

Name \_\_\_\_\_ Date of Data Collection \_\_\_\_\_

Class Period \_\_\_\_\_ Lab Days/Period \_\_\_\_\_ Teacher \_\_\_\_\_

### **Safety in the Biology Laboratory – Lab #1**

*New York State Learning Standards Annotation: MST 1, KI 2, 2.2a, 2.3a, 3.1a; MST 4, KI 6, 6.1a; Appendix A. Special thanks to Jim Buckley at Edwards Knox for the inspiration and some material that made this lab possible.*

**Background:** If there is one thing that can ruin a biology laboratory experiment or experience, it is the simple act of an accident or incident affecting a student, class, or the entire school. As such, there are certain rules and regulations that **MUST** be followed to ensure that everyone and everything remains safe. Completing the laboratory is a good way to make yourself aware of the hazards that may exist and be proactive with respect to your well-being and the safety of your fellow students.

**Purpose:** The purpose of this laboratory experience is:

-to make certain you know and agree to follow the rules and regulations that help keep the biology laboratory a safe place to work and gain knowledge.

-to identify hazards and to implement a plan to react and respond to a hazardous condition if it presents itself.

-to agree with your teacher and your school that you will make your laboratory experience a positive learning time where you can gain valuable knowledge that supports the classroom curriculum.

-to agree that you will complete the 1,200 minutes of lab as well as the required New York State Education Department's mandated laboratory experiences in a timely fashion.

**Materials:** The following materials are needed to complete this laboratory experience:

lab papers

pencil, pens

**Procedure:** The following procedure is utilized to perform this experience:

1. **General Rules:** After each of these rules, initial in the space provided to show that you have read and understand the rule.
2. **Lab Safety Symbols:** Identify each of the laboratory safety symbols. Initial in the appropriate space to indicate that you understand and are willing to take the appropriate precautions when working with these materials.
3. **Lab Completion Agreement:** Read and sign, and have your parent or guardian read or sign, the attached laboratory completion agreement. Initial each appropriate space where indicated.

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**General Laboratory Rules**

After reading each of the following rules, give a reason as to why that rule is important and then initial in the space provided indicating you will observe and obey this rule when you are working in the Biology laboratory. Safety in the laboratory must be a primary concern to both student and teacher. The following list of regulations and precautions will be followed in our laboratory.





Rule	Why is it Important?	Initials
At the beginning of most laboratories, your instructor will engage in a pre-lab discussion. Many safety procedures will be discussed during these discussions. Listen attentively and follow these procedures -- " an ounce of prevention is worth a pound of cure".		
Keep all books, papers, and other flammable materials away from open flames or dangerous chemicals.		
Tie back long hair when you are working with an open flame. Pipe cleaners, rubber bands, and string are useful for this purpose.		
Do NOT mix chemicals or perform unscheduled (unsanctioned) experiments without your teacher's approval		
Never use chemicals from an unlabeled container. Do not taste, smell, or touch chemicals unless specifically instructed by your teacher to do so.		
Wear safety goggles during experiments involving heating or hammering or while using acids or bases. If you do not have goggles on, stay away from students that are experimenting.		
It is also expected that you will wear goggles while doing dissections.		
Point the open end of a test tube or flask away from yourself and others while heating it. Never heat a closed container.		
Use squeeze bottles and droppers only for their intended purpose.		
A common accident for beginning students is involves inserting glass tubing into a stopper. Use glycerine or water to lubricate the glass before doing this.		
Another common accident is picking up red hot materials. Take proper precautions against this.		
No material should be left in the sinks; i.e. paper, crucibles, beakers, etc.		
Discard all waste matter in the appropriate containers. (ex. glass in glass pail		
Never place pencils, pens, or other materials in your mouth.		
NEVER return excess chemicals back to their container.		

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Gas burners must be turned off when not in use during the laboratory period. Be certain that gas burners and other materials are returned to their appropriate storage areas at the end of the laboratory period.		
Keep volatile liquids and reagents away from the bunsen burner flame or other heating source.		
Know where all laboratory safety equipment is located in case you need it.		
Most chemical spills are best handled by washing the affected area with water as quickly as possible. Call your teacher for assistance if necessary. Severe spills may require the removal of clothing.		
Put out any fires immediately. Call your teacher for assistance if necessary.		
In an emergency situation an all too common response is panic. If you observe another student in trouble, tell them what to do, and assist them in doing it.		
You are responsible for keeping your laboratory area and completely neat and clean.		

**Laboratory Safety Symbols**

Symbol	What does it mean?	Initials
		
		
		
		

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<p><b>DANGER</b></p>  <p><b>POISON</b></p>		
		
<p><b>DANGER</b></p> <p>NO SMOKING TOXIC VAPORS</p> 		
		
 <p><b>Wear protective clothing</b></p>		
		

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### **Lab Completion Agreement**

For entry into a State Regents examination, a student must complete a minimum of 1200 minutes of hands-on laboratory with satisfactory lab reports **AS WELL AS** complete each of the four New York State Mandated Labs that have been or will be conducted throughout the academic year. Questions on the Regents Examination given in June will be geared towards the State Mandated Labs listed. Therefore, students **MUST** complete those labs. The lab reports must be kept on file for at least six months after the State Regents examination as per Commissioner's Regulation [100.5, (b)(7) (iv)(d)]. Therefore, it is **CRUCIAL** that your student make a concerted effort to get these lab assignments turned in for grading.

I hereby agree that I will:

1. Satisfactorily complete a minimum of 1200 minutes of laboratory time and the requisite paper documentation (lab reports) for each to be turned in and filed by my teacher.
2. I understand that it is the policy of the instructor to have students complete more than the required 1200 minutes and I will complete ALL laboratory experiments as result.
3. I will complete, in duplicate, all of the mandated laboratory experiences that the New York State Education Department provides for inclusion on the Regents Examination.
4. I understand that if at any point during the year that I fall behind in labs or become delinquent in the documentation of those labs that I will be assigned mandatory activity period detentions with my instructor until such time that I am caught up to date. My progress will be monitored by my instructor and it is at his/her discretion that I will be required to attend activity period detentions.
5. I understand it is the right of my parent or guardian to be kept updated on my laboratory performance.
6. I understand that I must notify the teacher in writing ahead of time if there is a laboratory experiment that I cannot perform due to medical, social, religious, or philosophical condition or belief. I will also contact the principal ahead of time to discuss the matter and arrange for a mutually agreeable and comparable laboratory experience that reinforces the curriculum.
7. In the event that I am going to be absent for a period of time, I agree to stay during activity period upon returning to complete any laboratory experiments that I have missed.
8. I agree that I understand that all laboratory experiments must be satisfactorily turned in and completed no later than ten (10) days prior to the Regents Examination.
9. I agree that it is my responsibility to turn in all laboratory experiments in a timely manner. If I fail to complete them in a timeframe prescribed by the teacher, it is not the teacher's responsibility to run the laboratory at the end of the year for delinquent students.

Student Signature \_\_\_\_\_ Date \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_ Date \_\_\_\_\_

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**Data:** The following data was collected during this experience:

-No numerical data was collected.

**Conclusion:** The following can be concluded from performing this laboratory experience:

Why was this experience given to you?

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What did you learn by completing this experience?

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Describe a situation that could arise in lab. How would you respond to it?

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**Analysis Questions:** Answer the following questions in the spaces provided:

It is crucial that you understand a few things about this classroom. As such,

1. How do you exit this room in case of a fire or fire drill? What if the entrance is blocked?

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2. Describe at least three things that you would recognize as being hazards that could exist? What would you do about correcting the hazard?

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*Bibliography of Images Used*

Eyewear Symbol: <http://www.utexas.edu/cons/safety/equipment/eyewear.html>

Biohazard Symbol:

[http://www.stevenspublishing.com/stevens/epPub.nsf/0/1c6af4c9b5dda40a86256b75006f9b24/\\$FILE/Biohazard.jpg](http://www.stevenspublishing.com/stevens/epPub.nsf/0/1c6af4c9b5dda40a86256b75006f9b24/$FILE/Biohazard.jpg)

Caustic Symbol: [http://www.emedco.com/emed2/Gifs\\_sp/40288-SMRT.gif](http://www.emedco.com/emed2/Gifs_sp/40288-SMRT.gif)

Flammable Symbol: <http://www.hse.gov.uk/chip/images/fire-1.gif>

Poison Symbol: <http://www.nysif.com/policy/safety/posters/safety4.GIF>

Gloves Symbol: <http://www.epa.gov/grtlakes/seahome/housewaste/images/glove2.gif>

Toxic Vapors Symbol: <http://www.speedysigns.com/images/osha/small/DANGER85.gif>

Electrical hazard Symbol: <http://www.ce-mag.com/archive/2001/media/01CE28C.jpg>

Protective Clothing Symbol: <https://labelsourceonline.co.uk/shop/ProdImages/rlm7.gif>

Bunsen Burner Symbol:

[http://people.eku.edu/godbeys/homepage\\_files/che\\_112\\_lab\\_manual/equipment/bunsen\\_burner.gif](http://people.eku.edu/godbeys/homepage_files/che_112_lab_manual/equipment/bunsen_burner.gif)