

[Home](#) ▾ [Education, training and skills](#) ▾ [Running and managing a school](#)
▾ [Ventilation and air quality in education and childcare settings](#)



[Department](#)
[for Education](#)

Guidance

Ventilation and air quality in education and childcare settings

Published 24 February 2026

Applies to England

Contents

[Monitoring ventilation and air quality](#)

[Making sure there is enough ventilation](#)

[Using air cleaning units](#)

[Other guidance on managing ventilation](#)

Good ventilation is essential for healthy and productive learning environments. It involves bringing in fresh outdoor air and removing stale indoor air.

Ventilation can be:

- natural, for example using open windows, doors or vents
- mechanical, for example using fans or ducts that bring in air from outside
- a combination of both

Effective ventilation can:

- improve pupils' alertness and concentration
- help prevent overheating
- remove polluted air

It will also remove air that may contain virus particles. This can reduce the spread of respiratory infections such as colds, flu and COVID-19.

Knowing when to increase or decrease ventilation can also help to:

- keep classrooms warm, when you need to
- conserve energy

Monitoring ventilation and air quality

You should regularly monitor ventilation and air quality across your buildings.

Measuring CO₂ concentration indicates the proportion of fresh air in a space, because we exhale CO₂ when breathing.

Monitoring CO₂ levels can therefore help to:

- identify poorly ventilated spaces
- manage ventilation more effectively

The factors that affect CO₂ levels include the:

- number of people in a room
- activity levels of people in the room
- amount of ventilation

Poorly ventilated spaces can often feel stuffy and may have unpleasant odours.

To monitor CO₂ levels, you can use:

- dedicated CO₂ monitors
- multi-functional sensors that collect more environmental data, including

measurements of pollutants

The most effective type of CO₂ monitors are non-dispersive infrared (NDIR) monitors.

Using environmental sensors

You can connect environmental sensors to a wireless network, enabling remote data access through a computer. You can also operate them as standalone units that display readings on the monitor's screen.

Position sensors to accurately represent the space – for example:

- away from doors, windows and ventilation outlets
- at table or head height when seated
- at least 0.5m away from occupants

You can mount them on a wall or desk.

One sensor is enough for a typical classroom. Test or calibrate sensors periodically, in line with the manufacturer's recommendations, to make sure they are operational and provide accurate measurements.

These environmental sensors can also measure:

- temperature
- humidity
- pollutants, such as volatile organic compounds – these include formaldehyde, body odours, cleaning chemicals and vaping products
- particulate matter (PM_{2.5} or PM₁₀) – such as pollen, dust, soot, and other potential contaminants that may affect health

Knowing what to do with your CO₂ readings

CO₂ concentration is measured in parts per million (ppm).

If the level is under 800ppm, your ventilation is good. If it's winter, consider partly or completely closing windows to keep your space warm. Keep track of readings and reopen windows if you need to.

If the level is between 800 and 1500ppm, your ventilation is adequate. You should consider opening windows or doors to improve it more.

If the level is over 1500ppm, your ventilation is poor. Increase ventilation by opening windows and doors, where you can.

Making sure there is enough ventilation

In many spaces, you can improve ventilation simply by opening windows and doors.

You should actively maintain your buildings to make sure there is consistently enough ventilation. This includes making sure that:

- windows are not painted shut and are safe to open
- mechanical ventilation systems are operational, and you have checked, cleaned and replaced filters

When you need to ventilate a room but it's cold outside, you can balance the needs to increase ventilation and keep the temperature comfortable by:

- partially opening windows and doors to let fresh air in
- opening higher-level windows to reduce draughts
- airing rooms by opening windows and doors in between use – for example, open windows for 10 minutes an hour during lesson breaks to increase the amount of fresh air

Do not prop or wedge [fire doors](#) open.

Using air cleaning units

Where you cannot maintain an adequate supply of fresh air, you might consider using air cleaning units (ACUs) until remedial works are carried out.

ACUs may also be useful where there are air quality concerns – for example, in areas with high traffic pollution. You can [use an interactive map to find out if your setting is in an air quality management area](#).

ACUs can help to reduce airborne contaminants, including airborne pathogens such as viruses, bacteria and fungal spores, but they do not improve ventilation or lower CO₂ levels.

They are not a substitute for ventilation. You should not use them as a reason to stop opening windows or using mechanical ventilation where available.

Using an ACU should also not delay any remedial work you need to do to improve ventilation.

You should consider if using an air cleaning unit is suitable based on your own risk assessments. Consider the individual needs of pupils – for example, any children with hearing impairments.

Buying new air cleaning units

You should follow [the Department for Education's \(DfE's\) procurement advice](#) if you want to buy air cleaning units.

For low volumes, you can buy air cleaning units directly from suppliers.

For high volumes which exceed the procurement threshold you should use a framework, such as the [facilities supplies framework](#). The threshold is [£207,720 including VAT from January 2026](#).

DfE only recommends HEPA (high efficiency particulate air) filtration ACUs.

We do not recommend other devices, such as:

- air ionisers
- ozone generators
- units that use an unenclosed UV field

The [air cleaning unit specification](#) has more details on the minimum recommended specification for ACUs in education and care settings.

If you are considering air filtration because of external air quality issues, speak to a ventilation specialist to work out the most appropriate solution.

Maintaining your air cleaning unit

ACUs need regular maintenance, including regular cleaning and filter replacement.

Filters typically need to be replaced every 6 to 12 months. Most units will automatically notify you when they need a filter change.

Use the manufacturer's guidance to find out how to maintain your device, including:

- how often to replace filters
- how much filters cost

Support with air cleaning units and CO₂ monitors which DfE supplied

Between 2021 to 2023 DfE provided:

- [CO₂ monitors](#) to all state-funded education and care settings, to help to monitor ventilation
- [air cleaning units](#) to some settings, to help improve air quality in poorly ventilated spaces

We used Rexel as the supplier.

For technical support or to ask for a call back, use Rexel's technical information on [CO₂ monitors](#) and [air cleaning units](#).

DfE will not:

- replace faulty or damaged devices which the ventilation programme provided
- pay for replacement filters

Other guidance on managing ventilation

You can get detailed advice from:

- the Health and Safety Executive's guidance on [how to improve ventilation in the workplace](#)
- the UK Health Security Agency's guidance on [using ventilation to reduce the spread of respiratory infections, including COVID-19](#)
- the Royal Academy of Engineering's infographic on [why clean air is vital to health and how to manage ventilation](#)
- the CoSchools information on [how CO₂ monitors can help create healthier schools](#)

DfE's guidance on [health and safety: responsibilities and duties for schools](#) has more information on what you must do on health and safety risk assessments and managing risk.

For any further questions, [contact DfE](#).

[↑ Back to top](#)

Help us improve GOV.UK

To help us improve GOV.UK, we'd like to know more about your visit today. [Please fill in this survey \(opens in a new tab\)](#).



activity

[Benefits](#)

[Births, death, marriages and care](#)

[Business and self-employed](#)

[Childcare and parenting](#)

[Citizenship and living in the UK](#)

[Crime, justice and the law](#)

[Disabled people](#)

[Driving and transport](#)

[Education and learning](#)

[Employing people](#)

[Environment and countryside](#)

[Housing and local services](#)

[Money and tax](#)

[Passports, travel and living abroad](#)

[Visas and immigration](#)

[Working, jobs and pensions](#)

[Departments](#)

[News](#)

[Guidance and regulation](#)

[Research and statistics](#)

[Policy papers and consultations](#)

[Transparency](#)

[How government works](#)

[Get involved](#)

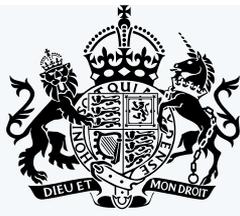
[Help](#) [Privacy](#) [Cookies](#) [Accessibility statement](#) [Contact](#)

[Terms and conditions](#) [Rhestr o Wasanaethau Cymraeg](#)

[Government Digital Service](#)

OGI

All content is available under the [Open Government Licence v3.0](#), except where otherwise stated



© Crown copyright