

Developing Medicines Virtual Workshop

Teacher Guide

This is a resource aimed at **KS3 pupils** to put into context the learning around **defence mechanisms** and **clinical trials**.

The video features two Roche employees, Jasbinder and Anna, with opportunities to pause the video to answer questions and generate discussion between students.

You will need

- Lesson video.
- Crossword puzzle and answers.
- Extension activity:
 - Clinical trials video.
 - Data collection activity.
 - 1 x ruler.

Lesson outline

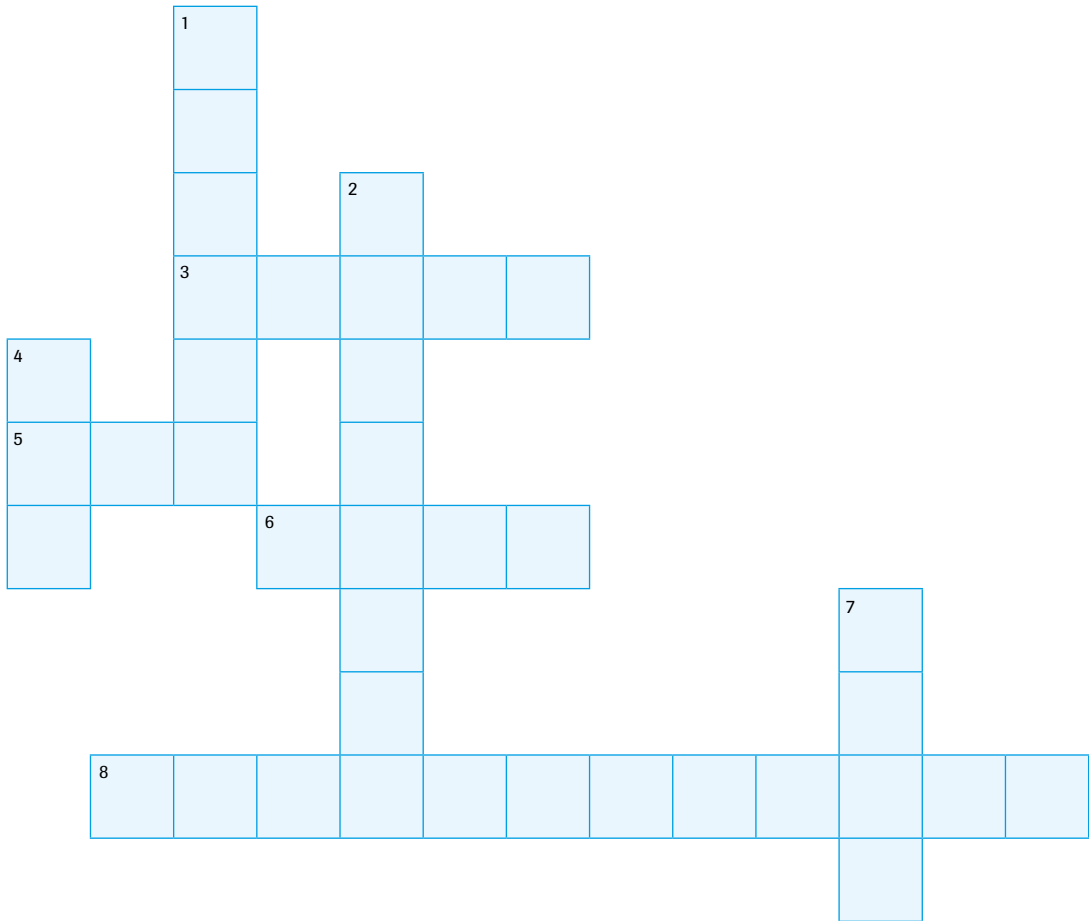
<p>Main activity</p> <p>Play the video to pupils. Teacher input will be needed for the modelling task. Transmission modelling task. Crossword. Crossword answers.</p>	20 mins	Page 2
<p>Optional extension</p> <p>Clinical trials video. Reaction time experiment and data collection activity. Class spreadsheet.</p>	20 mins	Page 4

Curriculum links

- Make predictions using scientific knowledge and understanding.
- Select, plan and carry out the most appropriate types of scientific enquiries to test predictions.
- Identify independent, dependent and control variables.
- Make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements.
- Apply mathematical concepts and calculate results.
- Present observations and data using appropriate methods, including tables and graphs.
- Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions.
- Present reasoned explanations, including explaining data in relation to predictions and hypotheses.
- Evaluate data, showing awareness of potential sources of random and systematic error
- Identify further questions arising from their results.

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Crossword



Across

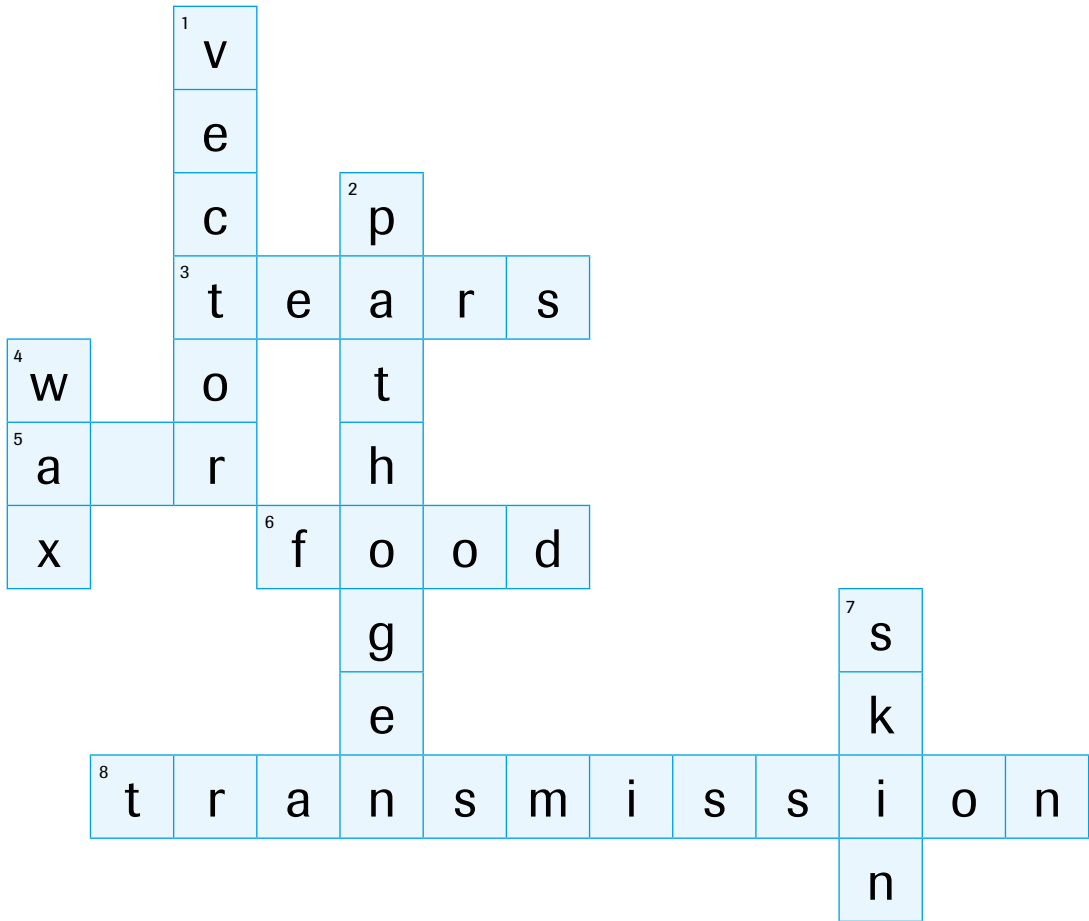
- 3. Defence mechanism released from eyes.
- 5. Sneezing and coughing transmit pathogens through this.
- 6. If this is uncooked infection can spread.
- 8. The action of a pathogen moving.

Down

- 1. Another organism spreads the disease.
- 2. Harmful organism.
- 4. Our ears produce this sticky substance.
- 7. The largest defence barrier, it secretes hormones.



Crossword answers

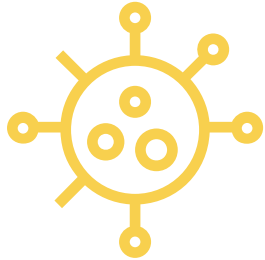


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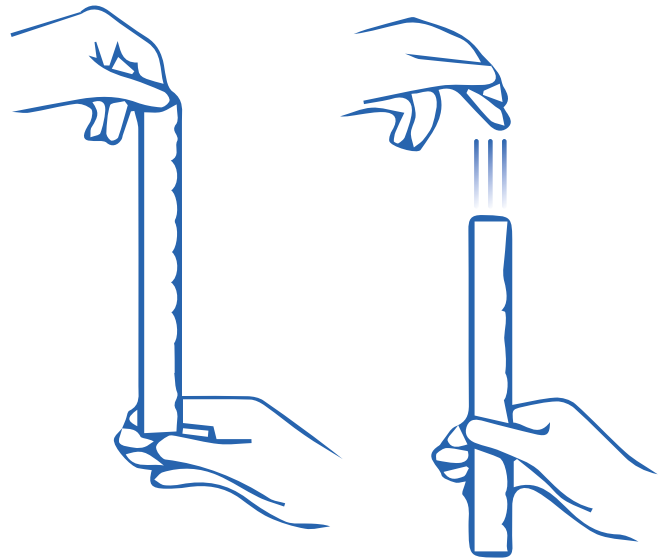
Extension activity

Clinical trials

Do certain fluids increase reaction time?

Testing your reaction time

1. Sit with your forearm over a table surface so your hand extends just over the edge.
2. Have someone hold the ruler with the zero end just above, but not touching your thumb and fingers.
3. Ask them to release the ruler without warning.
4. Catch the ruler as quickly as you can between your thumb and fingers.
5. Record the centimeter mark where you caught the stick.
6. Repeat steps 3, 4 & 5 two times.
7. Find the mean (average) of these numbers and record it.
8. Repeat this experiment after having taken the drug (drink).



Hypothesis: I think taking the fluid will improve reaction time

Independent Variable (what are you changing): _____

Dependent Variable (what are you measuring): _____

Control variable	How it is controlled

Results:

	Test 1	Test 2	Test 3	Average
No fluid				
After fluid				



Extension activity

Clinical trials answers

Independent Variable (what are you changing): Type of fluid

Dependent Variable (what are you measuring): Length caught on the ruler

Control variable	How it is controlled
Person dropping the ruler	Keep this person the same for each test, in case they are somehow pushing the ruler down or somehow giving a hint as to when they are dropping the ruler
Time between drug taking and testing	Use a timer to time this and keep it the same for each drug so the active one has time to take effect

Results: example only

	Test 1	Test 2	Test 3	Average
No fluid	13cm	21cm	15cm	16.33cm
After fluid	7cm	12cm	9cm	9.33cm