

DISCOVERY AWARD



DROPLET DETECTIVES

Cracking the code
to a healthier
school

Student pack



TEAM PROJECT

Working in a team, your challenge is to find solutions to reduce the spread of common airborne infections in your school.

#Infection

#Research

#Data

#Investigate

#Communicate

#Attendance

Managed by



In partnership with



UCL's Air Safety Programme

Name(s)



Write down key points about UCL's *Air Safety Programme*.



Droplet Detectives project

Name(s)



1. Get Started

Decide on a team name.

2. Your challenge

Your challenge is to find solutions to reduce the spread of infections through the air in your school. **Help everyone stay healthy and improve attendance rates!**

These activities will help you with your challenge. Your teacher will guide you through them.

a) Be a data detective Use data to find out about absences caused by airborne infections like colds, flu and covid. How many people have been off sick?

b) Investigate Learn how infections are spread in the air and work out which materials might make the best air particle filters.

c) Spread the word Learn why air filters might not be used properly in hospitals and help people to use air filters correctly in your school.



Be a data detective - school absence

Name(s)

Absence caused by infection in our school



What information would be helpful to find out about absence levels at your school?

What questions do you want to ask to help you collect data?

Write your question ideas below and plan how you will collect your data.

Be a data detective - school absence

Name(s)

Use these questions or develop your own to investigate absence levels caused by common airborne infections in your school. Record your answers below.

How many students are there at our school?

How many students were off school because of illness last week / last month?

Which common airborne infections cause young people to take time off?

Are absence rates higher in some classes than others?

Are absence rates higher at some times of the year than others?

What happens in school already to control the spread of infections?

Collect absence data

Name(s)



Find out from your class or year group if they had a day or more off school from illness in the past year. Which of these illnesses were airborne?

Record the number of ill students off school each month in the table below.

Months	
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

Present your data on the graph or bar chart.



Plot your data

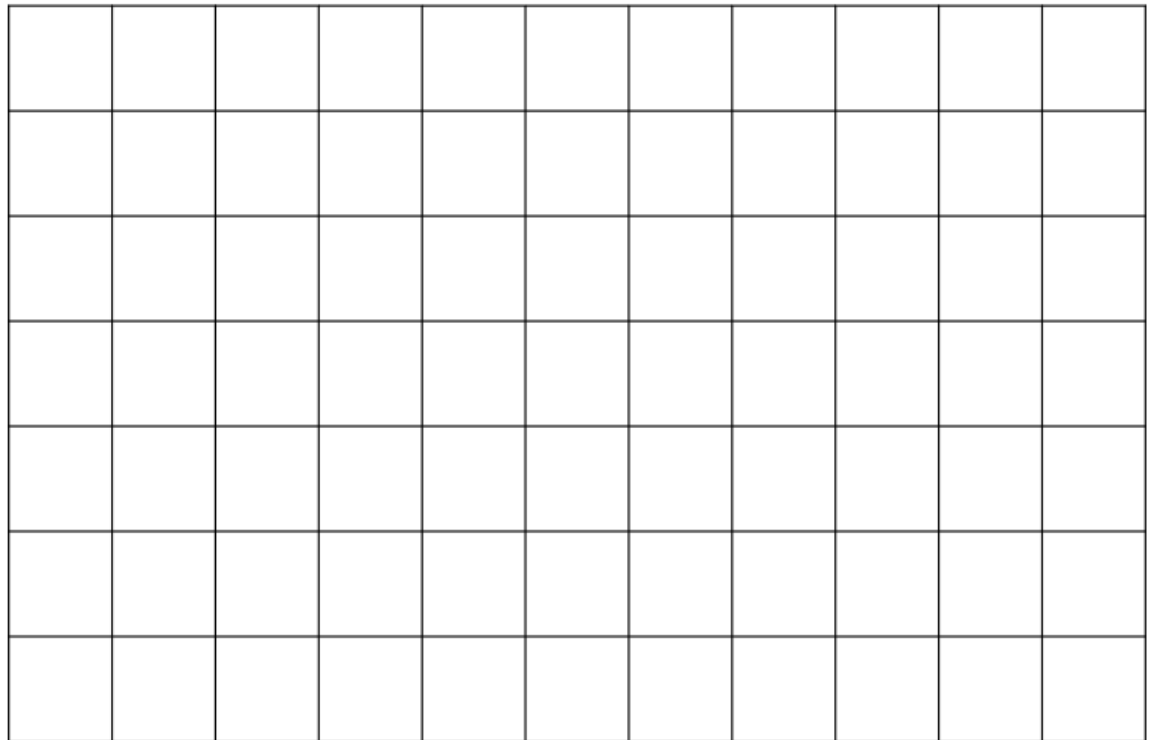
Name(s)



Use the data from your research to complete the graph.

Monthly absence tracking chart

Number of children off school due to illness



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Month

Which month shows highest numbers of illness?

Which month shows the lowest amount of illness?

What might explain these results?

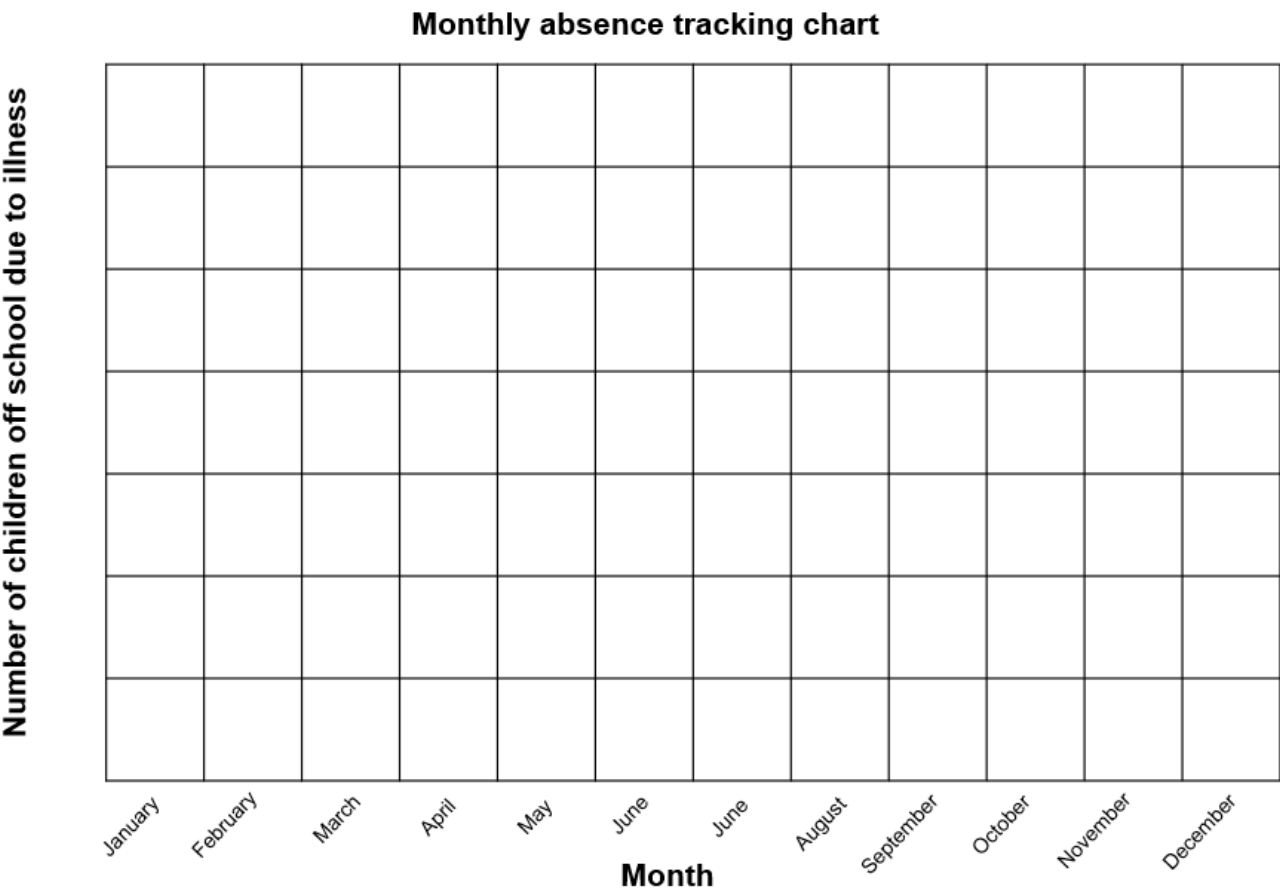


Plot your data

Name(s)



Use the data from your research to complete the bar chart.



- Which month shows highest numbers of illness?
- Which month shows the lowest amount of illness?
- What might explain these results?



Reasons for absence

Name(s)

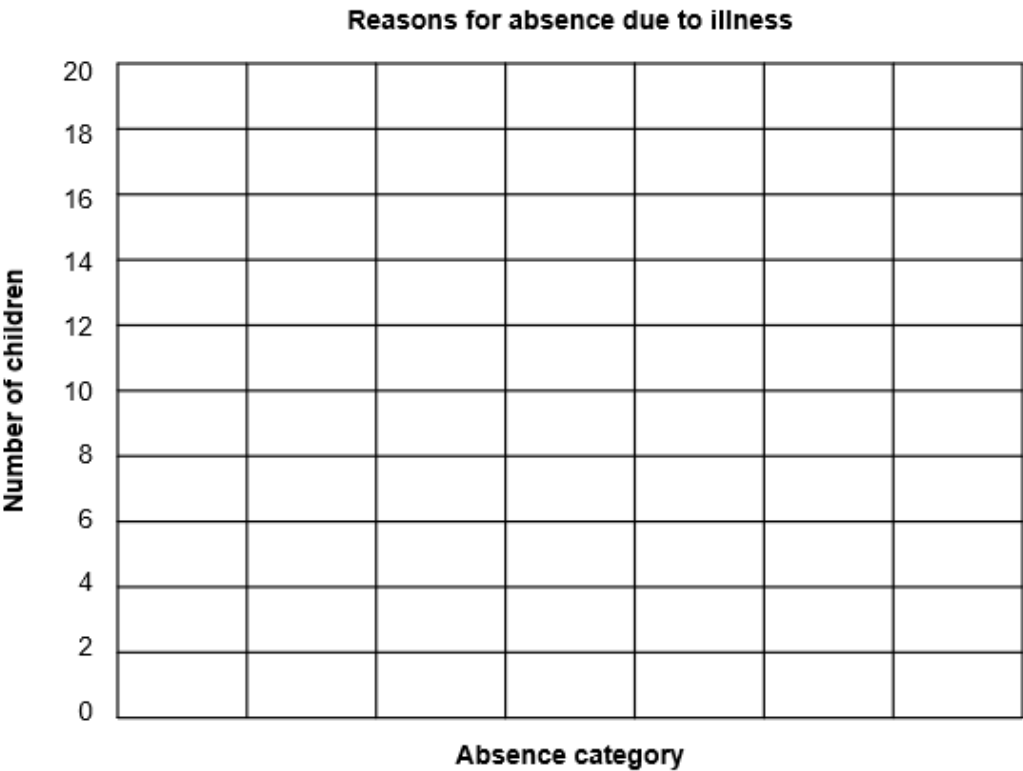


A primary school in the UK has collected the reasons for students' absence due to illness in 2024 – 2025.

Look at the data below from one class of 10-11-year-olds.

Reason for absence	Number of students
Sore throat	6
Respiratory (cold, flu, COVID)	14
Headache	4
Stomach or sickness	7
Fall or injury	3
Toothache	1
Other (temperature, etc)	5

Record this data on the bar chart. Which of the illnesses are airborne?



Hotspots in my school

Name(s)



Sketch a plan or list the spaces and rooms in your school.

Now use a coloured pen or pencil to highlight the spaces that you go to within the school on an average day.

Use another coloured pen or pencil to highlight spaces within the school that other children go to throughout the day.



Where are the hotspots that lots of children visit in your school on an average day?

Investigate air filters

Name(s)

Plan and carry out an investigation to test which materials make the best filters for aerosol droplets.

Write or draw your ideas for carrying out your investigation.



Investigate – air filters



Plan and carry out an investigation to see which materials make the best air filters.

1.

2.

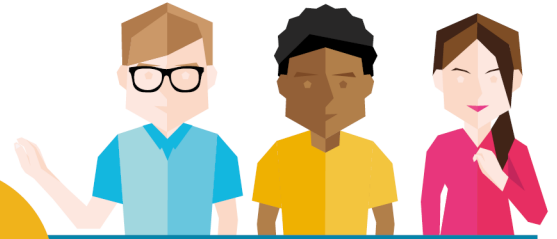
3.

4.

5.

6.

Investigate – air filters



Plan and carry out an investigation to see which materials make the best air filters.

1. Select your materials and equipment

2. Prepare your spray bottle with coloured water

3. Place filter paper in bottom of container

4. Place your material on top of the container

5. Spray coloured water onto material (remember how you ensure that this is a fair test)

6. Record your observations / results

Record your results

Name(s)



Investigate – air filters

Record your results from testing materials.



Which material makes the best filter?

Could you layer materials to improve your results?

Record your results

Name(s)



Record your results from testing materials.

Note – you will need to carefully observe and compare each filter paper. The best material at filtering will let the least coloured water through to the filter paper.

The worst material at filtering will let the most coloured water through, so will leave the most evidence on the filter paper.



Name of material	Ranking 1 to 6 (where 1 = best, 6 = worst)
1.	
2.	
3.	
4.	
5.	
6.	

Which material makes the best filter?

Could you layer materials to improve your results?

Spread the word

The researchers at UCL have found there is a problem with how air filters are used. In a busy hospital, people sometimes unplug or switch them off by accident!



Imagine your school has started to use air filters to help reduce the spread of airborne infections.

Develop an idea for a way to encourage people to use the air filters correctly: keep them plugged in and switched on!

a) Make a list of the different ways in which people could get information on how to use the air filters correctly in your school.

b) Choose one way to communicate your message on how to use the air filter correctly. Show your design idea below and make an example of your idea.



You could use the internet to look at messages that persuade people to take action to reduce the spread of airborne infections.
Which messages are the clearest?

Planning your presentation

Name(s)

As a team, plan a five-minute presentation to tell your audience about your research project.



Include the following:

- Use your data, findings and suggestions from the three workshops to explain If your school should invest in air filters and why – what impact would they have?
- Where should air filters be positioned and when – are there any particular year groups, times of year or locations in the school?
- How could adults/young people in school be educated to use them correctly?

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