

# Laboratories

## Additional Considerations

### Laboratories

Science investigations that require student interactions to make sense of observations and results are key components of science learning. During COVID-19, teachers will need to modify their instructional practices for science laboratories to prevent the spread of viruses and other disease-causing organisms.

### Required

- ❑ Provide adequate spacing of students and staff. The spacing could be encouraged through markings on tables and floor, and the placement of desks. Partitions that can *be disinfected* can be placed between lab stations.
- ❑ Plan for the *cleaning and disinfection* of surfaces (desks, lab tables, partitions, doorknobs, etc.), lab equipment, materials, and personal protective equipment such as safety glasses, gloves, and aprons. Be certain to *disinfect* items before being used by another student. Have *EPA-approved disinfectants and* wipes available.
- ❑ *Provide alcohol-based hand sanitizers available while maintaining environmental safety, as these products are flammable liquids.*

### Recommended

- ⇒ Consider using disposable materials and small-scale practices (e.g. micro-scale chemistry) to reduce the sanitation needs. Give attention to safe and sanitary disposal methods for chemicals, supplies, materials and personal items. Remove unnecessary items that may need sterilizing, such as excess glassware and reagent bottles.
- ⇒ Reduce the sharing of materials by encouraging students to bring their own items when feasible, such as calculators, rulers, hand lenses (magnifying glasses), gloves, and goggles.
- ⇒ Include instruction that teaches students the laboratory/investigation safety routines and procedures that students should use when conducting experiments whether at school or at home.
- ⇒ Consider the traffic flow when distributing materials and other movements. Minimize the number of students that need to move.
- ⇒ Conduct labs on a flexible schedule at school for fewer students per day.
- ⇒ Establish personal student practices such as wearing *face coverings*, washing hands *frequently*, and avoiding sharing materials. Use signage that encourages *good hygiene* practices.
- ⇒ Consider the use of available vacant spaces for individual and small group use. These could include vacant classrooms, cafeterias, libraries, auditoria, and hallways.
- ⇒ Modify grouping practices. For physical investigations, one student could perform the investigation and share the observations with the partners who remain at a proper distance.

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- ⇒ Consider alternative methods for investigations. A teacher could perform the physical aspects of the investigation as a demonstration or as a video recording, which would then be used by students for analysis and explanations. Pre-recorded videos and computer simulations are also alternative methods for investigations.