



Course Titles: **Biology and Chemistry**

Teacher: Mrs. Andy Green

Contact Information:

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The best times to reach me are Monday and Tuesday evenings, Wednesday-Friday anytime.

(Emails and texts will get quicker responses.)

Course Overviews:

- **Biology** is a high school course covering cell life, genetics, creation science as an alternative to evolution, ecology, insects, plants, reptiles, mammals, and more. We will observe and record specimens inside and outside, become proficient using the scientific method and microscope, and explore creatures through dissection.
- **Chemistry** is a high school course integrating weekly lab exercises, biographical sketches of Christian scientists, and mathematical proficiency at the algebra level. Our topics will include thermodynamics, kinetics, acids and bases, and atomic structure.

Supplies Needed:

- **Biology**—*Apologia Exploring Creation with Biology 3rd Edition Textbook* and Student **Notebook**, a set of **24 colored pencils**, and a **½-inch 3-ring binder**.
- **Chemistry**—*Apologia Exploring Creation with Chemistry 3rd Edition Textbook* and Student **Notebook**, a set of **24 colored pencils**, and a **½ inch 3-ring binder**.

Goals:

The Bible makes it clear in Romans 1:19-20 that people have no excuse for denying the existence and sovereignty of God: *For what can be known about God is plain to them, because God has shown it to them. For his invisible attributes, namely, his eternal power and divine nature, have been clearly perceived, ever since the creation of the world, in the things that have been made...*

My goals are these:

- that the Holy Spirit opens the kids' and my spiritual eyes to *see God as He meant for us to see Him* when we use our physical senses to explore what He has made,
- that we understand so thoroughly and think so critically we are able to *communicate clearly* what we've learned *accurately and persuasively* to others, and
- that we can engage in *respectful, knowledgeable conversation* with those who believe differently about the created world than we do.

The Classroom:

We will begin and end on time. Except for a break in the middle, we will use every minute allotted to us.

1st Half:

- We'll check our homework, and I'll answer any questions about the previous week's assignments.
- Tests might also be administered at this time.
- I will collect the students' Notebook Journals, so I can record their grades while they are on break.
- Before going on break, students will clear everything off the work area, so it can be prepared for labs.

BREAK

- Students may bring snacks and/or drinks. Both will also be available for purchase in the great room.
- This is the time to catch up with friends and/or use the restroom.

2nd Half:

- New vocabulary will be introduced and ambiguous information will be supplied for Student Notebook charts and/or graphic organizers.
- Labs and investigations will be completed and lab reports started.
- We'll play review games.
- I will hand out a hard copy of the upcoming week's assignment sheet.
- Before the students leave, we'll look over the assignment sheet, compare it to our text and notebooks and clarify any confusion.

At Home:

I have broken down every Module into manageable chunks. Students may work at their own paces—one chunk or many at a time depending on their learning styles and schedules—but *they must complete the week's assignments before the next class.*

Students will need to follow these procedures:

- Read or review the textbook pages.
- Complete corresponding notebook pages in ******PENCIL or BLACK PEN ONLY****** unless instructed otherwise in the written directions.
- Contact me via text or e-mail as soon as they encounter a problem that they cannot solve on their own using their textbooks and online or human resources.

The Notebook:

Student notebooks direct students to the important information in what could be overwhelming textbooks. The assigned pages will be corrected in class and their grades recorded.

They must be completed as follows:

- Proper scientific terminology must be used if it's provided in the textbook. Examples: *have babies=reproduce, the same=constant, weaken=dilute, etc.*
- Words **MUST** be written using ******PENCIL or BLACK PEN. ******
- Any corrections we make **IN CLASS** will be made using **COLORED—RED, ORANGE, GREEN, BLUE, PURPLE, PINK, or BROWN—pens.** (*This allows me to differentiate between what was completed outside of class and corrections the students made as we went over homework in class.*)
- ALL illustration boxes, graphic organizers and charts must be filled in.

Grading:

Each module requires students to answer “On-Your-Own” questions and complete Study Guides, partake in Investigations or Labs, and take Assessments.

Breakdown is as follows:

- Assignments will be converted to a 100% scale. (14 correct/15 total=93%)
- Tests are worth 50%.
- OYO and Study Guides are worth 25%.
- Investigations and Labs are worth 25%.

Extra Credit:

Extra credit assignments are available to any and all students AFTER their regular class work has been completed and turned in. Additionally, every assessment offers extra credit. For instance, a test could have 35 questions. I would let the students know that I am going to take their grades based on their ability to answer any 30 questions they choose to answer. Any questions answered correctly BEYOND 30 will earn extra credit points. If a student answers 30/30 (and totally ignores the other 5 or gets them wrong), then the grade would be 100%. If a student gets any of the additional 5 questions correct, those points would be added to the 100%.

Honors Credit:

If students desire to complete their science courses for honors credit, they must type formal lab reports for each module. Modules often include many choices for experiments and room to write the procedure using the scientific method in the student workbook. Students may choose to type the formal report for one of the labs completed in class or one of the other labs for any given module. Guidelines for what goes into a formal lab report will be provided for any student wishing to pursue this option. *Poorly composed lab reports do not necessarily warrant honors credit. Deeper thought, synthesis with previously known material, and application to real life must be evident. **And, it must be noted that extra credit is not available if homework is not completed in a timely manner.***

How to Get an ‘A’ in these Classes:

- Talk to me if the textbook is too overwhelming, and you’re having a hard time making sense of it.
- Complete daily assignments in Student Notebooks and **BRING THEM TO CLASS**.
- Pay attention to the corrections you’ve made to your assignments. I will tell you specifically what your answer is missing, and you’ll add it to your answer with a colored pen.
- Use the TOOLS I’ve provided for you (*colored comments, graphic organizers, AndyGreenTeacher QUIZLET study sets, etc.*) as you study for tests and complete your Notebooks.
- Do your best. (Ask me if you’re not sure what your best is!)
- Don’t cheat.

Absence and Late Work Policies:

If you know IN ADVANCE that you will be absent, it is up to you to get your work done on time.

If you have an EMERGENCY OR EXTENDED/SEVERE ILLNESS, new due dates can be worked out.

What we do in our science classes is very straightforward, and I am a very reasonable lady.

Your options for knowing what to do include these:

- Check FACTS for Weekly Assignment Sheets (WAS).
- Email me, and I'll send you the WAS as an email attachment.
- Text me, and I'll send you a picture of the WAS.
- If the WAS just doesn't make sense, you may make an appointment with me using my online scheduler to Skype, Google Hangout, or Facetime. You may also get help from your parents or siblings.

If your homework is not complete when it comes time to check it in class, it will be considered **one week late already and lose 10% from the grade** you earn once it is complete.

*Take-Home or On-line Tests are considered homework and lose points for being late.

Tests and assignments that are not received by **the second week will receive a zero.

Tests:

Written or online assessments will be given after each Module.

- They will contain a variety of question formats.
- Concepts will have been covered thoroughly in class or reviewed using Quizlet.

Course: Biology Week-by-Week *			
Semester I			Semester II
1	Module 1—Biology, The Study of Life	19	Module 9—Evolution (Part Scientific Theory/Part Unconfirmed Hypothesis)
2	The Scientific Method, Using a Biological Key, Introduction to the Microscope	20	Charles Darwin, Microevolution, Macroevolution, Structural Homology
3	TEST 1 Module 2—Kingdom Monera	21	TEST 9 Module 10--Ecosystems
4	Bacteria, Pond Life, Preventing Bacterial Infections	22	Energy, Symbiosis, Water, Oxygen, and Carbon Cycles, Global Warming
5	TEST 2 Module 3—Kingdom Protista	23	TEST 10 Module 11—Animalian Invertebrates
6	Classification, Subkingdoms Protozoa and Algae, Characteristics	24	Symmetry, Sponges, Hydra, Earthworm Dissection
7	TEST 3 Module 4—Kingdom Fungi	25	TEST 11 Module 12—Phylum Arthropoda
8	General Characteristics, Reproduction, Yeast and the Fermentation Process	26	Crustacea, Crayfish Dissection, Arachnida, Insecta, Insect Classification
9	TEST 4 Module 5—The Chemistry of Life	27	TEST 12 Module 13—Phylum Chordata
10	Atoms, Elements, Molecules, Osmosis, Diffusion, Enzymes	28	Subphyla Urochordata and Cephalochordata, Fish Dissection
11	TEST 5 Module 6—The Cell	29	TEST 13 Module 14—Kingdom Plantae
12	Cell Structure and Functions, Metabolism, Protein Synthesis	30	Basic Anatomy, Structure of Leaves, Roots, and Stems, Classification

COURSE OVERVIEW

13	TEST 6 Module 7—Cellular Reproduction	31	TEST 14 Module 15—Kingdom Plantae
14	Genes, Chromosomes, DNA, Mitosis, Meiosis, Asexual/Sexual Reproduction	32	Physiology, Reproduction, Water Transport, Flower Anatomy, Flower Dissection
15	TEST 7 Module 8--Genetics	33	TEST 15 Module 16—Reptiles, Birds, and Mammals
16	Gregor Mendel, Punnett Squares, Pedigrees, Genetic Crosses, Traits	34	Classes Reptilia, Aves, and Mammalia, Dinosaurs, Bird Embryology
17	TEST 8	35	TEST 16
18	Holiday Break	36	Summer Break

Course: Chemistry Week-by-Week *			
Semester I			Semester II
1	Module 1—Measurement, Units, and the Scientific Method	19	Module 9—Acid-Base Chemistry
2	Metric System, Accuracy, Precision, Significant Figures, Scientific Notation	20	Characteristics, Definitions, and Behavior of Acids and Bases
3	TEST 1 Module 2—Atoms and Molecules	21	TEST 9 Module 10—The Chemistry of Solutions
4	Law of Mass Conservation, Elements, Compounds, Molecules, Classifying Matter	22	Solubility, Effects of Temperature on Gases and Solids, Molality, Freezing-Point Depression
5	TEST 2 Module 3—Atomic Structure	23	TEST 10 Module 11—The Gas Phase
6	Electrical Charge, Protons, Neutrons, Electrons, Isotopes, Models of Atoms	24	Definition of Pressure, Boyle's and Charles' Laws, Ideal Gases, Ideal Gas Law
7	TEST 3 Module 4—Molecular Structure	25	TEST 11 Module 12—Energy, Heat, and Temperature
8	Electron Configuration, Periodic Table, Electronegativity, Atomic Radius	26	First Law of Thermodynamics, Calorimetry, Units of Measuring Heat and Energy
9	TEST 4 Module 5—Polyatomic Ions and Molecular Geometry	27	TEST 12 Module 13—Thermodynamics
10	VSEPR Theory, Polar and Nonpolar Covalent Bonds, Comparing Solubility	28	Enthalpy, Hess's Law, Energy Diagrams, Second Law of Thermodynamics, Application
11	TEST 5 Module 6—Changes in Matter	29	TEST 13 Module 14—Kinetics
12	Chemical and Physical Changes, Density, Kinetic Theory, Chemical Equations	30	Concentration and Temperature in Reaction Rates, Rate Orders and Equations, Catalysts,
13	TEST 6 Module 7—Describing Chemical Reactions	31	TEST 14 Module 15—Chemical Equilibrium
14	Decomposition, Formation, and Combustion Reactions, Molecular and Atomic Mass	32	Equilibrium Constant, Le Chatelier's Principle, Acid-Base Equilibria, pH Scale
15	TEST 7 Module 8--Stoichiometry	33	TEST 15 Module 16—Reduction-Oxidation Reactions
16	Limiting Reactants, Volume and Mass in Chemical Equations, Formulas	34	Oxidation Numbers, Characteristics, Batteries, Corrosion, Real Batteries
17	TEST 8	35	TEST 16
18	Holiday Break	36	Summer Break

Expectations:

You may expect the Teacher to:

- Be prepared, on time and fair in the classroom.
- Respond to phone, text, or email messages within 24 hours.
- Be available for conferences or discussions per appointment.
- Work hard to see every student succeed.
- Provide free tutoring when an appointment is made.
- Be available by phone to answer questions.

I expect the Parents to:

- Check FACTS at least every two weeks to make sure that students complete the assignments well and in a timely fashion.
- Provide the materials the students need to be successful in this class.
- Proctor the Take-Home Tests to make sure only allowed resources are consulted.
- Contact the teacher if there are any problems ASAP.

I expect the Students to:

- Speak only kind words to each other.
- Keep their hands off of anything that does not belong to them unless it's MINE or the PROPERTY of The Rock Academy, and I've given them permission to touch or use it.
- Do their OWN work to the BEST of their abilities. (It might be 100%. It might be 60%. But it's theirs.)
- Keep current with all assignments.
- Ask questions and ask for help when they need it.
- Check FACTS every week! I update on a regular basis, give helpful homework hints, and provide links to study tools.