Lab #1 – Laboratory Safety and Equipment

Objectives:

- Identify the locations of important safety information and equipment.
- Understand how to properly use safety equipment in the laboratory.
- Understand the importance of being prepared for working in the laboratory.
- Identify and properly use waste containers and basic lab equipment.
- Understand your rights and responsibilities in the laboratory.
- Sign the agreements for Safety Rules and Rules for Eye Protection for the STEM Division at DCCC.

I. Preparation

The laboratory exercises for each laboratory must be read before the laboratory period.

1) You must wear your gloves AND safety glasses during all exercises involving laboratory equipment, chemicals, glassware and preserved specimens.
2) Use extra caution if you need to use your scalpel or scissors.
3) Ask the instructor for supervision when changing your scalpel blade.
4) DO NOT touch anything but your equipment, instruments, specimens, etc. with your gloves on (ie. Not your laboratory manual).
   - Prepare your reference materials before beginning the exercise
   - Remove your gloves if you need to make notes, turn pages, etc.

There are two reasons to wear gloves:
   i) to protect yourself and others from harmful chemicals (do not contaminate your work area)
   ii) to prevent contamination of the chemicals

5) Check the location of safety materials within the laboratory.
6) *Always bring: safety glasses, laboratory exercises, textbook, GLOVES (several pairs!), dissection kit, unruled paper, pencil, and proper shoes.
   You are always responsible for having these materials.
7) Be prepared to log on to the lab computers when necessary using your username and password.

II. Laboratory Materials / Clean up.

1) The laboratory is to be left the same or cleaner than when you entered it.
2) You must disinfect your bench BEFORE you put any of your own materials on it.
   You do not want to contaminate your things.
3) All materials used by yourself and/or your group are to be put away properly before leaving. Failing to do so may result in lost points for the laboratory.
4) Your equipment and bench should be cleaned and disinfected before leaving the laboratory.
5) You must take extra care not to clog the sinks. All large debris must be disposed of in the appropriate garbage bin before the tray is washed. Utilize the strainers and check for clogging. Use the appropriate waste containers. If you are not sure, ask your instructor.
6) You should disinfect your laboratory aprons before AND after using them.
7) When you are completely cleaned up—the last thing you MUST do before you leave is wash your hands.

III. Identification of Waste Containers

There are four types of waste containers on display in the lab:
1. Glass Waste Container
2. Sharp Object Waste Container
3. Specimen Waste Container
4. Chemical Waste Container
Observe these containers and answer the questions in your lab report.

<table>
<thead>
<tr>
<th>Waste Containers</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Glass waste container</td>
</tr>
<tr>
<td>☐ Sharp object waste container</td>
</tr>
<tr>
<td>☐ Specimen waste container</td>
</tr>
<tr>
<td>☐ Chemical waste container</td>
</tr>
</tbody>
</table>

Last updated 02/13/2017
### IV. Identification of Basic Biology Laboratory Equipment

Observe the lab equipment on display and answer the questions in your lab report.

<table>
<thead>
<tr>
<th>Basic Bio Lab Equipment</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Beakers (250 ml, 100 ml)</td>
<td><img src="image1" alt="Beakers Image" /></td>
</tr>
<tr>
<td>□ Graduated cylinders</td>
<td><img src="image2" alt="Graduated Cylinders Image" /></td>
</tr>
<tr>
<td>□ Test tubes in Test tube rack</td>
<td><img src="image3" alt="Test Tubes Image" /></td>
</tr>
<tr>
<td>□ Test Tube &amp; Holder in Action</td>
<td><img src="image4" alt="Test Tube &amp; Holder Image" /></td>
</tr>
<tr>
<td>□ Disposable pipette</td>
<td><img src="image5" alt="Disposable Pipette Image" /></td>
</tr>
<tr>
<td>□ Chemical reagent and attached dropper in action</td>
<td><img src="image6" alt="Chemical Reagent and Dropper Image" /></td>
</tr>
<tr>
<td>□ Ruler and measurement</td>
<td><img src="image7" alt="Ruler Image" /></td>
</tr>
<tr>
<td>Balance and measurement</td>
<td>Thermometer and measurement</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><img src="image1" alt="Balance Image" /></td>
<td><img src="image2" alt="Thermometer Image" /></td>
</tr>
<tr>
<td>Measurement = 73.6 g</td>
<td>Measurement = 23.5 °C</td>
</tr>
</tbody>
</table>

**Dissection kit**

A. Blunt Point Dissecting Probe  
B. Sharp Point Dissecting Probe  
C. Blunt/Sharp Dressing Scissor  
D. Dissecting Forceps  
E. Scalpel Handle  
F. Disposable Scalpel Blade
V. Location of Safety Equipment and Resources

<table>
<thead>
<tr>
<th>Nearest telephone:</th>
<th>Emergency telephone numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency exits:</td>
<td></td>
</tr>
<tr>
<td>Fire extinguisher:</td>
<td></td>
</tr>
<tr>
<td>Emergency shower:</td>
<td></td>
</tr>
<tr>
<td>Emergency kit:</td>
<td></td>
</tr>
<tr>
<td>Eyewash station:</td>
<td></td>
</tr>
<tr>
<td>Safety Data Sheets (SDS):</td>
<td></td>
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<tr>
<td>Fire alarm location:</td>
<td></td>
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<tr>
<td>Additional safety instructions</td>
<td></td>
</tr>
</tbody>
</table>

Microscope / station #___________

VI. STEM Division Student Biology Laboratory Safety Rules and Rules for Eye Protection

Your instructor will go over the Student Biology Laboratory Safety Rules and Rules for Eye Protection with you verbally. In addition, your instructor will demonstrate the location of safety equipment. Please pay close attention since these rules are for your protection. Each student will receive two copies of these safety rules. One copy is provided for students to sign, date, and return to the instructor. Students should keep the second copy for reference.
Lab Report #1 Laboratory Safety and Equipment

Name:__________________________

III. Identification of Waste Containers

Refer to the waste containers displayed on the counter top to answer the following:

1. Used scalpel blades should be discarded into:                          # _____ container

2. Chemical waste should be poured into:                                 # _____ container

3. Animal tissue waste should be placed into:                            # _____ container

4. Broken test tubes / beakers should be discarded into:                # _____ container

IV. Identification of Basic Biology Laboratory Equipment

1. Use a ruler to measure the length of a disposable pipette.            _______ cm

2. Use a balance to measure the weight of a disposable pipette.         _______ g

3. Read the volume of the solution in the graduated cylinder on display _______ ml

4. Read the temperature of the thermometer on display.                  _______ °C.

5. Refer to the dissection tools displayed on the counter top and provide their label:

   a. blunt point dissecting probe is labelled _______

   b. sharp point dissecting probe is labelled _______

   c. disposable scalpel blade is labelled _______

   d. dissecting forceps is labelled _______

SCORE: ________________/ 12
VI. Laboratory Safety Quiz

1. Why should you be prepared for lab? ____________________________________________________________________

2. What does SDS stand for? ____________________________________________________________________

3. Name one thing an SDS tells you: __________________________________________________________________

4. Name one reason you should wear appropriate safety eyewear in the lab. __________________________________________________________________

5. What should be the last thing you do before you leave the lab? ______________

6. What is the safety standard for appropriate safety eyewear in this lab? ______________

7. What type of footwear is approved? __________________________________________________________________

8. May you bring food into the laboratory? __________________________________________________________________

9. How do you know where to dispose of hazardous materials? __________________________________________________________________

10. Whom do you inform if you have ANY type of accident? __________________________________________________________________

11. Where is the location of the eyewash station? __________________________________________________________________

12. May you participate in the laboratory activities without appropriate apparel or safety equipment? __________

13. Can regular glasses or sunglasses substitute for appropriate safety eyewear? __________

14. May you enter the laboratory without an instructor present? __________________________________________________________________

15. Why do you clean your bench-top BEFORE you start your laboratory activities? __________________________________________________________________

SCORE: ____________/ 15