

# 2018-19 AGRICULTURAL BIOLOGY

Mrs. Lisa H. Clement

[LCLEMENT@alpinedistrict.org](mailto:LCLEMENT@alpinedistrict.org)

Room E123

Website: <http://www.clementclass.com/>

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## **Course Description:**

Agricultural Biology fills the Utah high school graduation requirement for biology and the entrance requirement for state colleges and universities. Ag-Biology is a basic high school course that will emphasize the ways biological science is used in the world. Every effort will be made to help students learn the scientific theories they need to know for future studies while, at the same time, helping students to see how biology affects them every day.

Along with basic biological principles we will study agriculture, environmental issues, advances in molecular biology, genetic engineering and many other topics that touch our lives – sometimes without our knowing it.

The following is a summary of the major topics we will study this year:

- A. **Biology Skills** – We'll review the basic methods used in science. Throughout the year we will learn to use laboratory skills and the associated reading and writing skills people need in order to deal with the kinds of information science presents them in the real world.
- B. **Cell Structure and Function** – We will study cell chemistry, structures and functions. Here's where you'll learn about the requirements for life and how living things go about staying alive. We'll also take a close look at some recent discoveries of organisms that live in extreme environments like boiling battery acid and why the snow on Mount Timpanogos turns pink!
- C. **Organ Structure and Function** – We will study how organisms are assembled and how the way that we are put together affects our ability to move. We will also examine organs and the role that they play in helping organisms survive.
- D. **Heredity** – Students will become acquainted with the basic physical and life characteristics of the most common types of organisms on earth. As we study different life forms we will learn how they move, feed, protect and reproduce themselves. We'll also study heredity as it relates to life forms important to plants, animals, and humans.
- E. **Genetic Engineering and Evolution** – Current state and national guidelines in biology education ask that students learn about natural and technological mechanisms that alter the genetic makeup of organisms and populations. The things scientists are learning now will have dramatic effects on human life spans and quality of life.
- F. **Ecological Relationships** – Intertwined in all of our studies this year will be general themes regarding the way living and nonliving things interact to produce the world we live in. Our emphasis will be on the organisms that make earth livable and on the effects these organisms have on the earth system as a whole.

## **Materials and Fees**

- A. **Class Notebook** – Each student will keep their work organized in a notebook (Recommended: 1 or 1½ inch binder) that will be brought to class every day. You will be required to save work for the whole year because you will want it to review for the State Core at the end of the year.
- B. **Fees** – A lab fee should have been paid when you registered for school. Please make sure you pay this fee. Our laboratory experiments and demonstrations can't happen without your financial support. Thanks for your cooperation.
- C. **Text** – The main text we will use in our studies this year is titled *Biology: Principles and Explorations* and is published by Holt, Rinehart, Winston. Due to the high numbers of students I have, each student WILL NOT be issued a copy of the text. However, copies of the text will be available for checkout.

## **Homework**

You should **expect at least 15 concentrated minutes of homework every night** and occasionally more. In general, you should **read assignments before coming to class**. This preparation will help you learn more and learn faster. Biology is not a difficult subject but students must master a great deal of information in order to understand the concepts we will explore. If you will conscientiously study every day, whether there is a formal assignment or not, I can guarantee you a good grade in science this year! **Make studying a habit. You'll be glad you did!** Homework assignments will generally be collected or at least monitored daily to help Mrs. Clement pace class instruction appropriately.

## **Grading**

- A. **Daily Work and Participation** – Written assignments will be graded on correctness and legibility or other pre-specified criteria when appropriate. Participation assignments are graded subjectively based on instructions given with each assignment.
- B. **Notebooks** – Notebooks are necessary for this class because students will be expected to keep all of their work for the school year. This is especially important when reviewing for tests, in particular, the CRT at the end of the year.
- C. **Testing** – Quizzes and exams will be administered as required to assess student mastery of both skill and course content. The timing of evaluations will vary depending on the volume of material in each unit. Generally plan on at least six formal evaluations each term. Tests and quizzes will often be administered and may consist of any typical question format (multiple choice, essay, etc.) Some assessments will consist of products you will produce or skills that you will demonstrate for the teacher.

D. **Grading Scale** – Grades are assigned based on your assignment and assessment scores. Letter grades will be based on the following scale:

<b>95 – 100% = A</b>	<b>83 – 86% = B</b>	<b>73 – 76% = C</b>	<b>63 – 66% = D</b>
<b>90 – 94% = A-</b>	<b>80 – 82% = B-</b>	<b>70 – 72% = C-</b>	<b>60 – 62% = D-</b>
<b>87 – 89% = B+</b>	<b>77 – 79% = C+</b>	<b>67 – 69% = D+</b>	<b>0 – 59% = I or F</b>

### **Makeup Work**

- A. **Assignments** – If you are absent, it is your responsibility to make arrangements with Mrs. Clement to make the work up and set a new due date for missed assignments. Please see Mrs. Clement immediately upon your return to school. Normally, for each day you miss you will be given one day to make up missed assignments. Students in the 9th grade should be mature enough to have their assignments completed and ready to turn in on time. As a general rule, **a penalty of 50% will be applied to all late work**, except under extreme conditions where illness prevents you from doing the work.
- B. **Exams / Tests** – It is my hope that students will be able to pass exams / tests on the first attempt. If students are truly studying at home, this should not be an issue. If you are absent the day a test is given, you have one week to make it up during Pride Time or after school. If you are found to be truant or you simply stay home to miss a test, you'll be given the chance to take the test for the educational experience but receive no credit.
- C. **Participation** – Participation is an essential part of this class. You must be in class to participate. If you miss class, regardless of the reason, participation scores may be docked unless you make up the time missed in a reasonable fashion. If you miss class, make sure to ask if you need to make up the session you missed.

### **Attendance and Citizenship**

- A. **Attendance** – Chronic or excessive absenteeism can lead to academic problems. When you are absent, you miss class discussions that make assignments easier. Sometimes you will miss activities or assignments that cannot be completed outside of class. If you miss class, check with class members or online to see what you missed and talk to Mrs. Clement about making up the time and work.
- B. **Truancy** – Sluffing (absenteeism for which you have no legitimate excuse) will affect your citizenship grade. Depending on the work missed, it may also affect your academic grade. **You may complete work missed while truant but will not be given credit for it.**
- C. **Punctuality and Preparedness** – Tardiness is a rude infringement upon the right of others to make use of the greatest possible amount of class time. Unexcused tardiness will have an effect on your participation and citizenship grades, which will, in turn, influence your academic grade. You are expected to have your notebook, pencil, paper and other necessary materials in class each day. If you are unprepared you will be marked tardy and penalties will be applied.
- D. **Citizenship** – Good citizenship is an assignment in this class and is to be completed as follows. You are expected to come prepared to class and participate in class activities and behave appropriately for each class activity. You are expected to respect the rights of fellow students and the teacher at all times. In return for your respect you may expect to receive equal respect. You will be expected to obey all school rules. For your participation you will receive a citizenship grade, which is separate from your academic grade, but considered equally important.

The scale used to figure citizenship grades is as follows:

**"O" ~ Outstanding**  
**"S" ~ Satisfactory**

**"N" ~ Needs Improvement**  
**"U" ~ Unsatisfactory**

Each time you misbehave, do not participate, are tardy or unprepared and are unexcused your citizenship grade will be considered for reduction. If you are caught sluffing you will receive an automatic "U". Citizenship points can be made up by changing bad behavior and attending an after school make-up session at the teacher's discretion.

If you have chronic problems with citizenship and/or attendance, you will be subject to the school policies outlined in your student handbook. You may be suspended from school, be referred for counseling, or you may be invited to withdraw from this class and find another.

*Career and Technical Education classes of Alpine School District and Willowcreek Middle School are open to all students. Willowcreek Middle School does not discriminate on the basis of race, color, religion, sex, disability, or national origin. Students who have a grievance with another student or any school employee should talk to the school administration or a counselor about their concerns.*

*If you have special needs, abilities, or disabilities, please contact Mrs. Clement as soon as possible to arrange for any accommodations you might need.*

*Please keep this document so that you may refer to it for any questions that you might have about the class. If you need to get in touch with me, please send emails. My email address is [LCLEMENT@alpinedistrict.org](mailto:LCLEMENT@alpinedistrict.org). I am very quick to respond to emails, and can also attach necessary assignments. If you are sending an email, in the subject box please type "Parent of \_\_\_\_\_" so that it will make it through the District's Spam Mail filter.*

# Student Safety Contract

An important part of your science work this year will take place in a laboratory setting. The laboratory is a safe environment in which to work if some general rules are observed and if the people who work in the laboratory are informed and careful.

As a first step toward becoming an informed laboratory worker, read the following safety rules. Discuss them with your parents. Reread them to make sure that you understand each rule. Ask your teacher about the rules that are unclear to you. When you are sure that you understand all of the safety rules that are on the list, take the sample safety test then sign and date the contract in the space provided.

## Dress Code

1. To protect your eyes from possible injury, always wear safety goggles when instructed to do so. Laboratory activities involving fine powders, chemicals and liquids are examples of those requiring safety goggles.
2. Tie back long hair and loose clothing and remove jewelry when you work on laboratory experiments. Roll up loose sleeves that might fall into chemicals or become caught on equipment.
3. Do not wear open-toed shoes or sandals in a laboratory classroom. Never go barefoot!

## Preparation for Laboratory Work

4. Prepare for an experiment by reading all of the directions before beginning. If there are instructions you don't understand, make sure you ask the teacher for help before starting. Discuss the procedures with your lab partner or team.
5. Before you begin work, make sure that you know how to operate the equipment that will be used in the experiment.

## Performing an Experiment

6. Keep your laboratory work area clear of any materials that are not needed for performing the experiment. Texts, notebooks, book bags, jackets, and other materials should be stored away from the work area.
7. Handle all equipment as directed. Note safety precautions in the instructions for your experiments.
8. Do not use direct sunlight as the source of light for microscopes that have mirrors.
9. Handle all sharp instruments with care.
10. Do not stir solutions with a thermometer; use a glass stirring rod. If a thermometer breaks, inform your teacher at once and follow your teacher's directions for cleaning it up.
11. Take extreme care not to spill materials in the classroom. Report all spills immediately and follow your teacher's directions for cleaning them up.
12. Keep flammable materials away from open flames. Place burners sufficiently far from the edge of the work area. Never reach across a flame.
13. Use tongs or a clamp to pick up hot containers. Test the temperature of equipment and containers that have been heated by placing the back of your hand near (not on!) any object before picking it up. If you can feel heat, the object might be too hot to handle.
14. Dispose of materials only as directed. Do not pour chemicals into a sink or put specimens into the trash or take them from the room. There will be special containers for disposal of laboratory materials. After you have completed your work, turn off all equipment and clean your work area. Return all equipment and materials to the appropriate storage places.
15. Wash your hands before and after each experiment.
16. Because this room is used as a laboratory, you may never eat or drink in the classroom. Also, never eat or drink from laboratory equipment.
17. Perform only those experiments authorized by your teacher. Do not work alone in the laboratory.

## First Aid Emergencies

18. Report any accident to your teacher immediately, no matter how minor the accident might seem. Follow your teacher's recommendations for further treatment.
19. Report all fires to your teacher at once. Smother a clothing fire with a fire blanket, towel, or coat, or put it under a safety shower.
20. Know the locations of the fire extinguisher, safety shower, fire blanket, first aid kit, and other safety equipment. Learn how to use each item.
21. Know the shortest exit route from the laboratory, from the corridor, and from the school building.

## Handling Chemicals

22. Read the labels on chemical containers and on reagent bottles twice. Bottles of darkened glass look very much alike; make sure that you are using the materials called for in the experiment. Label all containers into which you put materials.
23. Do not touch, taste, or smell chemicals that are in the laboratory unless directed to do so by your teacher. Do not sniff chemicals directly from containers. Waft fumes toward your nose by waving your hand over the mouth of the container.
24. Open chemical bottles only when you are ready to use the materials within them and close bottles quickly when you are done; moisture from the air might react with and spoil the chemicals. To avoid the contamination of chemicals, do not return the unused chemicals to the bottle. Dispose of chemicals only as directed by your teacher.
25. Always pour an acid into water; never pour water into an acid. It may boil and splash if you do.
26. Rinse any acid or base off your skin immediately by flushing the area with water. Notify your teacher at once.
27. Do not use your mouth to draw materials through a pipette; use a pipette bulb.
28. Never point the open end of a heated test tube toward yourself or anyone else.

## Handling Glassware

29. Do not use cracked, chipped, scored, or badly scratched glassware.
30. Never handle broken glass with your bare hands. Clean up the broken glass and dispose of it as directed by the teacher.
31. Always lubricate glassware (tubing, thermometers, etc.) with water or glycerin before attempting to insert it into a stopper. Never apply force when inserting or removing glassware from a stopper. Use a twisting motion.
32. Do not place hot glassware directly on the lab table. Always use an insulating pad of some sort.
33. Allow plenty of time for hot glass to cool before touching it. Remember that hot glass shows no visible signs of its temperature, and it can cause painful burns.

## Handling Living Organisms

34. Treat all microorganisms as if they were harmful. Use antiseptic procedures, as directed by your teacher, when working with microbes. Dispose of microbes as your teacher directs.
35. Treat living organisms carefully. Do not cause pain, discomfort, or injury to an organism. Follow your teacher's directions when handling animals. Wash your hands well after handling animals or their cages.
36. Wear gloves when handling small mammals. Report bites or stings to your teacher at once.

Once you have read and reviewed the above rules and feel confident that you can remember them, take the test on the next page. You may refer back to the rules if necessary. Make sure you answer each question correctly. If you are not certain of your answer, ask the teacher for help.

Keep this sheet of rules in your journal so you can refer to it when you need a reminder of the rules and safety guidelines. Turn the completed and signed test in to your teacher. Make sure you read the statement of compliance before you sign it! Your grade and your opportunity to continue in this class depend on your willingness to help us maintain safety in our science classroom this year.

Student Name: \_\_\_\_\_ Class Period: \_\_\_\_\_ Date: \_\_\_\_\_

# 2018-19 AGRICULTURAL BIOLOGY

## PARENT / GUARDIAN / STUDENT AGREEMENT FORM

I understand and agree to the policies as stated in the Agricultural Biology Disclosure Document for Mrs. Clement's Agricultural Biology class. I also understand that because of the nature of science my student will be working with various lab equipment and supplies. I know and understand that my student and myself must sign a lab safety sheet before they may participate. I also understand that internet use will also be required for some assignments and that my student must have a signed internet form turned in to the office for my student to participate. I know and understand that until these forms are signed and turned in, I forfeit my student's privilege to participate in future classroom activities and labs, and know that this counts against my student's grade.

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

\_\_\_\_\_  
Period

\_\_\_\_\_  
Parent or Guardian Signature

\_\_\_\_\_  
Date



Please fill out this form. It will give me information so that I can contact you easily, if needed, and get to know your student a little better.

Student Name \_\_\_\_\_

Mother's/ Father's/ Guardian's Name(s) \_\_\_\_\_

Phone # (s) I can reach you at \_\_\_\_\_

E-mail Address \_\_\_\_\_

Mailing Address \_\_\_\_\_

Student Birthday \_\_\_\_\_ Favorite Candy bar \_\_\_\_\_

Tell me something special and/or concerns about your student:

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

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Class Period: \_\_\_\_\_

### **Student Safety Test**

- \_\_\_\_\_ 1. When working in the laboratory,  
a. tie back loose clothing.  
b. do not wear open-toed shoes.  
c. wear safety goggles.  
d. all of the above
- \_\_\_\_\_ 2. You may eat or drink in the classroom  
a. after you have washed your hands.  
b. when there is no lab activity going on.  
c. only from laboratory equipment.  
d. none of the above
- \_\_\_\_\_ 3. Treat all microorganisms as if they were:  
a. living.  
b. harmful.  
c. harmless.  
d. antiseptic.
- \_\_\_\_\_ 4. You should stir solutions with:  
a. a pencil or a pen.  
b. a thermometer.  
c. a glass stirring rod.  
d. all of the above
- \_\_\_\_\_ 5. Your notebook accidentally catches fire during an experiment. You should:  
a. douse it with the contents of the nearest beaker that contains a liquid.  
b. notify your teacher at once.  
c. locate a fire extinguisher.  
d. b and c
- \_\_\_\_\_ 6. Your hand is accidentally splashed with a few drops of dilute hydrochloric acid. You should:  
a. notify your teacher at once.  
b. pat your hand dry with a paper towel.  
c. flush your hand with running water from a faucet.  
d. a and c
- \_\_\_\_\_ 7. At your work area, you find a bottle of chemicals from which the label has been removed. You should:  
a. look inside to identify the chemical.  
b. sniff the chemical to identify it.  
c. dispose of the bottle in the trash.  
d. give the bottle to your teacher.
- \_\_\_\_\_ 8. The laboratory procedure calls for the use of a single-edged razor, but your kit contains only a double-edged razor and a scalpel. You should:  
a. use the scalpel.  
b. use the double-edged razor.  
c. cover one edge of the double-edged razor with tape and then use it.  
d. ask your teacher for instructions or proper equipment before doing anything.
- \_\_\_\_\_ 9. Your laboratory procedure instructs you to pour six different solutions into separate beakers for use in a chemical test. You should:  
a. pour all of the solutions into beakers and then label the beakers.  
b. pour one solution at a time, labeling each beaker after pouring the solution into it.  
c. label all beakers first and then pour the correct solution into each.  
d. not worry about labeling the beakers because you will remember which beaker contains each solution.
- \_\_\_\_\_ 10. When mixing an acid with water, pour  
a. the substance with the smallest volume into the substance with the largest volume.  
b. the acid into the water.  
c. the water into the acid.  
d. any of the above, as long as you are careful not to spill the materials.

### **Statement of Compliance**

We have read and understand the safety rules outlined in the Student Safety Contract. The student has correctly completed the safety test and agrees to abide by the safety rules. If the student willfully disobeys any safety rule or instruction, whether written or oral, we understand that the penalty will be dismissal from science and we will assist the teacher in making arrangements for the student to take a different class.

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

Parent \_\_\_\_\_ Parent Signature \_\_\_\_\_