

Ventilation in schools during COVID-19 - March 2021

Keep occupied spaces well ventilated

Good ventilation reduces the concentration of the virus in the air, which reduces the risk from airborne transmission. This happens when people breathe in small particles (aerosols) in the air after someone with the virus has occupied an enclosed area.

When your school is in operation, it is important to ensure it is well ventilated and a comfortable teaching environment is maintained.

These can be achieved by a variety of measures including:

- mechanical ventilation systems – these should be adjusted to increase the ventilation rate wherever possible and checked to confirm that normal operation meets current guidance and that only fresh outside air is circulated. If possible, systems should be adjusted to full fresh air or, if not, then systems should be operated as normal as long as they are within a single room and supplemented by an outdoor air supply
- natural ventilation – opening windows (in cooler weather windows should be opened just enough to provide constant background ventilation and opened more fully during breaks to purge the air in the space). Opening internal doors can also assist with creating a throughput of air
- natural ventilation – if necessary external opening doors may also be used (as long as they are not fire doors and where safe to do so)

To balance the need for increased ventilation while maintaining a comfortable temperature, consider:

- opening high level windows in colder weather in preference to low level to reduce draughts
- increasing the ventilation while spaces are unoccupied (for example, between classes, during break and lunch, when a room is unused)
- providing flexibility to allow additional, suitable indoor clothing – for more information see school uniform
- rearranging furniture where possible to avoid direct draughts.

Heating should be used as necessary to ensure comfort levels are maintained particularly in occupied spaces.

Ventilation systems

Where mechanical ventilation systems exist, you should ensure they are maintained in accordance with the manufacturers recommendations. Good ventilation with fresh air is essential at all times in classrooms and particularly during this period.

[Ventilation and air conditioning during the coronavirus \(COVID-19\) HSE](#)

Ventilation in schools during cold weather

This guidance provides some practical information on actions that can be taken during colder weather to balance the benefits of increasing ventilation with fresh air and maintaining a comfortable temperature so that effective teaching still takes place.

Ventilation can help reduce infection transmission however the primary ways are:

- Hands – keep washing hands regularly
- Face – wearing face coverings in indoor spaces where bubbles could mix e.g. transport, corridors, communal areas **and classrooms as recommended**
- Space
 - maintaining the bubble arrangements
 - staying at least 2 metres apart as much as possible

The main way to reduce transmission is to ensure that anyone showing symptoms does not attend school and if at school is then isolated as quickly as possible.

If a member of staff or child displays symptoms they should be moved, if possible, to a room where they can be isolated behind a closed door until they leave or are collected from the school. If a child then depending on the age and needs of the child, with appropriate adult supervision if required. Ideally, a window should be opened for ventilation.

The priority for schools is to ensure that classrooms are at a comfortable temperature where effective learning can take place. The aim for additional ventilation should not impact on the pupils learning experience.

Is there a legal minimum temperature that classrooms must be?

There is no law that states a minimum temperature that a classroom or any workplace should be.

<https://www.gov.uk/workplace-temperatures>

The school's responsibility is to set out in the School Premises (England) Regulations 2012, and it is to provide accommodation that so far as is reasonably practicable, the health, safety and welfare of pupils are ensured.

<https://www.legislation.gov.uk/ukxi/2012/1943/contents/made>

The Health and Safety Executive have issued guidance as an 'Approved Code of Practice' which gives practical advice on how to comply with the law. This guidance states that the temperature should provide reasonable comfort without the need for special clothing and should normally be at least 16 degrees Celsius.

<https://www.hse.gov.uk/temperature/law.htm>

<https://www.hse.gov.uk/pubns/priced/l24.pdf>

What actions can schools take to increase ventilation during the cold weather?

Each school building will have specific heating and ventilation systems and also the direction that the windows face can significantly affect temperatures e.g. north or south facing. This means that each building and room will need to be considered individually.

Where the heating and ventilation are automated systems these should already have been adjusted to provide the maximum amount of fresh air possible.

The opening and closing of windows and doors can negatively affect the performance of some of these automated systems particularly ones in newer buildings and schools should contact their property or facilities management provider for advice.

Some schools will have CO2 monitors, and these can be used as measure of how effective the ventilation is working. A lower level of CO2 will indicate that the air is changing more frequently and therefore reducing the risk of infection transmission.

All schools will have already put in place some simple measures since they re-opened including:

- Opening windows and external doors
- Propping open doors (unless they are fire doors or would be a safeguarding risk)

Schools should continue with these measures wherever possible.

Where continuing with these measures results in the temperature dropping to an uncomfortable level then there are a number of actions schools can take including:

- Partially close windows and external doors – further information is provided later in this guidance as to the most effective way to do this
- Where schools have manually controlled heaters then these should be turned up to maximum
- Where schools have buildings with automated systems, they should contact their property or facilities management provider
- Where there are specific problems schools should contact their property or facilities management provider to discuss

What is the best way to maximise fresh air through opening windows and external doors?

When rooms are not being used for a period of time then it is advantageous to open as many windows and doors and as widely as possible, for example this could be done for rooms that are not being used during the lunch break.

Schools will need to consider when rooms will be used and how far in advance windows will need to be closed or partially closed for the room to reach an acceptable comfortable temperature.

In rooms that are being used often and have opening windows or external doors it is better to partially open narrowly as many windows and external doors as possible rather than opening one or a limited number very wide. Opening more windows and external doors narrowly will allow fresh outdoor air in but reduce drafts.

Schools should also consider whether windows and external doors can be opened across corridors to provide air flow through the school. Further advice should be sought from the school's property or facilities management provider.

Note: Fire doors should never be propped or held open and must be kept shut as usually required.

- Schools should open more windows and external doors narrowly to maximise the amount of fresh outdoor air and reduce drafts.
- If appropriate schools should discuss the air flow through the school with their property or facilities management provider

Should schools consider using fans or temporary heaters?

The use of fans to move air around can be useful but only where there is a good supply of fresh outdoor air. Schools should also consider that temporary 'plug-in' fans have only a limited effect and can be noisy and disruptive to the teaching environment. They also potentially have the effect of lowering the temperature for those staff and pupils sitting closer to them.

Temporary air extraction fans are available to buy and hire however these need to have an outlet to the outside usually by being connected to a large hose or ducting which will need to be routed through to an open window or external door. As with temporary fans they can be noisy.

Temporary electric heaters consume a significant amount of electricity and if many are in use can overload the electric capacity of buildings. Gas powered heaters are also available however they can be noisy and require regular replenishing with gas bottles and are unlikely to be suitable in a school environment.

If gas heaters are being considered, schools will need to identify and assess the risks associated with these types of heaters as they can be hot to touch and also result in additional fire risks. Schools may need to contact their insurers before using.

Before considering the use of any temporary fans, ventilation or heating equipment schools should consult with their property or facilities management providers.

Should schools move desks within classrooms?

Schools could consider moving desks within classroom to mitigate any that are directly affected by drafts from open windows. When considering any changes, schools should continue to comply with the relevant guidance on desk layouts e.g. arranging classrooms with forward facing desks and assess any resulting risks.

Should schools require pupils to wear coats in classrooms?

Classrooms should be at a temperature where effective learning can take place without the need for pupils and teachers having to make significant changes to their behaviours. The wearing of coats will have a negative impact on effective learning taking place.

- Classrooms should be kept at a comfortable temperature where the wearing of coats is not needed.

School uniform

Increased ventilation may make school buildings cooler than usual over the winter months. Consider allowing pupils to wear additional items of clothing in addition to the school's current uniform. Where this occurs, no extra financial pressure should be placed on parents.

Other Useful information

Schools coronavirus (COVID-19) operational guidance:

[Actions for schools during the coronavirus outbreak - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/guidance/actions-for-schools-during-the-coronavirus-outbreak)

HSE air conditioning and ventilation during the coronavirus pandemic:

<https://www.hse.gov.uk/coronavirus/equipment-and-machinery/air-conditioning-and-ventilation.htm>

Chartered Institute of Building Services Engineers, Coronavirus, SARS-CoV-2, COVID-19 and HVAC Systems:

<https://www.cibse.org/coronavirus-covid-19/coronavirus,-sars-cov-2,-covid-19-and-hvac-systems>