

Applied Biology 2
Ms. Valentie
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Dear Parent and Student:

Welcome to Biology! In this class, we will be discussing many types of life, as well as conducting many experiments and fun activities. I have very high expectations for each of my students, and my goal is to challenge them to learn more about the world around them. To help you get started; I have listed some of the basic requirements, rules, and information you will need to begin our course successfully! Also, please see the attached scope and sequence and outline for this course. Don't hesitate to contact me if you have any questions or concerns. I know we will have a great semester!

Requirements:

- Textbook with cover
- Three ring binder
 - This student packet should be kept in front of your binder.
 - It is a good idea to divide your notebook into sections. Below are some suggestions:
1. Warm-ups 2. Notes 3. Labs 4. Test/Quiz /Projects 5. Homework
 - Loose-leaf paper
 - Graph Paper
- Pencils and/or black or blue pens ONLY!
- Highlighters, colored pencils or markers, ruler
- A roll of paper towels, soap, or Kleenex

Classroom Rules:

- Be Prompt, Polite, Prepared, and Productive!
- Be in seat when bell rings, not at the door!
- Do **not** leave your seat unless given permission!
- I dismiss you from class!
- Be **RESPECTFUL** not only to yourself, but also to those around you!

Bathroom Rule:

- You will be given two bathroom passes for the entire semester.
- After that, you will be given permission to go to the bathroom. **However, for every minute you are gone, you will have to serve that time with me during your lunch.**
- Failure to show up to make up your time will result in a disciplinary notice.
- *If you have special needs or health problems concerning this issue please bring a signed note from your parent.*

Cheating Policy:

All students will be held to the Academic Integrity policy of Richland School District II. Cheating is attempting to receive academic credit or helping someone else receive academic credit for work that was not personally done or for knowledge not personally mastered. THE PENALTY FOR CHEATING IS A ZERO THAT CANNOT BE DROPPED OR REPLACED, A PHONE CALL TO YOUR PARENT OR GUARDIAN, AND A DISCIPLINE NOTICE SENT TO YOUR ADMINISTRATOR WHICH IS THEN FILED.

Here are some ways you are presumed cheating:

- When you copy someone else's work or give your work to someone else to copy.
- When you turn in someone else's work as your own.
- Looking on another student's paper, turning around in your desk, passing notes, or talking during tests or quizzes.
- Bringing in or using any unauthorized information or technology during a test or quiz.

*THE PRESUMPTION IS THAT YOU ARE HONORABLE AND ETHICAL AND WOULD **NEVER** KNOWINGLY CHEAT.*

Homework:

Homework will be assigned almost every night. Homework should be done each night, but I will collect all of the homework the day of your test. Have it in the front of your binder ready to go. Assignments are to be done neatly on loose-leaf paper, using pencil or black/blue pen.

- Late work is NOT acceptable. Points will be deducted each day a homework assignment is turned in late.
- No name loses 5 points
- No paperclips. (Please staple assignments)
- If you are late to class, you are responsible for turning in work when you arrive. It will not be accepted at the end of class!
- Keep it organized in your notebook. You never know when I might give a notebook quiz!

Absence Policy:

- Being absent to class does NOT give you an excuse to not do an assignment! If you do not make up your missed work, it will result in a zero.
- Each of you is responsible for finding out what you have missed while absent. I will not hunt you down to give you your assignments; you must ask me or another person in your class. It is suggested that you pick a “study buddy”. Be sure to pick someone reliable and exchange phone numbers.
- Homework --if assigned the day you are present, it is due the day you return, at the beginning of class. If absent when assigned, it is due the second day back.
You are responsible for getting your work in on time, I will not ask!
- Test/Quiz –If you have been present for all material that is covered on a test you will be required to take the test the day you return. Otherwise, you must set up a time with me to make up a quiz or test. This must be completed within one week of your return. Failure to do so will result in a zero!

Grading:

Grading in my class is based on total points. *I will post your grades once a week, so you can record them in your agenda book and share them with your parents.* It is a good idea to record all graded papers on a Grade Sheet. This allows you to figure your grade at any time, and to compare the grade you calculate with what is posted. Your grade is calculated by dividing the total number of points received by the total number of possible points. If you would like to talk with me about your grades please see me before school, during lunch, or after school. The following is a break down of how many points each assignment will be worth.

Homework	(1-25pts)	Worksheet, Book/Class work, Pop Quizzes	(about 20%-30% of grade)
Quizzes	(10-50pts)	Labs, Quizzes, Projects, Library Work	(about 20%-30% of grade)
Tests	(50-100+pts)	Tests, Projects, Papers	(about 40% of the grade)

Grading Scale:

For a semester class, your final grade is calculated so that the first and second quarters are each worth 40% of your grade and your Final Exam (or EOCT) is worth 20% of your final grade.

A (93-100); B (85-92); C (77-84); D (70-76); F (0-69)

Substitute Policy:

If the substitute teacher leaves your name for me indicating that you have not followed their directions you will serve after school detention with me. Failing to show up for detention will result in a discipline notice and you still must serve afternoon detention except this time with an administrator!

Please sign the last sheet in this packet stating that you have read and agree to all of the above rules and regulations in Ms. Valentie's Biology class.

The following units will be covered during the course of the semester:

Unit	Topic	State Standard (B)
1	Lab Safety, Scientific Method, Chemical Bonding	1.1-1.9
2	Organic Molecules	2.8, 3.4-3.5
3	Microscopes, Cells, Transport Across Cell Membrane	2.1-2.3, 2.5
4	Photosynthesis and Cellular Respiration, Energy	3.1-3.3
5	DNA, Protein Synthesis, DNA Technology	B1, 4.1-4.4
6	The Cell Cycle and Regulation of Cell Division (Mitosis)	2.4-2.8
7	Meiosis	4.5
8	Laws of Heredity, Mendelian and Human Genetics	4.5-4.9
9	Mutations and Genetic Disease/Disorders	4.8
10	Evolution and Classification (survey of kingdoms)	5.1-5.7
11	Ecology	6.1-6.6
12	Nervous System (and other systems) *if time allows	5.1-5.7
13	Animal Behavior *if time allows	6.1-6.6

We will follow standards set by the state. You will be responsible for learning all standards listed above in order to pass the End Of Course Test set by the State. The items not bolded were taught during Applied Biology 1. The items bolded will be new and taught during Applied Biology 2. All topics from Applied Biology 1 will also be reviewed to help prepare you for the EOCT. I will discuss and review the standards during each unit that will be covered. Please note that the order in which we discuss each topic may be subject to change. We will monitor and adjust accordingly. The High School Biology Support Guide is now on the web at https://www.ed.sc.gov/apps/cso/standards/supdocs_hs.cfm#area_B.



Go Blazers!

BIOLOGY

Scientific Inquiry

The skills of scientific inquiry, including a knowledge of the use of tools, will be assessed cumulatively on statewide tests. Students will therefore be responsible for the scientific inquiry indicators from all of their earlier grade levels.

Standard B-1: The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

Indicators

- B-1.1 Generate hypotheses based on credible, accurate, and relevant sources of scientific information.
- B-1.2 Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation.
- B-1.3 Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument.
- B-1.4 Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.
- B-1.5 Organize and interpret the data from a controlled scientific investigation by using mathematics, graphs, models, and/or technology.
- B-1.6 Evaluate the results of a controlled scientific investigation in terms of whether they refute or verify the hypothesis.
- B-1.7 Evaluate a technological design or product on the basis of designated criteria (including cost, time, and materials).
- B-1.8 Compare the processes of scientific investigation and technological design.
- B-1.9 Use appropriate safety procedures when conducting investigations.

Standard B-2: The student will demonstrate an understanding of the structure and function of cells and their organelles.

Indicators

- B-2.1 Recall the three major tenets of cell theory (all living things are composed of one or more cells; cells are the basic units of structure and function in living things; and all presently existing cells arose from previously existing cells).
- B-2.2 Summarize the structures and functions of organelles found in a eukaryotic cell (including the nucleus, mitochondria, chloroplasts, lysosomes, vacuoles, ribosomes, endoplasmic reticulum [ER], Golgi apparatus, cilia, flagella, cell membrane, nuclear membrane, cell wall, and cytoplasm).
- B-2.3 Compare the structures and organelles of prokaryotic and eukaryotic cells.
- B-2.4 Explain the process of cell differentiation as the basis for the hierarchical organization of organisms (including cells, tissues, organs, and organ systems).
- B-2.5 Explain how active, passive, and facilitated transport serve to maintain the homeostasis of the cell.
- B-2.6 Summarize the characteristics of the cell cycle: interphase (called G₁, S, G₂); the phases of mitosis (called prophase, metaphase, anaphase, and telophase); and plant and animal cytokinesis.
- B-2.7 Summarize how cell regulation controls and coordinates cell growth and division and allows cells to respond to the environment, and recognize the consequences of uncontrolled cell division.
- B-3.4 Summarize how the structures of organic molecules (including proteins, carbohydrates, and fats) are related to their relative caloric values.**
- B-3.5 Summarize the functions of proteins, carbohydrates, and fats in the human body.**

Standard B-3: The student will demonstrate an understanding of the flow of energy within and between living systems.

Indicators

- B-3.1 Summarize the overall process by which photosynthesis converts solar energy into chemical energy and interpret the chemical equation for the process.
- B-3.2 Summarize the basic aerobic and anaerobic processes of cellular respiration and interpret the chemical equation for cellular respiration.
- B-3.3 Recognize the overall structure of adenosine triphosphate (ATP)—namely, adenine, the sugar ribose, and three phosphate groups—and summarize its function (including the ATP-ADP [adenosine diphosphate] cycle).
- B-2.8 Explain the factors that affect the rates of biochemical reactions (including pH, temperature, and the role of enzymes as catalysts).**

Standard B-4: The student will demonstrate an understanding of the molecular basis of heredity.

Indicators

- B-4.1 Compare DNA and RNA in terms of structure, nucleotides, and base pairs.
- B-4.2 Summarize the relationship among DNA, genes, and chromosomes.
- B-4.3 Explain how DNA functions as the code of life and the blueprint for proteins.
- B-4.4 Summarize the basic processes involved in protein synthesis (including transcription and translation).
- B-4.5 Summarize the characteristics of the phases of meiosis I and II.
- B-4.6 Predict inherited traits by using the principles of Mendelian genetics (including segregation, independent assortment, and dominance).
- B-4.7 Summarize the chromosome theory of inheritance and relate that theory to Gregor Mendel's principles of genetics.
- B-4.8 Compare the consequences of mutations in body cells with those in gametes.
- B-4.9 Exemplify ways that introduce new genetic characteristics into an organism or a population by applying the principles of modern genetics.**

Standard B-5: The student will demonstrate an understanding of biological evolution and the diversity of life.

Indicators

- B-5.1 Summarize the process of natural selection.
- B-5.2 Explain how genetic processes result in the continuity of life-forms over time.
- B-5.3 Explain how diversity within a species increases the chances of its survival.
- B-5.4 Explain how genetic variability and environmental factors lead to biological evolution.
- B-5.5 Exemplify scientific evidence in the fields of anatomy, embryology, biochemistry, and paleontology that underlies the theory of biological evolution.
- B-5.6 Summarize ways that scientists use data from a variety of sources to investigate and critically analyze aspects of evolutionary theory.
- B-5.7 Use a phylogenetic tree to identify the evolutionary relationships among different groups of organisms.

Standard B-6: The student will demonstrate an understanding of the interrelationships among organisms and the biotic and abiotic components of their environments.

Indicators

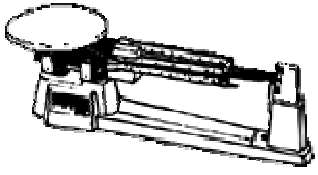
- B-6.1 Explain how the interrelationships among organisms (including predation, competition, parasitism, mutualism, and commensalism) generate stability within ecosystems.
- B-6.2 Explain how populations are affected by limiting factors (including density-dependent, density-independent, abiotic, and biotic factors).
- B-6.3 Illustrate the processes of succession in ecosystems.
- B-6.4 Exemplify the role of organisms in the geochemical cycles (including the cycles of carbon, nitrogen, and water).
- B-6.5 Explain how ecosystems maintain themselves through naturally occurring processes (including maintaining the quality of the atmosphere, generating soils, controlling the hydrologic cycle, disposing of wastes, and recycling nutrients).
- B-6.6 Explain how human activities (including population growth, technology, and consumption of resources) affect the physical and chemical cycles and processes of Earth.
- B-3.6 Illustrate the flow of energy through ecosystems (including food chains, food webs, energy pyramids, number pyramids, and biomass pyramids).**

LABORATORY SAFETY RULES FOR STUDENTS

1. Do only the experiments assigned or approved by the teacher. Unauthorized or unsupervised experiments are prohibited.
2. Wear proper eye protection and laboratory aprons or other protective clothing during all laboratory activities and in locations where chemicals are stored and handled.
3. Do not smoke, eat, drink, or chew gum or tobacco in the laboratory. Dangerous chemicals may get in your mouth or lungs!
4. Never engage in horseplay or practical jokes.
5. Dress appropriately on days when laboratory work will be done. Sandals or loose and baggy cloths should not be worn.
6. Confine or securely tie hair that reaches the shoulder. Remember that hair is flammable.
7. Clear your benchtop of all unnecessary material such as books and clothing before starting your work.
8. Use a wafting motion to test for odors.
9. Never point the open end of a test tube towards anyone. Never look directly down into a test tube; view the contents from the side.
10. Immediately report all accidents, not matter how minor, to the instructor.
11. Be prepared for the laboratory. Read all cautions, safety precautions and waste disposal methods in the procedure.
12. Know the location and proper function of all safety equipment.

If in doubt, ASK!

Lab Equipment



1. _____



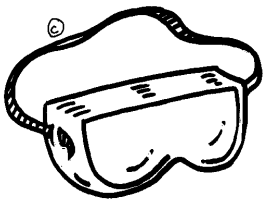
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3. _____



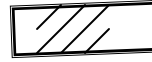
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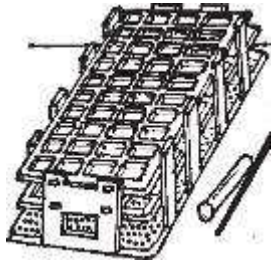
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9. _____



10. _____



11. _____



12. _____



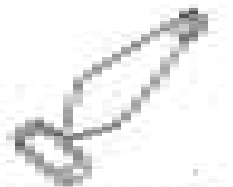
13. _____



14. _____



15. _____



16. _____

Student Name: _____ # _____

Ridge View High School - Science Department
Applied Biology 2 - Ms. Valentie

Please click on the 'google docs' link on my website to fill this information out on an electric form. This will ensure I have accurate information and reduced errors from misread handwriting.

Part 1-Syllabus

- I have gone to the website <http://www.rvh.richland2.org/~evalenti/> to read the syllabus, and fully understand the rules, requirements, and expectations for this class.

Student Signature

Date

Parent Signature

Date

Parent(s) Name (**print**): _____

Daytime Phone number: _____

Daytime E-mail (**please print clearly**): _____

Part 2- Laboratory Safety Contract

- As a student at Ridge View High School, I do hereby agree to follow all safety rules and regulations as set fourth by the instructor. I understand that I will not participate in laboratory activities until I successfully complete the safety assessment with a score of 90 or above. I realize that compliance with these rules is necessary to assure the safe operation of the school laboratory and provide a safe environment not only for myself, but also for my fellow classmates and teacher as well. I will, therefore cooperate fully with the teacher and students to assure all of us the safest laboratory possible. I will act responsibly to look for possible safety hazards and will immediately point out these hazards to the instructor. I realize that, as a student, much of the responsibility for safety is in my hands. I have read the attached rules and agree to comply with them I understand violation of these rules may result in the loss of laboratory privileges and possible disciplinary measures.

Student Signature

Date

- I (parent/guardian) have read this safety contract and the attached rules list. I give permission for my child/ward to participate in laboratory activities.

Parent Signature

Date

Student Name: _____

Class Periods: _____

Dear Parent,

I am glad to have your child in my class this semester. I asked your child to answer the questions you see below today during class. I would like you to also answer these questions to help me learn a little bit more about your child. I think it will be interesting to see how your answers compare 😊

1. How would you describe your child (physical characteristics).
2. What are some of the interests your child has outside of school (sports, music, etc.)
3. What kind of learner do you think your child is (visual, auditory, kinesthetic, mixture, etc.)
4. Is there anything important that I need to know about your child that would help make this semester more successful.
5. What is the best way to reach you?

Phone # _____

Email _____

Other _____