Safety Protocol

All of the lab chemicals (simple stains, 70% ethanol for cleaning) are non-toxic but not to be ingested. However, the stains will PERMANENTLY STAIN ANYTHING THEY CONTACT including skin, clothing, flooring, and furniture. Always use plastic covering and only utilize staining chemicals wearing gloves, lab coat, and use plastic sheeting over all surfaces (desk and floor below). Garbage should be disposed in the red sharps/biohazard container for convenience but no items used are a bio or chemical hazard and can be disposed of in a normal garbage. In the event of any spills, clean with paper towels and bleach wipes. When done with all lab activities, the red sharps/biohazard box can be directly disposed of in the garbage.

Skin exposure: all chemicals are non-toxic but may stain, wash with soap and water
Eye exposure: thoroughly flush with water
All items are non-toxic but not to be ingested.

Sterile Technique

What is Sterile Technique?
Sterile technique is the practice of protecting organisms from escaping and entering a system of interest.

Importance:
- Keep you safe from contamination
- Keep your projects safe from contamination
- Keep the environment safe from contamination

Applications:
In healthcare, we hope that proper precautions are taken to prevent the spread of infection. Professionals follow sterile techniques by wearing PPE (personal protective equipment) as well as creating sterile and sanitary barriers between you and medical equipment, eg plastic coverings.
Laboratory environments are similar; scientists want to protect their work from contaminants. Contamination in research can be detrimental to the validity of the study, and be null altogether.

How to maintain a sterile environment in a real-life laboratory:
- Wipe down a small working area on the lab bench with 70% ethanol / diluted bleach.
- Work in a ventilation hood, or any environment where there is a draft leaving your zone and filtering air
- Use sterile reagents, micropipette tips, and test tubes. Tips and microcentrifuge tubes should be kept in covered containers when not in use
- Minimize contamination from clothing and body surfaces. Pull back and secure long hair. Avoid touching or breathing on sterile surfaces that will contact microorganisms.
- Avoid talking when you are transferring strains

At home:
You can still practice sterile technique with the equipment provided:

- Wipe down your workstation with Clorox Bleach Wipes
- Place the plastic sheet provided over the sterilized workstation
- Wear your lab coat (not only as PPE, but to prevent dyeing your clothes!)
- Wear gloves
- Unpack your supplies in your workplace
- And when finished, dispose of biohazardous waste (eg used cotton swabs, gloves, etc) in the red biohazard box

Setting Up Your Workspace

Materials:

- Lab coat
- Gloves
- Clorox bleach wipes
- Swabs
- Plastic sheet
- Red biohazard/sharps container
- Glass slides and coverslips with the case
- Dyes
    - Methylene blue
    - Eosin
    - Gentian Violet
    - Iodine
- Ethanol
- Microscope
- Personal laptop
- Personal water source (cup with a spoon)

Lab Setup

1. Lay out plastic sheeting to protect your table or desk top, and protect the floor underneath. There should be 2 pieces of plastic sheeting in the top of your box.
2. Unload red sharps container and place empty onto the plastic sheeting on the tabletop. Snap the translucent plastic lid onto the top but be sure the sliding access window through which you will dispose items remains open. Do not snap this window all the way closed until you are ready to dispose of the entire container, as it remains shut tight and will not reopen easily.
3. Put on your lab coat and button up. The lab coat is there to protect you and your clothing from any stains or contamination.

4. Put on nitrile gloves. Gloves can be cleaned as you work by spraying a little bit of ethanol onto your hands. If they remain clean, you can even reuse them once or twice.
5. Apply a small amount of 70% ethanol (ETOH) in the black dropper bottle to a paper towel, and wipe off your work area. Dispose of the towel in the sharps container.
6. Set out your microscope and connect to your computer.
7. Carefully arrange items around your work area on the plastic sheeting, leaving room in the middle for you to work– this includes the dropper bottles, the slide case, the swabs, the paper towels, and the bleach wipes.
8. Fill your water dropper bottle with clean water and set out. *2022 students— we forgot to include an extra dropper bottle for water. You can use a small cup and a spoon from which you can dispense single drops– sorry!
9. As you work, be very careful to use very small amounts of any liquids– for the stains, a single drop goes a long way. Perform all tasks with liquids over the top of the sharps container to catch any spillage. Clean any spills immediately with paper towels.

Lab Cleanup

Be sure all liquid containers are closed firmly *and empty any cups of water in use.

1. Rinse off slides or slide covers which you do not plan to reimage with water and then 70% ETOH and then wipe off with a paper towel.
2. Pack all slides back into slide case. If you wish to dispose of a slide or slide cover, place into sharps container.
3. Apply a small amount of 70% ethanol (ETOH) in the black dropper bottle to a paper towel, and wipe off your work area. Dispose of the towel in the sharps container.
4. For any extra cleanup of more heavily soiled areas, use a clorox bleach wipe for cleanup.
5. There should be no standing liquid in your sharps containers. If there is, add paper towels into your sharps container to soak up any liquid. Do not fully close the access window to the sharps container until you are completely done for the week and ready to dispose entirely.
6. If you have a desk or table area which will remain undisturbed and is out of the way for the week, and you receive parental/gaurdian approval, you may leave the plastic sheeting, closed slide case, closed liquid bottles, and additional items clean but laid out ready to use.
7. Otherwise, carefully pack sharps container into your box first– put into the corner of your box with nothing underneath so it is stable and upright. Then pack all of your other items around it (plastic sheeting, liquid bottles, slide case, etc.).
8. Remove your nitrile gloves– dispose into sharps container or if unsoiled you may apply a few drops of ethanol and rub your hands together to clean the gloves, then carefully remove them to save the gloves for another use.
9. Remove your lab coat and place into the box.
10. Store the box out of the way where it will not be accidentally knocked over.