is not going to play fill all tubes or cups two-thirds full with distilled water, except one (or two if the group size is large), which will be 'patient zero' and should be filled with dilute acid or base solution. Distribute tubes/cups to the group at random along with a pipette for each person. The non-player should note who is given the acid/base solution.

How to play

Have each person carefully exchange an equal portion of the liquid in their cup/tube with one other person, noting who they were. Repeat at least another two times. Finally, add indicator to each player's cup/tube to determine who is now 'infected'.

Can you determine the sequence by which each infected person was exposed? Who was patient zero? If more exchanges were made, what would be the effect on the spread of the infection?

Alternate mode of play

If you do not wish to use the acid/base solution, this activity can be replicated by selecting a player's name out of a hat to be patient zero. Players then tap other people on the shoulder and note their choices as above. The name of patient zero is revealed and the transmission of infection plotted outwards to determine who is infected.