

Schools: Operational considerations for COVID-19 mitigation measures in low-resource, international settings

Accessible version: <https://www.cdc.gov/coronavirus/2019-ncov/global-covid-19/schools.html>

Document purpose

Schools play an important role in educating students about disease prevention within their homes and communities. Additionally, many children and adolescents rely on key services provided by schools, such as school meal programs, psychosocial support, disability services, and outreach for vulnerable populations. Schools are considered safe havens for children who might be experiencing various forms of abuse or violence. This document provides suggestions for mitigating risks for COVID-19 transmission in schools in low-resource, international settings and describes considerations associated with each mitigation measure, including considerations for secondary impacts such as food insecurity and exposure to violence and for students who are at high-risk for dropping out of school, so that schools may safely resume and sustain operations. The proposals are presented in table format and are organized by mitigation practice (**physical distancing, hand hygiene, cleaning and disinfection, and respiratory hygiene**). This document does not supersede any national or local government laws, regulations, or mandates; rather, it is intended to complement existing or proposed mitigation measures.

Document audience

This document is intended for use by any person, institution, or organization preparing for or responding to community transmission of COVID-19, and for those assisting these entities (e.g., national and local governments, CDC country offices, and others); it contains special considerations for mitigating the risks of resumption and sustained operation of schools in low-resource, international settings.

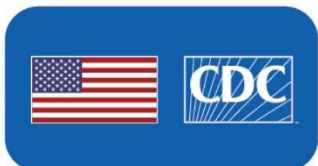
Layered approach

Mitigation measures in schools can be organized into three categories: personal controls, administrative controls, and engineering controls. These should be layered on top of each other to reduce the overall risk of COVID-19 transmission for students and school staff.

Personal controls	Individuals' behaviors to protect themselves and those around them
Administrative controls	Processes and policies that keep people safe
Engineering controls	Physical structures put in place to distance people from hazards

Note on implementation: Below we provide ideas for how to reduce COVID-19 transmission in primary and secondary schools in low-resource, international settings. Though some ideas may not be feasible in all settings, schools can optimize as many measures as possible and appropriate in their local context. Caregivers, teachers, and school administrators must be engaged in the planning and implementation process for any mitigation measure to succeed. The ideas below can be adapted to fit the local context by engaging local populations in the planning and decision-making process. To do so, governments and school administrators can identify trusted stakeholders and actors, such as community leaders and caregivers, to provide feedback on proposed mitigation measures before their implementation. These representatives will not only know the local needs and conditions, but they also may know of lessons learned from previous public health interventions in the community.

More information on how to effectively engage communities can be found [here](#).



PHYSICAL DISTANCING

Personal controls: General recommendations for physical distancing in schools

Maintain **at least a 2-meter distance** when possible between people who do not live together.

Administrative and engineering controls: Possibilities for schools

Restrict mixing between groups.

- ✓ Ensure the same group of students stay together each day with the same staff/teacher (e.g., no switching classes) as much as possible and limit interaction with other classes, staff, and teachers (e.g., schedule breaks and meals at different times).
- ✓ Avoid sharing books, supplies, games, or other learning aides; if sharing is necessary due to limited supply, clean and disinfect between different students.
- ✓ Restrict extra-curricular activities, field trips, and inter-group events and meetings.
- ✓ Restrict entry of caregivers, non-essential visitors, and volunteers.
- ✓ Encourage students to maintain a 2-meter distance from those they do not live with when walking to school.
- ✓ Establish protocols to limit contact with caregivers during drop-off/pick-up.
- ✓ Indicate a location by the entrance and exit beyond which caregivers cannot cross during drop-off and pick-up. Add visual cues (paint, chalk, or tape on ground and signs) to indicate the “do not cross” point. Encourage caregivers to wear cloth face coverings during drop-off and pick-up.
- ✓ Encourage caregivers not to exit cars/motorbikes/bicycles when dropping off/picking up children to limit mixing and crowding at drop-off/pick-up point.

Modify classroom layouts.

- ✓ Space seating/desks at least 2 meters apart, when feasible. Provide physical cues such as tape or chalk to guide spacing.
- ✓ Face all desks/tables in the same direction. Have students sit on only one side of the table.

Limit crowding.

Materials, activities, and personnel needed for implementation

- Accessible communication materials (via radio, SMS/mobile messaging/WhatsApp, letters/announcements to caregivers) to communicate new procedures to caregivers, students, and staff.
- Signs posted throughout the school and school-wide announcements (e.g., via public address [PA] system, bullhorn) to inform students/staff of new procedures and rationale and to remind students/staff to practice physical distancing.
- Tape, chalk, paint, or signs to indicate desk/table/seating spacing, circulation routes, and physical distancing cues.
- Written order and schedule for students to enter/break/exit.
- School staff to model appropriate physical distancing and remind students and caregivers to maintain physical distancing.

Considerations and challenges for schools

Students may rely on school meal programs. If meals or supplementary foods are provided at school, consider:

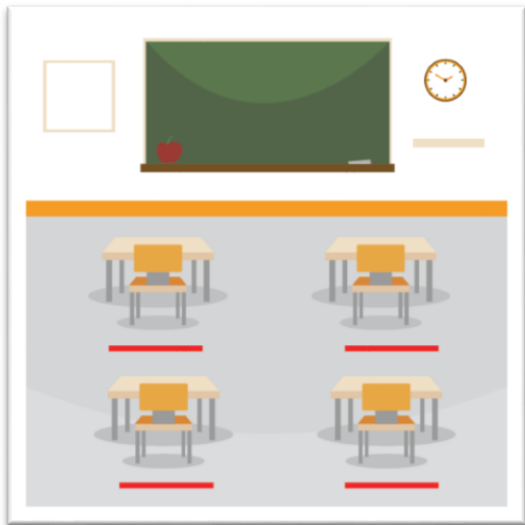
- Distributing packaged/boxed meals and supplemental foods.
- If hot meals must be served, have only one person plate the meals (i.e., not self-serve).
- Food distributors should wear a cloth face covering and wash their hands before putting on gloves.
- When queuing for food, students should maintain physical distance (2 meters) and wear cloth face coverings.
- Students should wash their hands or use alcohol-based hand rub before eating.
- Meals can be eaten in classrooms or outside instead of congregating in cafeterias (after proper [disinfection of desks/tables](#) and [hand hygiene](#)).

If classrooms are not large enough for adequate desk spacing and physical distancing, consider:

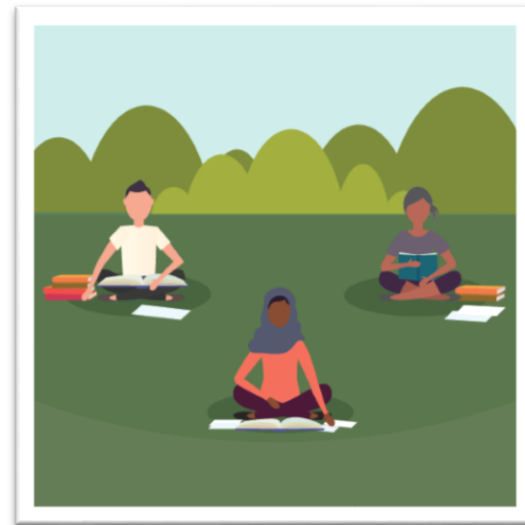
- Opening windows/doors (when safe to do so) to increase circulation of outdoor air.
- Re-purposing other spaces such as cafeterias and gyms to serve as temporary overflow classrooms.
- Moving classrooms outside if the conditions are safe and conducive to a learning environment (must consider weather conditions, pollution, wildlife, etc.).

	<ul style="list-style-type: none"> ✓ Establish one-way circulation in hallways, classrooms, and school facilities. Provide physical distancing guides, such as tape, paint, or chalk on floors or sidewalks and signs on walls, to ensure that staff and children remain at least 2 meters apart in lines, hallways, sanitation facilities (toilets/latrines), and at other times. Assign staff to monitor hallway, classroom, and facility traffic to ensure physical distancing guidelines are followed. ✓ Post signs and make frequent announcements (e.g., on PA or through bullhorn) encouraging physical distancing (≥ 2 meters) at all times. ✓ Close communal spaces, such as indoor cafeterias and playgrounds. ✓ Modify school schedules. Options may include: <ol style="list-style-type: none"> 1) Staggering arrival/dismissal times and class breaks. 2) Expanding the timetable: schedule some students to attend classes in the morning, others in the afternoon, and others in the evening as lighting and security permit. 3) Expanding the school week: schedule some students to attend classes on certain days (e.g., Monday, Wednesday, Friday) and others to attend classes on remaining days (e.g., Tuesday, Thursday, Saturday). ✓ Educate and encourage caregivers, students and staff to not gather/socialize when coming to/leaving school and during class breaks. ✓ Instruct students to maintain at least a 2-meter distance between each other when walking to/from school together and during class breaks. ✓ Instruct students and adults to wear cloth face coverings, if able, and practice hand and respiratory hygiene, particularly when carpooling or taking public transit; limit number of passengers in car by leaving every other seat open, if possible, and keep windows open. ✓ Clean and disinfect school buses before each shift, focusing on frequently touched surfaces; seat only one student per row or in every other seat if there are no rows, unless students are from the same household; keep windows open. 		<p>Modifying school schedules could reduce the total number of instructional hours students get each day or week. Schools can supplement classroom learning with distance learning platforms that are appropriate to the local context and population served, including e-learning, SMS/mobile technology, social media, TV programs, radio learning, and printed take-home resources. However, distance learning may present additional risks to child development if not monitored (e.g., online bullying, excessive screen time, lack of direct learning and engagement with teachers/peers). Modified schedules should prioritize children most at risk for missing school (e.g., girls, students with special education needs, groups at risk for dropping out, and others for whom distance learning will be most challenging).</p> <p>Distance learning/working opportunities should be made available for students and staff at higher risk for severe illness (e.g., persons with underlying medical conditions such as chronic disease, diabetes, or immunocompromised individuals; as well as older adults).</p> <p>Physical distancing may be difficult for direct service providers supporting students with disabilities. In addition to standard prevention actions, direct service providers should wear a cloth face covering when within 2 meters of the student, wear disposable gloves when touching the student, and launder clothes after each use, as detailed here.</p> <p>Physical distancing and isolation measures may contribute to an increase</p>
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	<p>The bus driver and passengers should wear cloth face coverings.</p> <ul style="list-style-type: none"> ✓ Add visual cues (paint, chalk, or tape on ground or post signs) to indicate appropriate physical distancing for caregivers at the drop-off/pick-up point. ✓ Assign staff to monitor that physical distancing is observed during school arrival and departure and among students during breaks. 		<p>in violence (e.g., due to increased time in the same space as an abuser). School administrators should:</p> <ul style="list-style-type: none"> • Assign a point of contact to whom students and staff can confide in about experiences of violence. Frequently remind students/staff that they can report to this person safely, confidentially, and without stigma. • Ensure staff are alert to signs of violence against children (students) and adults (other staff) and know how to report suspected violence. • Create a safety plan for how to handle reported or suspected violence against students and staff.
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Tape on floor to indicate safe spacing of desks.



Classes can be moved outside if the conditions are favorable.

HAND HYGIENE			
Personal controls: General recommendations for hand hygiene in schools	Administrative and engineering controls: Possibilities for schools	Materials, activities, and personnel needed for implementation	Considerations and challenges for schools
<p>Teach and reinforce frequent hand hygiene among students and staff. In schools, students and staff should clean hands upon entry and exit; after breaks; after blowing their nose, sneezing, or coughing; before and after eating; after going to the bathroom; and at other key times.</p> <p><i>Types of hand hygiene:</i></p> <p>Handwashing with soap and water. Soap and water are effective against COVID-19. The cleanest water available (ideally from an improved source)¹ should be used for handwashing, and all types of soap (bar soap, liquid soap, and powder soap) are effective at removing COVID-19. All surfaces of hands (front, back, between fingers, fingernails) should be scrubbed with soap and water for at least 20 seconds and dried using single-use hand drying materials (when available) or air dried.</p> <p>Soapy water (a mix of water and either powdered or liquid soap) can also be used. To prepare, mix enough soap with water so that you can create a foam when rubbing hands together. When using soapy water, a separate handwashing station of rinse water next to the soapy water station will also be needed. Alternatively, soapy water can be provided in a bottle or other closed container next to a handwashing station of plain water. As detailed above, the cleanest water available should be used for soapy water and rinse water. Instructions for</p>	<ul style="list-style-type: none"> ✓ Make hand hygiene obligatory upon entry and exit of the school. ✓ Create a schedule for frequent hand hygiene, especially for younger children. ✓ Post signs with visual cues encouraging frequent hand hygiene, especially at key times, and provide instructions for proper hand hygiene. ✓ Ensure widespread access to hand hygiene facilities by placing hand hygiene stations (handwashing stations or alcohol-based hand rub dispensers) at entrances, exits, within classrooms, and within 5 meters of toilets/latrines (handwashing with soap and water should be prioritized after toilet use). Low-cost visual cues can be used to direct, or “nudge”² students/staff towards hand hygiene facilities throughout the school and to keep physical distancing if queuing for hand hygiene facilities. ✓ Handwashing stations should follow these hand hygiene behavior change principles. More information on different handwashing station designs is available here. In particular, handwashing stations should: 1) Allow users to wet and rinse their hands under a stream of running water; 2) Secure provided soap with a cage (liquid soap), rope (bar soap), or other device; 3) Have a place to catch used water; 4) Provide single-use hand drying materials whenever 	<ul style="list-style-type: none"> ❑ Handwashing stations or alcohol-based hand rub dispensers. ❑ Daily access to adequate supplies to support hand hygiene, including safe water and a consistent supply of soap, alcohol-based hand rub with at least 60% alcohol content, or ingredients for making handwashing solution. ❑ School administrators/staff to enforce hand hygiene practice upon entry and exit of school. ❑ School administrators/staff to check on hand hygiene stations regularly and refill when necessary. ❑ School administrators/staff to model appropriate hand hygiene ❑ Posted signs with visual cues and school-wide announcements encouraging hand hygiene. Messaging should be age-appropriate and include information about when and how to practice hand hygiene. ❑ Paint, chalk, tape, or signs to provide visual cues/nudges for handwashing facilities. ❑ If using 0.05% chlorine solution, personal protective equipment (rubber gloves, thick aprons, and 	<p>Continuous oversight will be required to ensure that hand hygiene stations are refilled regularly; schools can assign a point person responsible for oversight of hand hygiene stations to ensure they are maintained.</p> <p>There will be costs associated with purchasing the handwashing stations or alcohol-based hand rub dispensers, refilling water and soap (or rub), personal protective equipment (if needed), developing and printing communications materials, and possibly paying staff to refill and reinforce use of hand hygiene stations upon entry and exit.</p> <p>Schools may not have a water supply on site, in which case it will be more challenging and costly to regularly refill hand hygiene stations. Water-scarce schools may consider temporary solutions for water provision, such as water trucking. Use of alcohol-based hand rub is a safe alternative to handwashing stations that require water, but still has an associated cost. Young children may need supervision when using hand rub to prevent accidental ingestion.</p>

¹ An [improved drinking water source](#) is a source that, by nature of its construction, adequately protects the source from outside contamination and may include piped household water connections, public standpipes, boreholes, protected dug wells, protected springs, and rainwater.

²“Nudges” are an effective behavior change strategy that refer to changes in the physical environment to cue and reward a behavior. The use of nudges for handwashing is described [here](#).

making soapy water can be found on page 25 of [this document](#).

Cleaning with alcohol-based hand rub. If hands are not visibly dirty, hand rub with at least 60% alcohol content can be used as an alternative to washing hands with soap and water. To use, dispense enough product to cover all surfaces of both hands; rub hands together until they feel dry, approximately 20 seconds.

If soap and water or alcohol-based hand rub are unavailable or infeasible, **handwashing with 0.05% chlorine solution** can be considered as a temporary option. The solution should be refreshed daily and made using [the instructions found here](#). Due to possibility of increased irritation, young children should not use chlorine solution for handwashing. Users should exercise caution to avoid getting the solution in their eyes or mouth.

possible; 5) Provide a waste bin to collect single-use hand drying materials (when applicable).

- ✓ The installation, supervision, and regular restocking of hand hygiene stations should be the responsibility of school administrators or staff.
- ✓ If using 0.05% chlorine solution, provide those doing the mixing with personal protective equipment (thick gloves, thick aprons, and closed shoes).
- ✓ Where there is no improved water source or where water supply is limited, temporary measures such as water trucking may be introduced. For long-term, investments in improving water supply should be prioritized to ensure adequate water for hand hygiene and cleaning.
- ✓ Store cleaning/disinfecting supplies and alcohol-based hand rub in a secured, locked location, out of the reach of children and away from fire/flames.

closed shoes) for those mixing the chlorine solution.

- ❑ Locked location for storing hand hygiene supplies overnight, including stations or alcohol-based hand rub dispensers.

There could be supply chain constraints on soap and alcohol-based hand rub if demand increases as COVID-19 spreads. Single-use hand drying materials (such as paper towels) are often unavailable, can be costly, and increases waste; air drying of hands is a safe alternative as long as hands are dried thoroughly.

If using 0.05% chlorine solution, those mixing the solution should be adequately protected by wearing rubber gloves, thick aprons, and closed shoes during the mixing process because of potential skin and inhalation hazards. They should also be trained on how to mix chlorine solution. If no rubber gloves are available, any kind of gloves can be used. Those mixing should remove gloves and wash hands immediately after mixing. If no aprons are available, they can wear protective clothing (such as long pants and long-sleeved shirts).



Students sanitize hands upon entry to school and wear cloth face coverings.



Nudges, or visual cues, to prompt students to sanitize their hands.

RESPIRATORY HYGIENE

Personal controls: General recommendations for respiratory hygiene in schools	Administrative and engineering controls: Possibilities for schools	Materials, activities, and personnel needed for implementation	Considerations and challenges for schools
<p>Wear a cloth face covering, if able. Face coverings are particularly important when physical distancing is not possible and individuals are indoors with poor ventilation, for example students in a crowded classroom. Students should be frequently reminded not to touch their eyes, nose, or mouth or face coverings. Children under age 2, or anyone who has trouble breathing, is unconscious, incapacitated, or otherwise unable to remove the mask without assistance should not wear cloth face coverings.</p> <p>Cover coughs and sneezes using an elbow or a tissue. Dispose of the tissue and clean hands immediately.</p> <p>Stay home when sick, or after close contact with someone who is sick. If a student or staff member is sick, he or she should not come to school. If COVID-19 is known or suspected, students and staff members should self-isolate until they have had improved respiratory symptoms, 3 days with no fever, and 10 days have passed since the date symptoms first appeared. If COVID-19 is not suspected, students and staff should stay home until symptoms have resolved.</p>	<ul style="list-style-type: none"> ✓ Require all staff and students to wear a cloth face covering while on school grounds, if able. ✓ Post signs reminding staff and students to wear cloth face coverings and instructing how to properly wear and remove cloth face coverings and how to wash cloth face coverings. ✓ Post signs instructing staff and students how to cover coughs and sneezes. ✓ Develop policies for students and staff to stay home if they have tested positive for or are showing symptoms of COVID-19, are caring for a sick family member, or have come in close contact with someone who is sick. ✓ Develop flexible attendance and sick leave policies to encourage students and staff to stay home when sick, or after close contact with someone who is sick. ✓ Enforce policy to stay home if unwell. ✓ Discourage use of “perfect attendance” awards. ✓ Ensure staff will not lose wages while isolating or in quarantine. ✓ Ensure students who rely on school meals can still receive school meal support while isolating or in quarantine. ✓ Consider daily symptom screening upon entry for staff and students – do not allow anyone with a fever above 100.4 °F (38 °C) or with signs of illness to enter. ✓ Consider sending a daily symptom screening text message/SMS/WhatsApp to staff to monitor COVID-19 symptoms. 	<ul style="list-style-type: none"> ❑ Posted age-appropriate signs with visual cues on how to properly wear and remove cloth face coverings. ❑ Posted age-appropriate signs with visual cues depicting how to cover coughs and sneezes. ❑ Informational materials for students, caregivers, guardians, and staff on how to properly make, wear, remove, and wash cloth face coverings. ❑ Informational materials for students/caregivers/guardians/staff reminding them to stay home if sick. ❑ Personnel, thermometer (preferably a no-contact thermometer), and screening tool to conduct symptom screening of students/staff upon entry. ❑ Personnel, mobile phone, and phone airtime (e.g., credit for calls and messages) to send symptom screening text messages to staff and monitor responses. ❑ Staff to model appropriate use of cloth face coverings and covering coughs/sneezes. 	<p>Young students may not understand or adhere to wearing cloth face coverings all day. In these circumstances, prioritize wearing cloth face coverings during drop-off/pick-up, hallway transitions, visits to the toilet and other communal spaces, and any other time when physical distancing may be difficult</p> <p>Some students may need support and assistance from staff with putting on adjusting face coverings.</p> <p>Some students and staff may be unable to wear cloth face coverings. Examples are students who are deaf or hard of hearing and rely on lip reading to communicate, those with certain disabilities or mental health disorders, and those with sensory concerns or tactile sensitivities. Schools can work with students, families, staff, and healthcare providers to accommodate these individuals.</p> <p>Schools can provide fabric for students to make cloth face coverings, or work with uniform manufacturers to make cloth face coverings (if uniforms are worn at school). Schools may also work with NGOs working with women or adolescents to sew face coverings as an income-generating activity.</p> <p>Schools should provide cloth face coverings to students whose family/caretaker cannot provide one for them.</p> <p>Schools will need to devise back-up staffing plans in case teachers/staff</p>

			<p>remain home due to illness of themselves or family members.</p> <p>Effectiveness of symptom screening in general and particularly for children is unknown. Staff may hide symptoms/signs of illness if they lose wages by staying home, risking the spread to others. Advocating for and instituting flexible sick leave policies to allow staff to stay home when sick or when caring for sick family members can help prevent this risk.</p> <p>Recipients of school feeding programs may not stay home when ill if school is one of their only sources of meals. Schools should devise a plan for the safe pick-up or delivery of meal support for students in isolation/quarantine.</p> <p>Schools should ensure there is a space to temporarily, safely, and confidentially isolate without stigma for students/staff who become ill/symptomatic during the day until they can go home.</p>
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Students wearing cloth face coverings in school.



Student covering a cough with an elbow.

CLEANING AND DISINFECTION

Personal controls: General recommendations for cleaning and disinfection in schools	Administrative and engineering controls: Possibilities for schools	Materials, activities, and personnel needed for implementation	Considerations and challenges for schools
<p>Intensify cleaning and disinfection by cleaning staff. Frequently touched surfaces should be cleaned and disinfected at least once a day (i.e., before or after school day), and more frequently when possible. Railings, desks and tables, door and window handles, sanitation (restroom/toilet/latrine) surfaces, toys, teaching/learning aids, and materials used/shared by students (e.g., pens, pencils, art supplies, books, electronics) are examples of frequently touched surfaces.</p> <p>Cleaning refers to the removal of germs, dirt, and impurities from surfaces. It does not kill germs, but by removing them, it lowers their number and the risk of spreading infection. Removing dirt and impurities also helps disinfectant be more effective.</p> <p>Disinfecting refers to using chemicals, for example, diluted sodium hypochlorite (bleach), to kill germs on surfaces. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, it can further lower the risk of spreading infection.</p>	<ul style="list-style-type: none"> ✓ Cleaning staff should clean and disinfect frequently touched surfaces at least once a day, or more frequently if possible. If once daily, cleaning and disinfecting can take place either before the school opens or after it closes. ✓ School administrators, cleaning staff, and select students should walk through the school together and decide which surfaces are touched frequently by students and staff and therefore should be the target of cleaning and disinfection efforts. ✓ Increase ventilation and air flow. Ensure ventilation systems (when present) are working properly. Increase circulation of outdoor air within buildings by opening windows and doors if it is safe to do so. ✓ Provide the cleaning staff with cleaning supplies (soap/detergent, bleach, buckets) and PPE specific for the disinfectant to wear when mixing, cleaning, and disinfecting (for example, rubber gloves, thick aprons, and closed shoes). PPE should be used for COVID-19-related disinfection only (cleaning staff should not bring home PPE – it should be stored at the school in a secure, designated area). ✓ Provide cleaning staff with information (e.g., written or pictorial instructions) about when and how to clean and disinfect and how to safely prepare disinfectant solutions, as described in the leftmost column. 	<ul style="list-style-type: none"> <input type="checkbox"/> Stocks of soap, bleach, buckets, and other cleaning supplies (e.g., mops, cloths). <input type="checkbox"/> Designated cleaning staff. <input type="checkbox"/> PPE for designated cleaning staff (rubber gloves, thick aprons, and closed shoes). <input type="checkbox"/> Sufficient access to non-turbid water to meet all cleaning and disinfection needs. <input type="checkbox"/> Instructional materials describing the cleaning and disinfection process, including proper mixing of solutions, for use by designated cleaning staff. <input type="checkbox"/> Written schedule for increased routine cleaning and disinfection. 	<p>If schools use an expanded timetable (e.g., one group of students attends in the morning and another in the afternoon and/or evening), cleaning and disinfection must occur between each session.</p> <p>There will be costs associated with purchasing the bleach, soap, cleaning supplies, and PPE; printing instructional materials; and possibly having to pay additional staff to clean.</p> <p>If no rubber gloves are available for cleaning staff, any kind of gloves can be used. If no aprons are available, cleaning staff can wear protective clothing (such as long pants and long-sleeved shirts) that are laundered after each use.</p> <p>There could be further supply chain constraints on soap, chlorine products, and PPE as demand increases as COVID-19 spreads. Calcium Hypochlorite (HTH) powder or bleaching powder can also be used to mix disinfection solutions if available.</p> <p>If water supply is not available on site, it will be more challenging and costly to clean and disinfect daily. Water-scarce schools may consider temporary solutions for water provision, such as water trucking.</p> <p>There is potential for harm to users when making and using disinfection products, so it is important for cleaning staff to be adequately protected when mixing and using disinfectant and trained on how to mix and disinfect.</p>

Use a **0.1% solution** made from bleach and water (using non-turbid water source) for disinfection. To mix, use the percentage found on the bleach bottle (for example, 5%) and **follow these instructions:**

Example of making 0.1% solution with 5% liquid bleach:

[5% chlorine in liquid bleach / 0.1% chlorine solution desired] – 1 = [5 / 0.1] – 1

= 49 parts of water for each part liquid bleach

If you are using a 20 L jerry can or bucket to mix, you will need 400 mL of bleach and should fill the rest of the jerry can with water.

20 L / 50 parts = 0.4 L, or 400 mL

[% chlorine in liquid bleach / % chlorine desired] – 1 = Total parts of water for each part bleach

Instructions for making 0.1% solution from 0.5% disinfecting solution, 70% high-test hypochlorite (HTH), or 35% chlorine powder can be found [here](#).

Cleaning and disinfection procedures:

- 1) Put on personal protective equipment (rubber gloves, thick aprons, and closed shoes).
- 2) Mix 0.1% bleach solution using the procedures described above in well-ventilated area.
- 3) Clean with detergent or soap and water to remove organic matter.
- 4) Apply the 0.1% solution to the surface with a cloth and allow for a contact time (the amount of time that the disinfectant should remain wet and undisturbed on the surface) of at least 1 minute. Additional disinfectant may need to be applied to ensure it remains wet for 1 minute. After 1 minute has passed, rinse residue with clean water (this will also protect the surface or item from damage).
- 5) After cleaning and disinfection, carefully remove personal protective equipment (PPE) and wash hands immediately. Re-usable PPE (e.g., aprons) should be laundered immediately.

✓ If someone becomes sick at school, close off spaces used by the sick person until after they can be cleaned and disinfected. Cleaning staff should wait 24 hours before cleaning and disinfecting, or if 24 hours is not feasible, wait as long as possible.

Note: Large-scale spraying of disinfectant in schools or on school buses is not recommended. There is limited evidence that it is effective. To be effective, disinfectants need to have sufficient contact time and coverage, which is difficult to get when doing large-scale spraying. There is also limited ability to prevent people nearby from the hazards of inhaling disinfectants during large-scale spraying. Additionally, organic matter, like that which is often found on the ground in public places, would need to be removed by cleaning before disinfectants would work effectively.

Cleaning and disinfecting should not take place near children or people with asthma.

Procedures for cleaning and disinfecting various surfaces (hard surfaces, soft surfaces, electronics, and laundry) can be found [here](#).

