**Methacton School District: Science Department Laboratory Safety Policy**

Please read all of the following safety guidelines and review with your parents. Parent and Student Signatures are required on the last page. This signature page will be kept on file in the administrative offices while you are a student at Methacton. The policy can be accessed through the Methacton web page. Each new school year your science teacher will review the guidelines with you.

Purpose: The purpose of this policy is to outline general safety procedures for science classes.

Every instructor should:

1. Set a good example by observing all rules and wearing protective equipment.
2. Inspect the lab often and be alert for unsafe conditions at all times.
3. Report unsafe conditions to the proper authority or take effective corrective action promptly.
4. Carefully review all laboratory experiments for possible health, safety and environmental problems before the experiments are assigned to students.

Dress Code:

1. Wear safety glasses whenever you are working with chemicals, the Bunsen burner, or any substance that might get into your eyes. Avoid wearing contact lenses in the laboratory. There are some experiments that could result in contact/eye irritations.
2. Wear a laboratory apron or coat whenever you are working with chemicals or heated substances.
3. Tie back long hair to keep it away from chemicals, the Bunsen burner, candles or other equipment.
4. Roll up sleeves or tie back any jewelry that can hang down and touch chemicals and flames.

General Safety Rules and First Aid

1. Read all directions for an experiment several times. Follow the directions and procedures exactly as they are written. If you are in doubt about any part of the experiment, ask your teacher for assistance.
2. Never perform investigations your teacher has not authorized. Never handle equipment or chemicals unless you have specific permission.
3. Never eat, drink or bring food into the laboratory.
4. Immediately report all accidents, spills, or injuries, no matter how minor, to your teacher.
5. Horseplay, pranks, or other acts of mischief are especially dangerous and are prohibited.
6. Never leave your lab station or equipment unattended. You should not be visiting other stations.
7. Always wash your hands with soap and water at the conclusion of the lab.
8. No chemicals, equipment, or specimens are to be removed from the laboratory. They should be returned to their proper place.
9. Be aware of what other students around you are doing in the laboratory.
10. All talking should be done at a level below the normal conversational level.

L. Know the location and use of the fire exits and the procedure for leaving the room immediately.

Specific Safety Rules for Heat, Chemicals, Glassware, and Sharp Instruments

1. Maintain a clean work area and keep open flames away from flammable chemicals.
2. Never reach across a flame.
3. When heating a test tube or bottle, point the opening away from yourself and others.
4. Never heat a closed container.
5. Never pick up a container that has been heated without first holding the palm of your hand near it. If you can feel the heat on your hand, the container is too hot to handle. Use a clamp or tongs.
6. Never mix unknown chemicals.
7. Never touch, taste, or smell a chemical.
8. Keep all container lids closed when not being used.
9. Never return chemicals to their original containers.
10. When diluting an acid, pour the acid into water, never pour water into the acid.
11. If acids or bases get on your skin, rinse them with water immediately and get your teacher.
12. When disposing of chemicals, follow the instructor’s directions.
13. Never use broken or chipped glassware. If glassware breaks, notify your teacher.
14. Handle scalpels or razor blades with extreme care. Never cut material toward you, cut away from you.

Mrs. Cowley’s Classroom Rules and Procedures

**Methacton High School: Academic Environmental Science**

Welcome to my Academic Environmental Science Class! I am excited to be your teacher this year and am looking forward to helping you become more aware of our impact on the earth and how to become more informed stewards of our home planet – Earth!

For the greatest amount of learning to occur for everyone, please follow these five simple rules:

1. **Be Respectful**
2. **Be Prepared**
3. **Do What You Are Supposed To Do**
4. **Work to the Best of Your Ability**
5. **Get Involved**

Below I will expand upon each rule and give you my expectations and outline some consequences if you choose not to follow the rules:

1. **Be Respectful** – Be kind to your classmates, your teacher, and yourself. No bullying will be tolerated. Make sure you practice the classroom manners that you have learned, such as raising your hand and not talking when others are talking.
2. **Be Prepared** –Come into class ready to learn. This means do your homework and have it easily assessable when you enter class, as well as your openers, and **Charged Chromebooks**. Check Google Classroom to stay up to date with assignments, quizzes, and tests. Study for tests, always bring pencils, pens, and paper. If you are absent, use Google Classroom to make sure that you do not fall too far behind. When you come back, get the missed papers, openers, and agendas from the designated place in class, and complete your missing work within the required time. Make sure to touch base with Mrs. Cowley to get credit for makeup assignments and to schedule time to take any missed assessments.
3. **Do What You Are Supposed to Do** – Follow the rules on this page, also make sure you follow the attached Methacton School District Laboratory Safety Policy when in labs. I will further explain my policies on some common issues:
	1. ***Student Work*** – Nightly homework is not accepted late; it must be present when I check for it or submitted online by the due date. Late openers, labs, and assignments greater than 10 points will be accepted late for one week after the due date with a 20% penalty each day late. **Anyone involved in plagiarism/ cheating/ copying will receive a zero and appropriate disciplinary action.**
	2. ***Personal Technology*** – Cell phones, MP3 players, cameras, and other personal technologic devices are not to be used during class time. I understand that everyone has them and sometimes they go off by accident, but to maximize learning, we need to keep distractions to a minimum. For a first offence of using your device, you will receive a warning. For a second offense, I will contact home and confiscate the device for the remainder of class. Any further offenses will result in an after school detention, then administrative action. All phones and smartwatches must be placed in the assigned pocket during all assessments.
	3. ***Food and Drink***–You may have a drink at your desk, but please do not eat in the classroom. We have many little creatures that love to snack on your food as well, so we cannot have any crumbs!
	4. ***Restroom***- Remember you are in class to learn! Please make sure if you need to go to the restroom, you do it in the beginning of the class. You must sign out and bring the pass with you (or use the Smart Pass system). If you do not put your homework on your desk before you go, it will be a zero. You may also go to the restroom at the end of class if we are finished with the lesson. DO NOT RAISE YOUR HAND IN THE MIDDLE FO THE CLASS TO ASK TO GO TO THE BATHROOM! This is very distracting to the class.
	5. ***Lab Safety*** – You must follow all lab safety procedures. A minor offense will receive a warning; repeat and major offenses will result in a zero for the lab and possible administrative action.
4. **Work to the Best of Your Ability** – Not everyone is expected to be a brain surgeon, but you are expected to put forth enough effort to do your homework most of the time and study for your tests. Take advantage of extra credit opportunities. If you ever need help, please schedule time to see me after school on Tuesday, Wednesday, or Thursday. Remember you are the only one who can impact your grade. It is a reflection of you, make it a good one!
5. **Get Involved** – Class is much more enjoyable when everyone participates. Environmental Science is a fascinating and very relevant subject in which the information is always changing. I hope I can learn a lot from you as well, make sure you share any current events that you hear that pertain to what we are learning!

ENVIRONMENTAL SCIENCE CURRICULUM 2018 - 2019

Welcome to Environmental Science and Methacton High School! This year you will study many aspects of the natural world. Environmental Science is defined as: the branch of science concerned with the physical, chemical, and biological conditions of the environment and their effect on organisms.

Below you will find a syllabus outlining the general progression of this course. Due to the Academic Environmental Teachers constantly updating this course with new projects and technologies, there will likely be some shifting of topics amongst the marking periods. If your teachers determine there is ample time, we will do the bonus unit mid-3rd marking period.

**1st Marking Period**

*Unit 1: Science Skills*

* The Scientific Method
* Observations versus inferences
* Quantitative versus Qualitative
* Review of measurement
* Metric conversion review
* Graphing skills
	+ Know when to use a bar, line, pie graph
	+ Know the major features of a graph (title, scale, units…)
	+ Creating graphs

*Unit 2: Water, Watersheds,* *Wetlands and Water Pollution and Solutions*

* Water distribution on Earth
* The water cycle
	+ Clearly define and explain the difference between infiltration and runoff
* Stream characteristics and related vocabulary
* Macro invertebrates in freshwater
* Watersheds
* Wetland types, their characteristics, and functions

**2nd Marking Period**

*Unit 2: Water, Watersheds*, *Wetlands and Water Pollution and Solutions (continued)*

* Water Pollution
	+ Major water diseases: Typhoid, Dysentery, Malaria, Cholera
	+ Eutrophication and Ocean Acidification
* Solutions to protect our water

*Unit 3: Electricity, Energy, and Energy Resources*

* Energy Generation
* Energy Distribution
* Energy Types Pro’s and Con’s
* Fracking
* Long term energy planning and conversion to renewable resources

*4. Air, Atmosphere, Environmental Health*

* Air and layers/ features of the atmosphere

**3rd Marking Period**

*Unit 4: Air, Atmosphere, Environmental Health (continued)*

* Ozone formation, hole, and The Montreal Protocol
* Carbon Cycle
* Greenhouse Effect
* Climate Change
* Carbon Footprint
* Air Pollution / Particulate Matter
* Environmental Health including human health

*Unit 5: Taxonomy and Classification*

* Be able to name animals using Linnaeus’s Binomial Nomenclature system
* Know and explain the three Domains of nature
* Be able to use Dichotomous keys

**4th Marking Period**

*Unit 6: Ecosystems*

* Biomes
* Make and design Food webs and food chains.
* Explain what Trophic levels are and how the 10% rule applies
* Explain animal relationships such as Symbiosis
* Explain changes in population that are both natural and manmade
* Ecological succession
* Invasive Species

*Bonus Unit: Trash/ Landfills/Recycling\**

* Be able to explain how trash is dealt with in your area and where it goes.
	+ Landfills, Incinerators
* Design Landfills
* Reduce, Reuse, Recycle!
	+ Mr. Trash Wheel Project

*\*If time allows, this unit will be placed between Units 4 and 5 in the 3rd marking period.*

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Please fill in the following information and return by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Just rip this back page off and return to Mrs. Cowley. Keep the other pages in your binder so you can refer to them as needed. Thanks!**

1. Your e-mail: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Do you have the internet at home? **YES / NO**

3. How many people are in your family? Tell me about them. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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4. What are you really good at? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. What academic class do you like best?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. What school did you go to last year? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Who was your science teacher? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. What did you do this summer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. What is something you want to learn this year? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. Tell me two more things about you.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Please sign below to verify that you, the student, and you, the parent, have read and understand Mrs. Cowley’s Classroom Rules and Procedures for Environmental Science, and the Methacton School District Laboratory Safety Policy.**

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| --- | --- |
| Student Name (Print) | Student Name (Signature) |
|  |  |
| Parent Name (Print) | Parent Name (Signature) |
|  |  |