TEACHING SCIENCE IN A COVID-19 ENVIRONMENT

A RESOURCE FOR EDUCATORS

PART 2

CONSIDERATIONS FOR PPE, HYGIENE PROTOCOLS, DISINFECTION, SAFETY AND STRATEGIES FOR K-12 SCIENCE EDUCATORS

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What are Schools Going to Look Like when they Re-Open for Science Teachers & Students?

As your trusted lab partner, FLINN understands there will not be a 'one-size-fits-all' solution that can be applied universally to school systems. **Each unique school situation will require its own tailored solution to accommodate the students, teachers, support workers and other stakeholders in the educational community.**

When the time comes, we are prepared to help you develop and execute the best solution for you. In this document, we will take a look at some background information that will help to guide the decision-making process in school re-openings.

OVERVIEW OF THIS SESSION

1. Re-opening During COVID-19 Pandemic
2. Considerations for safe-school opening
3. Hygiene & PPE Considerations in Schools
4. Sanitizing & Disinfection
5. Suggestions for Teaching Science in Covid-19
6. Remote Science & STEM
7. Digital Solutions for various learning environments
8. Preventative Measures to Take in Science Labs, Classrooms and Shared Spaces
9. Science Department Product Order Planning in COVID-19 school cycles

Pulling from the guidelines provided by the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), North American Center for Threat Assessment and Trauma Response (NACTATR)* and the Organization for Economic Co-operation and Development (OECD) and more, we have organized this document into four sections that reflect the categories outlined by top physical and mental health organizations

*These materials contain content provided by third parties and are being distributed for your convenience only. We make no representations about the accuracy of these materials and urge you to consult federal, state, and local public health guidelines for the most up-to-date information on reopening.

COVID-19 School Re-opening Considerations from the Centers for Disease Control & Prevention

General guidance on the implementation of ‘back-to-school’ practices which are in the best interest of students, teachers, and support workers can be found here at the **CDC Considerations for Schools.**

State and Local policy documents can be accessed here at the **CDC Public Health Gateway.**

CDC – Center for Disease Control and Prevention

Behaviors that Reduce the Spread of Covid-19: When to Return to Work

When you can be around others (end home isolation) depends on different factors for different situations. It is important to remember that anyone who has close contact with someone with COVID-19 should stay home for 14 days after exposure based on the time it takes to develop illness.[1]

Here are some links to share with staff and students:

- If they have been sick with COVID-19
- If they have recently had close contact with a person with COVID-19

1. CDC: When You Can be Around Others After You Had or Likely Had COVID-19

Hand Hygiene Requirements

Teach and reinforce handwashing with soap and water for at least 20 seconds and increase monitoring to ensure adherence among students and staff.

If soap and water are not readily available, hand sanitizer that contains at least 60% alcohol can be used (for staff and older children who can safely use hand sanitizer). Encourage staff and students to cover coughs and sneezes with a tissue.

Used tissues should be thrown in the trash and hands washed immediately with soap and water for at least 20 seconds.

If soap and water are not readily available, hand sanitizer that contains at least 60% alcohol can be used (for staff and older children who can safely use hand sanitizer).[1]

CDC launched Life is Better with Clean Hands, a new national campaign designed to motivate adults to make clean hands part of their daily lives. Download and share them to help spread the word and encourage handwashing within your community.

1. CDC When and How to Wash Your Hands

Cloth Face Coverings

Teach and reinforce use of cloth face coverings. Face coverings may be challenging for students (especially younger students) to wear in all-day settings such as school. Face coverings should be worn by staff and students (particularly older students) as feasible, and are most essential in times when physical distancing is difficult. Individuals should be frequently reminded not to touch the face covering and to wash their hands frequently. Information should be provided to staff, students, and students' families on proper use, removal, and washing of cloth face coverings.

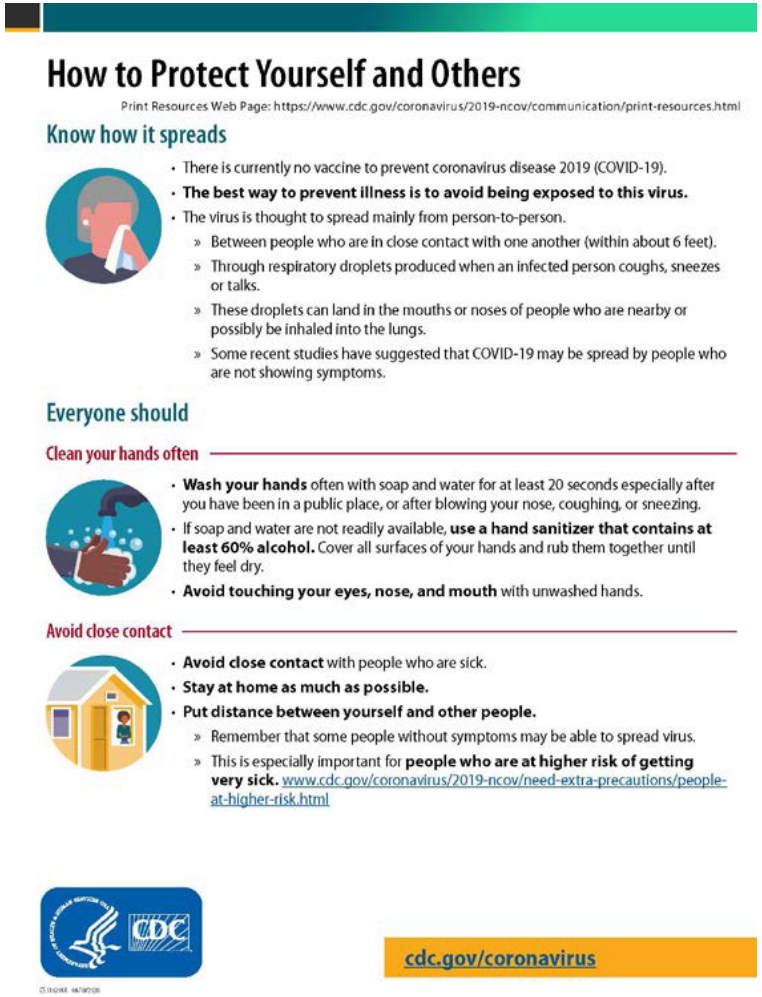
Cloth face coverings are meant to protect other people in case the wearer is unknowingly infected but does not have symptoms. Cloth face coverings are not surgical masks, respirators, or other medical personal protective equipment.[1]

1. CDC Considerations for Schools

How to Properly Wear a Face Covering

- Wash your hands before putting on your face covering
- Put it over your nose and mouth and secure it under your chin
- Try to fit it snugly against the sides of your face
- Make sure you can breathe easily[1]

Who Should Wear Face Coverings	Who Should Not Wear Face Coverings
▪ People older than 2 years of age in public settings where other social distancing measures are difficult to maintain	▪ Children under age 2 ▪ Anyone who has trouble breathing, or is unconscious, incapacitated or otherwise unable to remove the mask without assistance[2]



Share the CDC information for safely wearing masks with faculty, students and families.

1. CDC How to Wear Cloth Face Coverings
2. CDC About Cloth Face Coverings

Keep Supplies On-Hand

Support healthy hygiene behaviors by providing adequate supplies, including soap, hand sanitizer with at least 60 percent alcohol (for staff and older children who can safely use hand sanitizer), **paper towels, tissues, disinfectant wipes, cloth face coverings** (as feasible) **and no-touch/foot-pedal trash cans.**[1]

1. CDC Considerations for Schools

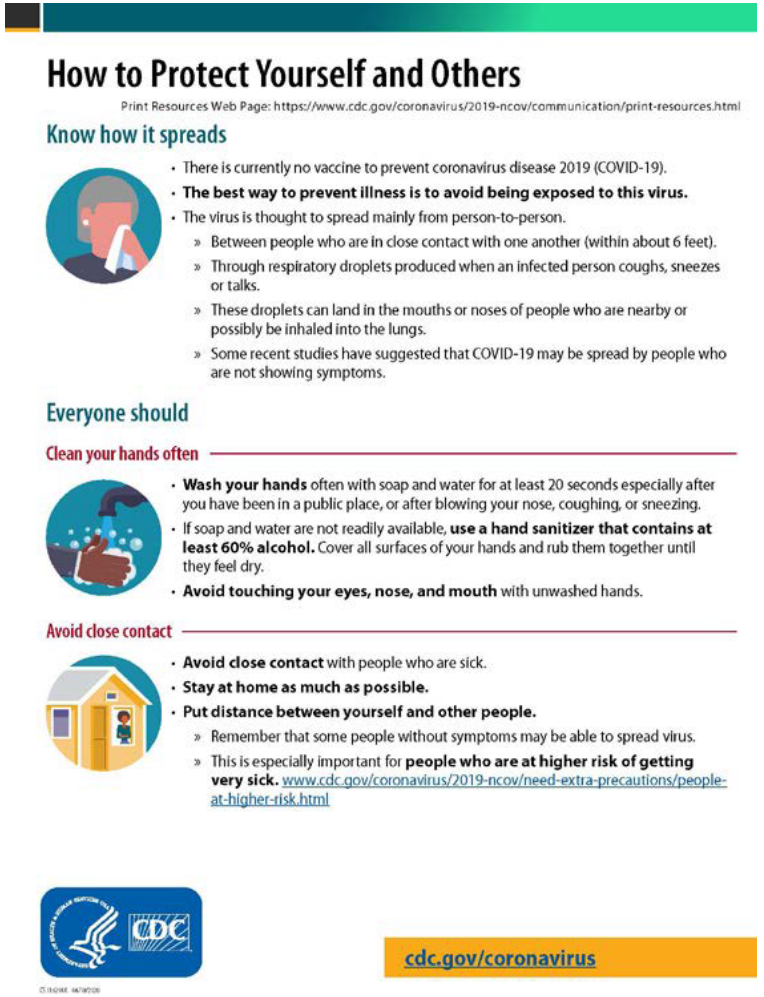
Signage and Messages at School

Post signs in highly visible locations (e.g., school entrances, restrooms) that promote everyday protective measures and describe how to stop the spread of germs (such as by properly washing hands and properly wearing a cloth face covering).

Broadcast regular announcements on reducing the spread of COVID-19 on PA systems.

Include messages (for example, videos) about behaviors that prevent the spread of COVID-19 when communicating with staff and families (such as on school websites, in emails, and on school social media accounts).

- Find free CDC print and digital resources on CDC's communications resources main page.[1]



The CDC has provided a library of signing designed to promote safe behaviors during the COVID-19 pandemic

1. CDC Considerations for Schools

Communal Spaces: Libraries & Science Labs

Libraries and Science Labs have unique challenges, and protocols will need to be adjusted to reflect the new practices of physical distancing, minimizing exposure and extra vigilance on disinfection and sanitation.

The Institute of Museum and Library Services offers a COVID-19 Resources for Libraries and Museums, including articles covering best-practices for cleaning play and learning spaces.[1]

In the science lab, the same classroom considerations regarding distance and disinfection apply.[2] High touch science equipment, such as microscopes and scales, will need to be sanitized before and after use.[3] This extra time required to perform these tasks will need to be built-in to the lesson planning.

1. Institute of Museum and Library Services
2. LabManager.com: Lab Health and Safety
3. CDC Considerations for Schools

Increased Disinfection of Surfaces and Apparatus in the Science Lab

Make sure that ALL LAB EQUIPMENT such as microscopes, hot plates, digital balances, autoclaves, dissection tools and other apparatus are cleaned vigilantly before and after each use.

PPE including goggles should be cleaned appropriately after use with an approved liquid disinfectant solution or UV sterilizer.

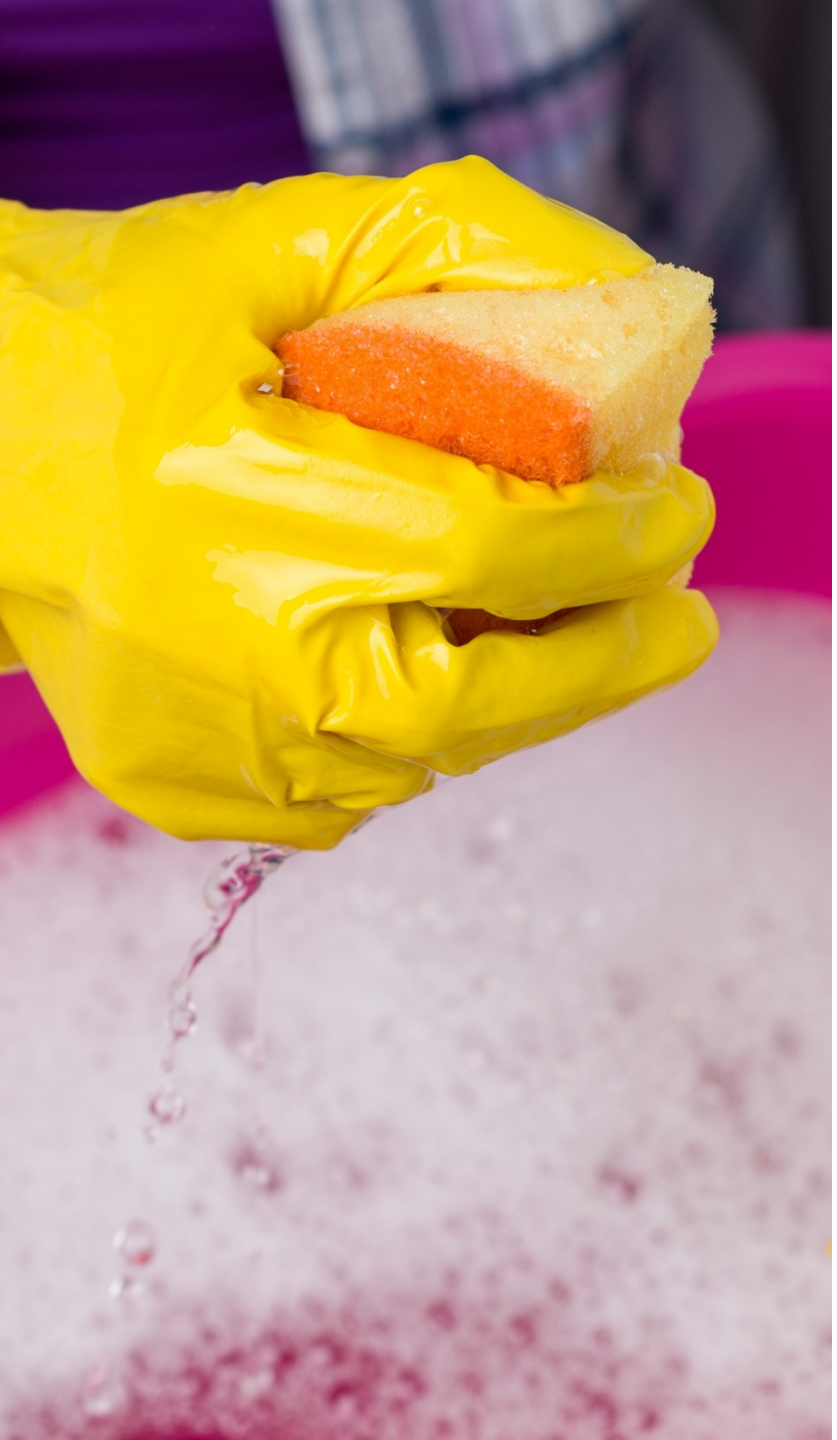
Disposable gloves are for one-time use only and follow procedures to remove them safely – and ensure they are discarded appropriately according to local protocols.

Make sure that hygiene protocols are followed from the CDC, WHO, UNESCO and the Federal, State/Provincial officers of health and safety.

EPA Disinfectants for Use Against SARS-CoV-2

CDC Considerations for Schools

https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html



Recommendations to Sanitize Science Equipment

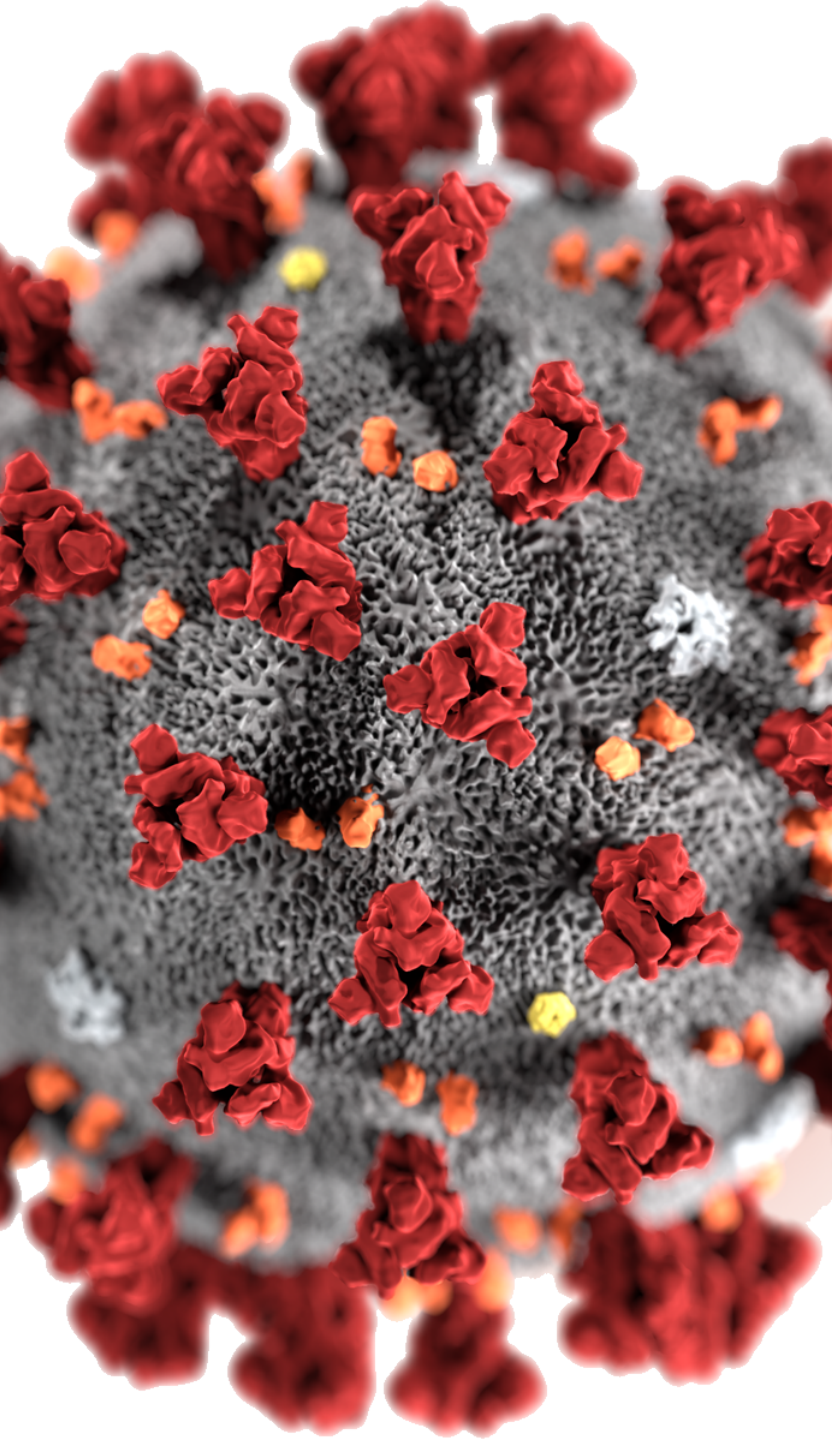
The WHO, CDC, OECD, Unicef and other large authorities are recommending that high-use items be sanitized pre and post usage. Lab equipment would be considered a high-touch item. Others in this category are art supplies, math manipulatives, toys, sports equipment and other tactile learning products.

The recommendation is to use warm soapy water when possible, and to use disinfectant or sanitizer when appropriate such as on electronic and delicate instrumentation.

The Lysol Dip method will be used based on adding an amount of disinfectant to warm water, and then using that to clean the lab instruments or apparatus and letting it air dry.

Safety glasses disinfect in the Lysol solution (1-1/4 ounces Lysol with one gallon of soft or DI water) for 15 minutes, rinsed with water, and allow to air dry. There is absolutely no damage or discoloration to any of the products. Water spots remaining on the lenses are easily removed using lens paper or a paper towel and leave no scratches or marks.

1. EPA Disinfectants for Use Against SARS-CoV-2
2. CDC Considerations for Schools
3. https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html



Cleaning and Disinfection in the Science Lab

You should also clean and disinfect more frequently if you have young children, or if you work in a job where you're exposed to a lot of people who may be ill (e.g., a doctor's office) or you are in regular, close contact with the public or in schools.

When in doubt, disinfect! The easiest and fastest way to clean and disinfect your home is to choose a product that does both. Examples of common products that both clean and disinfect are Lysol™, Virox,™ and Fantastik™. Products should contain sodium hypochlorite, quaternary ammonium, or hydrogen peroxide in sufficient quantities to kill 99.99% of bacteria and viruses that are harmful to people. **Read the label of the cleaner / disinfectant you intend to use to see whether it contains one of these ingredients, and if it claims to be able to kill 99.99% of "germs".**

An alternative to choosing a product which both cleans and disinfects is to first clean with a soap or detergent (such as Mr. Clean™, Green Kitchen Cleaner™, or CLR™), and then disinfect surfaces where bacteria or viruses are most likely to be found with a disinfectant.[1]

1. Public Health Authority of Canada Guidelines on Disinfection in the Workplace

Cleaning and Disinfection – Continued

How should I clean?

- **Disinfect commonly used fixtures and equipment often, or when visibly soiled.**
- **Clean and disinfect other fixtures, furniture and equipment on a regular basis.**
- **Disinfect waste baskets as needed.**

An easy way to prepare a disinfectant solution is to mix 1 part bleach to 100 parts water (e.g., 10 ml bleach in 1 liter of water). It's better to prepare a solution with the disinfectant, dip your cloth or sponge into the solution, and then wipe it onto the surfaces you want to disinfect.

Spraying products may damage expensive furniture or expensive equipment, like computers. Some cleaning products will damage surfaces – when in doubt, check with a janitorial supply store. And always wear rubber gloves when handling disinfectants.

1. Public Health Authority of Canada Guidelines on Disinfection in the Workplace

Recommendations to Sanitize Science Equipment & Apparatus

The use of a disinfectant on a cloth which is then used to clean the surfaces is encouraged. Some people will prefer to use a disinfectant wipe and dispose of it accordingly after use.

Many recommendations are based on the use of a disinfectant wipe on science equipment both pre and post usage. Ensure that all products used for cleaning and disinfection are FDA / EPA approved.

Pump sprayer bottle tops allow for the alcohol-based sanitizer to be accurately aimed towards the surface being cleaned with minimal overspray or waste.

DO NOT spray alcohol-based sanitizer on any lab equipment that is hot or warm such as a hot plate, recently used Bunsen burner or soldering iron.

1. EPA Disinfectants for Use Against SARS-CoV-2
2. CDC Considerations for Schools
3. https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html

Cleaning and Disinfection of Science Equipment, Apparatus, Materials and Workstations

Develop a rigorous schedule for increased, routine cleaning and disinfection. Follow directives from school district and DOE policy.

Ensure safe and correct use and storage of cleaning and disinfection products,[1] including storing products securely away from children. Use products that meet EPA /FDA disinfection criteria.

Cleaning products should not be used near students, and staff should ensure that there is adequate ventilation when using these products to prevent children or themselves from inhaling toxic fumes.[2]

1. EPA Disinfectants for Use Against SARS-CoV-2
2. CDC Considerations for Schools

Overall Suggestions for Teaching Science

Having the teacher perform the activity and having it recorded for the class will provide a consistent platform for learning and for basing questions and inquiry activities if doing 'blended learning model'.

Doing the same activity more than once so that the students have the hands-on tactile learning appreciation from the lab activity if 'staggered day model'.

Collaborating with colleagues so that there is a combined framework or rubric used for teaching students with a digital element in combination with a sharing of resources and equipment to offer a safe and solid science program.

Following guidance from the school district and State/Provincial education authorities on best-practices and tools to integrate this pedagogical style into the mainstream school systems.

Always model proper safety protocols in your lessons and wear your PPE to demonstrate expected behavior in the lab. NEVER work alone in the lab – have a partner with you for safety and compliance.

1. Flinn Scientific Inc. Professional Learning Series Summer 2020

Suggestions on Dealing with Physical Distancing in Science Laboratories

With the expectation that there is a 6 foot (2m) distance between students, this will be difficult to implement in schools and in science labs in particular. The small lab stations used cannot be used to accommodate more than one student.

Lab work in science is typically a team effort, and without being able to have a lab partner physically present, the activities may need to be modified to suit the new single-person observation mode.

Offset seating, all facing in one direction, and with minimal social interaction can contribute to increased anxiety and stress while at school.

Traditional lab layouts are not conducive to this separation model and require considerable time and energy to devise a plan for student learning that provides a robust platform for growth.

1. http://www.oecd.org/coronavirus/policy-responses/youth-and-covid-19-response-recovery-and-resilience-c40e61c6/

Suggestions for Biology Lessons

Teaching biology concepts such as physiology and anatomy systems are greatly enhanced with dissections, the use of a microscope to investigate, and models to illustrate various biotic processes.

Having students perform lab investigations is essential to their overall understanding and application of these fundamental concepts.

Capturing the activity being performed from an angle and perspective from the student will increase their grasp of the activity (dissection, microscopy, anatomy, etc.)

The use of narration over the images can be valuable as a teaching tool for many students and allows for review of the concept.

Consider the application of some digital biology programs to enhance learning such as digital dissections and other solutions for teaching.

1. Flinn Scientific Inc. Professional Learning Series Summer 2020

Suggestions for Chemistry Lessons

Teaching chemistry involves the use of multiple chemicals, glassware, and apparatus in the science laboratory. Chemistry involves the observation and understanding of multiple chemical interactions, processes, and reactions in a controlled environment. This can be a challenge in a traditional school setting.

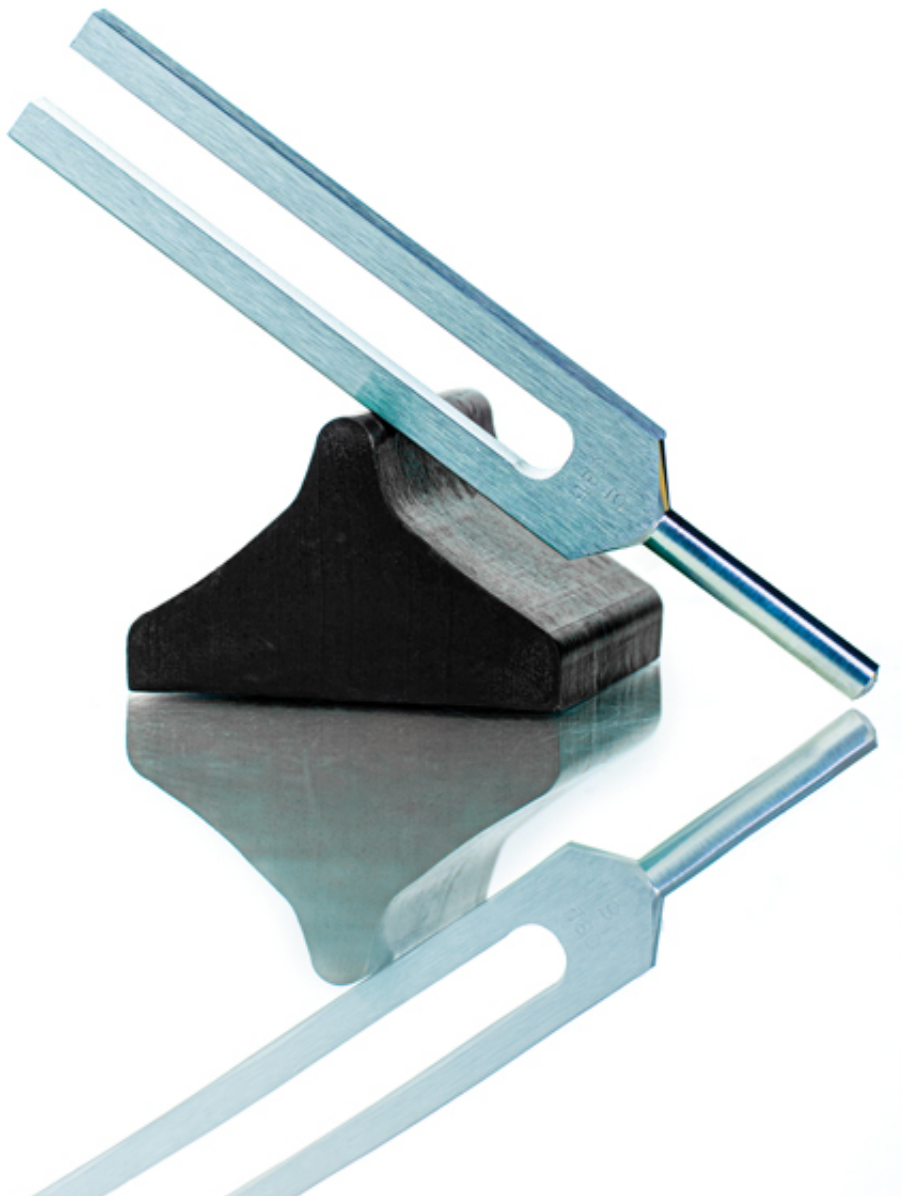
Having students perform lab investigations is essential to their overall understanding and application of these fundamental concepts.

Capturing the activity being performed from an angle and perspective from the student will increase their grasp of the activity (dilution, titrations, heating, mixing etc.)

The use of narration over the images can be valuable as a teaching tool for many students and allows for review of the concept.

Opportunity to engage some online learning solutions for chemistry such as digital labs, chemical interactions and periodic table interactions are possible.

1. Flinn Scientific Inc. Professional Learning Series Summer 2020



Suggestions for Physical Science Lessons

Teaching physics can be challenging in a traditional setting. The understanding from the combination of various scientific laws and their application to society are essential to engineering, technology and science advancement overall.

Having students perform lab investigations is essential to their overall understanding and application of these fundamental concepts.

Capturing the activity being performed from an angle and perspective from the student will increase their grasp of the activity (motion, magnetism, density, thermodynamics, optics, waves etc.)

The use of narration over the images can be valuable as a teaching tool for many students and allows for review of the concept.

Integration of some physics simulation software may be useful for demonstrating various models to students and benefit their learning continuum.

1. Flinn Scientific Inc. Professional Learning Series Summer 2020

Suggestions for PPE usage in Science Labs

The OH&S laws are very clear that ‘every person in the lab must have appropriate PPE accessible to them and they must wear it properly when conducting science activities…’

With an emphasis on PPE due to the COVID-19 outbreak, there is likely going to be an increase in the use and consumption of many items including masks, gloves, and safety eyewear.

The frequent use of a UV goggle sterilizer cabinet is a trusted disinfection method used in healthcare facilities to sanitize eyewear after use.

Having more than the traditional amounts of gloves on hand is recommended for the increased frequency of use and disposal after handling science equipment and apparatus.

Face coverings will be a local decision, but if needed, these must be available to students and teachers in the school.

Hand hygiene behaviors including the use of trusted soap and water, hand sanitizers, and wipes will likely become mainstream events.

1. https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450
2. https://www.refinery29.com/en-ca/2020/05/9845397/does-uv-light-kill-coronavirus
3. https://sites.nationalacademies.org/BasedOnScience/covid-19-does-ultraviolet-light-kill-the-coronavirus/index.htm
4. https://www.nature.com/articles/s41598-018-21058-w

Basic Safety Protocols in Elementary School

Being proactive (prevention) is the best remedy to any situation. **Teachers modelling proper behaviors in the classroom (wearing goggles or gloves) is a solid foundation towards setting the culture in the classroom. Safety exists as a standard in the workplace – and so it should be the same standard in the school classroom.**

Additionally, teachers having an awareness of the potential hazards that exist with the use of tools, science equipment and apparatus, and especially with the use of chemicals is very important. Make sure that the students are washing hands often and that you sanitize all equipment and tools prior and post usage with the class. This is the new normal.

Teachers should be able to properly recognize safe procedures in the classroom and to identify areas of concern to minimize the risk of injury to students. This is often referred to as a '**Hazard Identification or Assessment' across various platforms of teaching.**

1. Flinn Scientific Inc. 2020 Elementary Science & STEM Safety Academy

Safety Concerns When Students Are Working Remotely (At-home) Without Teacher Supervision

Having students learning remotely creates its own challenges from a classroom management, continuum of learning and a safety perspective. By recognizing that not every home will have the essential PPE items, access to common chemicals and items *(vinegar, baking soda, food dyes, sugars, salts, starch and straws, plastic cups, balances, coffee filters etc.*)

There are safety concerns that result from the choice of student-managed science / STEM activity and there are ways to minimize these risks or hazards, but there is responsibility on the part of the student and the parents/guardians to cultivate and practice safe procedures and techniques in order to learn about the science being demonstrated. The teachers will need to be especially safety conscious when selecting remote learning activities that use any potential hazards including consumer commodities listed in their procedures/instructions for each activity.

1. Flinn Professional Learning Series 2020
2. https://www.nsta.org/science-teacher/science-teacher-julyaugust-2020/remote-learning-problem-or-opportunity

Safety at Home Concerns Continued

Teachers will need to over-communicate their expectations and ensure that the following guidance is adhered to with their students:

1. **Encourage parent/guardian supervision when doing science activities when possible / practical**
2. **Encourage students to follow the prescriptive lesson instructions sequentially**
3. **Have contingency safety protocols in place (In case of X, do Y…)**
4. **Choose age / grade / level appropriate activities**
5. **Choose readily available items typically located in a home**
6. **Have students watch a pre-recorded version from the teacher so that they have a better understanding of the possible outcome and procedures to follow when conducting the activity themselves**
7. **The development and use of a Remote Science Safety Contract**

1. Flinn Professional Learning Series 2020
2. https://www.nsta.org/science-teacher/science-teacher-julyaugust-2020/remote-learning-problem-or-opportunity

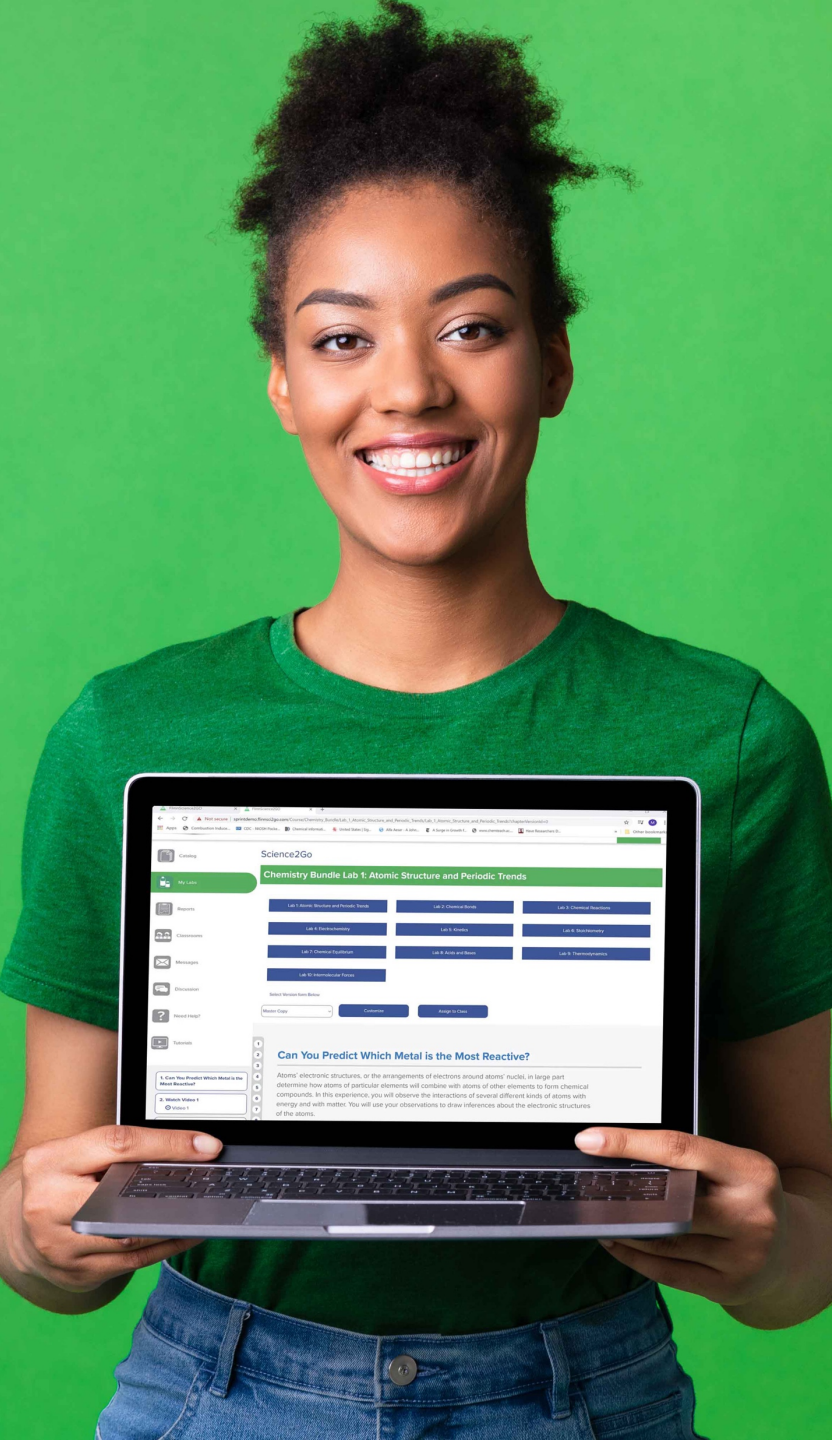
Providing Kits/Items To Students To Use In Their Science Investigations Remotely?

There has been some discussion regarding the use of student kits for use in a remote teaching/learning environment that provides the basic PPE, some basic plasticware, common reusable items and core product that will facilitate student learning.

There are risks associated with having students performing lab activities on their own, and by providing them with products, the liability question leans heavily on the school district…who ordered and delivered (provided) the products to the students. There would be an expectation for synchronous learning and that students demonstrated competency regarding the use of these kits prior to using them independently.

The use of alternative digital applications in a synchronous / asynchronous environment should be explored that can provide an authentic science learning experience while mitigating the science safety concerns. This could be a teacher recorded version of the lab activity or a publisher / supplier solution that could be used to supplement core learning and teaching strategies.

1. Flinn Professional Learning Series 2020



Science2Go Platform To Maintain The Continuum Of Learning For Students

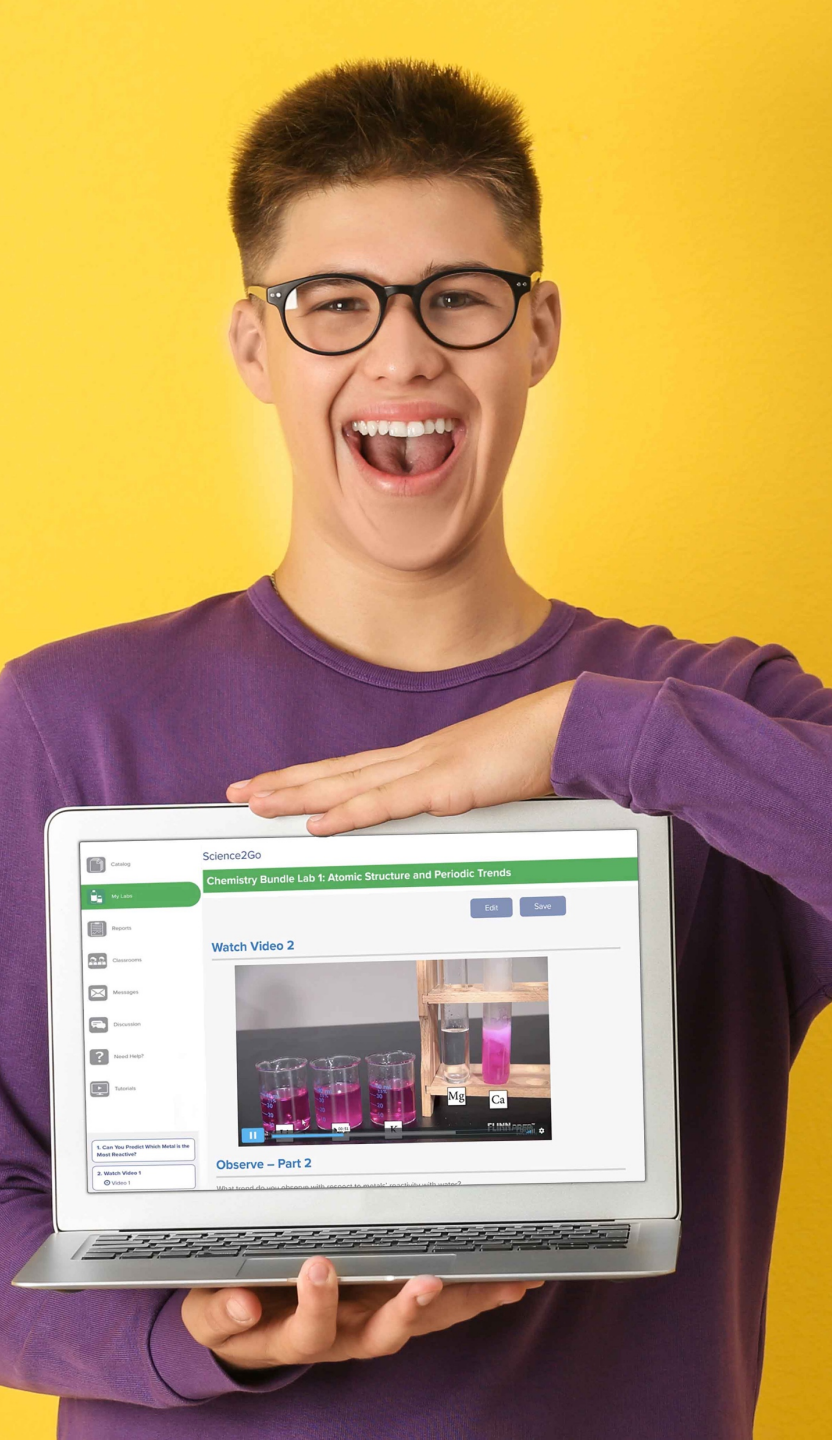
"Science2 Go is a digital solution that offers a new approach to lab education - allowing middle and high school students to "do science" whatever the learning environment - Remote, Blended, Flipped and In-School.

With Science2Go, students engage in the process of scientific thinking – without traditional labs and supplies.

Each lab begins with a guiding question to focus student thinking. Students watch videos that demonstrate real lab techniques and get access to real lab data so they can engage in scientific practices including observation and analyzing data to make predictions

Students are also encouraged to identify design flaws and refine their experiments.

1. Science2Go



Science2Go Platform To Maintain The Continuum Of Learning For Students

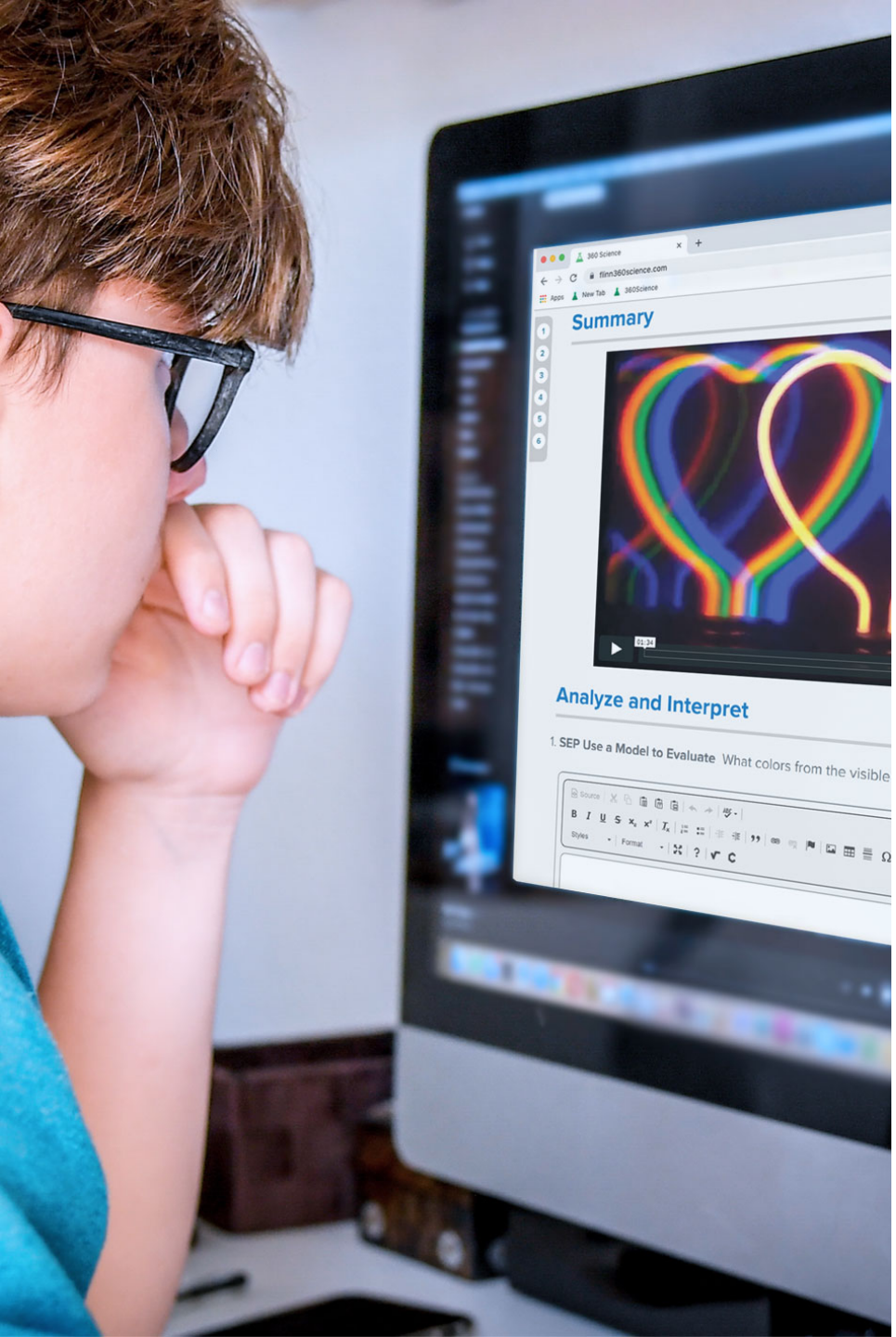
Scientific reasoning skills are covered as students connect what they learned in the lab to the natural world.

They can also go deeper with links to simulations, at-home activities and recommendations for hands-on kits.

Teachers using Science2Go can easily customize labs to best meet the needs of their students - by editing text and uploading videos, images or documents.

Developed with teachers detailing the challenges they face in teaching science in a COVID-19 school year, Science2Go is aligned to NGSS and other state standards. It includes lab activities for High School Biology, Chemistry, Environmental Science and Physics and for Middles School Life Science and Physical Science

1. Science2Go



360Science Builds On Science2go

What is 360Science?

Flinn's 360Science™ is a customizable lab learning solution that surrounds teachers with all they need to incorporate more hands-on learning into the classroom or lab with a unique combination of easily modified hands-on lab experiences that are complemented by robust digital activities.

360 Science was born out of Flinn's partnership with Pearson in the formation of their high school chemistry curriculum that includes a **unique instructional approach in that it begins each day with an inquiry lab** supported with written research in a traditional textbook format. This approach intensifies the need for hands -on learning in the classroom, supporting NGSS Standards and other state sciences standards. Every lab is aligned to NGSS and other science standards.

360Science consists of 200 individual labs.

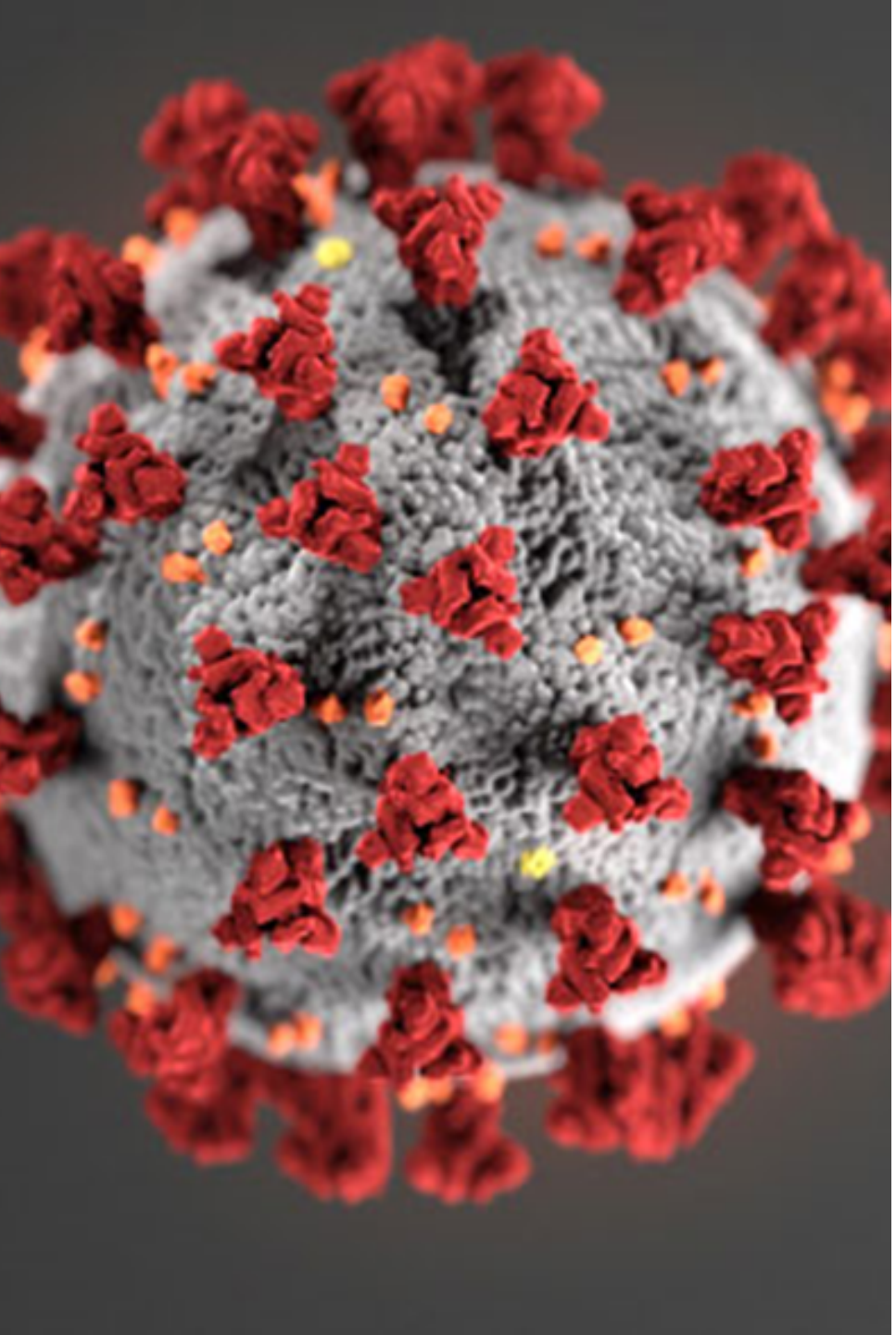
Types of Preventative Measures We Can Take to Minimize the Spread of a Contagious Virus

Wash your hands! It seems very basic, but this is highly effective mechanism to prevent this virus from spreading through contact. 20 seconds of rigorous hand washing is the accepted amount of time. Soap and water is ideal, followed by alcohol-based sanitizer gels or liquids if you cannot access soap and water.

Sanitize your mobile phone, computer keyboard and work area. Use a disinfectant wipe to thoroughly clean your workspace before and at the end of your work or school day. Viruses can survive on surfaces for long periods of time. The same applies to the science equipment and hand tools used in the STEM classroom. Be vigilant about cleanliness.

Social distancing has also proven effective since maintaining a safe distance from a person who is coughing or sneezing (2m or 6 feet or more) minimizes the potential that the small liquid droplets released by the sick person will be inhaled or absorbed by you. The COVID-19 virus could be inside the droplets – so be mindful for your sake!

1. CDC Considerations for Schools



Prevention – continued

Don’t touch your face, eyes, ears, nose or mouth. Your hands are in contact with many surfaces and these are all potential sources of the Coronavirus or similar virus. By then touching your face and other organs, you increase the chance of contaminant transmission to your body and getting sick. It’s amazing how often you touch your face in an average day. **This is why sanitizing your classroom is important and non-negotiable in the STEM environment including items used. Students are not always the most sterile people.**

Make sure you and your students cough or sneeze into your elbow or some tissues. Seems simple, but it minimizes the droplets being distributed and increasing the chance of viral spread. Employing common sense hygiene techniques are effective. The virus can survive on your hand, clothing smartphone and work area tools and utensils for hours and potentially days just waiting to be transmitted through touch. **Ensure your students follow your lead in this action.**

1. CDC Considerations for Schools

Shared Objects

Discourage sharing of items that are difficult to clean or disinfect.

Keep each child's belongings separated from others' and in individually labeled containers, cubbies, or areas.

Ensure adequate supplies to minimize sharing of high touch materials to the extent possible (e.g., assigning each student their own art supplies, equipment) or limit use of supplies and equipment by one group of children at a time and clean and disinfect between use.

Avoid sharing electronic devices, toys, books, and other games or learning aids..[1]

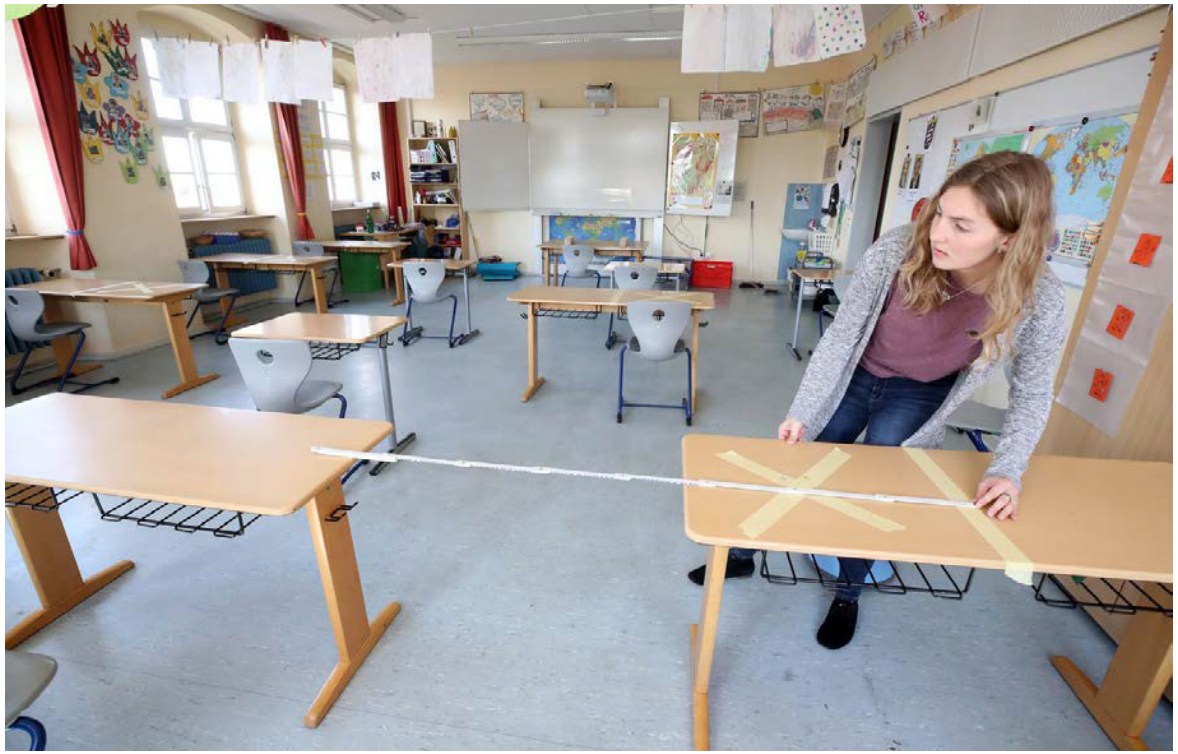
1. CDC Considerations for Schools

How Can You Minimize Potential Risks/Injury in the Classroom?

1. Teacher training and planning-ahead for science / STEM activities can help to mitigate possible risks/hazards/injury.
   - **Could you identify the safety hazards in the activities you have planned?**
   - **Did you sanitize/disinfect the tools and equipment prior to use?**
2. By planning for the classroom materials you will use and where they will be placed/handed out to the class
   - **Do you typically leave materials in one area and let students work independently or do you employ station-based learning?**
   - **Did you sanitize/disinfect the tools and lab equipment prior to storing them away?**
3. Teachers need to demonstrate proper safety practices (scissors, tools, sharp blades, goggles etc.) and tell students why these are critically important rules to be followed.
   - **Do you review the instructions with your classroom prior to the activity?**
   - **Demonstrate washing hands and sanitizing work spaces often and ensure students do the same.**
4. Teachers should also plan for potential problem situations and how to manage them.
   - **Do you practice fire drills? How about safety rules if a student was injured? Consider a role-play activity for students around safety.**

Modified Classroom Layouts

Schools in other countries have begun opening and making modifications to the classroom with safety in mind. Physical distancing and PPE are very critical pieces to the safe re-opening of schools globally. Follow direction from your local health and education authority.



Elementary school in Heppenheim, Germany, April 21, 2020[1]

Gymnasium Steglitz school in Berlin, Germany, April 20, 2020[2]

1. Alex Grimm, Getty Images. From: USA Today What schools will look like when they reopen
2. Alex Schmidt, Retuers. From: Retuers: Germany Cautiously Reopens Schools

Additional Modified Classroom Layouts

Hong Kong, China, April 24, 2020[1]

1. Jerome Favre, Reuters. From: Reuters: Masked Hong Kong students take final school exams after coronavirus delay

Physical Barriers and Guarding Guides

Install physical barriers, such as sneeze guards and partitions, particularly in areas where it is difficult for individuals to remain at least 6 feet apart (e.g., reception desks).

Provide physical guides, such as tape on floors or sidewalks and signs on walls, to ensure that staff and children remain at least 6 feet apart in lines and at other times (e.g. guides for creating “one way routes” in hallways).[1]

Photo: Teacher installs a plexiglass frame in an elementary school in Heppenheim, Germany, April 21, 2020[2]

– Dr. Ken Roy, NSTA Safety Minute June 29, 2020
Plexiglass is not recommended for continuous use in labs using certain hazardous chemicals. There is the potential risk of immediate damage occurring such as severe crazing, cracking, or permeation losses. Chemicals include use of Nitric acid, Sulfuric acid, Acetone, Acetic acid, etc. This would especially apply to chemistry labs, tech ed and STEM labs.

1. CDC Considerations for Schools
2. Alex Grimm, Getty Images. From: USA Today What schools will look like when they reopen
3. https://brainresearchlab.com/wp-content/uploads/Plexiglass-Chemical-Resistance-Properties.pdf

Suggestions on Ordering Lab Supplies

Based on the style of learning and the student population, you may need to adjust your ordering of science supplies to align with the instructional model / learning strategy.

If your school is opening with a traditional classroom / lab with a full class enrollment set-up, then minimal disruption to your traditional ordering should occur. If using a ‘blended learning’ approach, you may need more supplies than you typically used if you plan to have students individually complete certain lab activities with your supervision.

Make sure that you have an abundance of PPE readily available and that you follow hand hygiene and disinfection protocols with the students and that you model safe PPE usage and behavior.

Ordering sooner to ensure that you have the products needed for your science program will ensure that you are not searching for needed items for your activities and investigations with your classes.

Contact FLINN for your complimentary Purchase Guides based on each grade and subject area.

1. Flinn Scientific Inc. Professional Learning Series Summer 2020

Should I Be Ordering My Supplies for when I Get Back To School?

We are happy to accommodate any requests for orders and a future shipment date or even shipping to a secure location in the school district.

Flinn wants to ensure that you have the science equipment, apparatus, specimens, chemicals, glassware, PPE, and related materials when you get back to school.

Please let us know how we can work within your school district policies and help you deliver a solid, safe science program in your school.

1. Flinn Scientific Inc. Professional Learning Series Summer 2020

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Ask about our custom district solutions designed to support a safe return to school:

- Custom safety and professional development/learning proposals to ensure full school safety
- Full PPE for students, faculty, and support staff
- Blended science learning solutions that provide continuity of lab instruction for both onsite & remote learners

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