

Science 10

Bert Church High School

Mr. Horne

shorne@rockyview.ab.ca

Major Focus: Science 10 is an integrated academic course that helps students better understand and apply the concepts and skills common to Biology, Chemistry and Physics. It is the first course leading to the grade eleven courses: Biology, Chemistry, Physics or Science 20.

Science 10 is comprised of four units as well as portions of review, which are as follows:

Unit	Major Concepts	Timeline
Energy Flow in Technological Systems	The first and second laws of thermodynamics have been useful in the development of modern and efficient energy conversion devices. Students investigating mechanical energy conversions and transfers in systems will recognize that while energy is conserved, useful energy diminishes with each conversion. Students learn that energy can be observed only when it is being transferred, and that mechanical energy can be quantified. Energy conservation and conversion concepts are applied by students to explain energy conversions in natural and technological systems, and to investigate the design and function of energy conversion technologies.	~ 22 classes
Cycling of Matter in Living Systems	The fundamental unit of life, the cell, is an example of an efficient open system comprised of a cell membrane and organelles that carry out the basic functions of all living organisms. Students will learn that technological advancements in microscopy have enhanced the study of cells and cellular processes. The understanding of life processes at the cellular level can also be applied to multicellular organisms with a strong focus on plants.	~ 22 classes
Energy and Matter in Chemical Change	Chemical changes involve energy and transformations of matter. A knowledge of the underlying structure of matter and the basic chemical species is important in understanding chemical changes. As students explore the properties of molecular and ionic compounds, including acids and bases, they begin to appreciate the need for a classification scheme and a system of nomenclature. Students classify, name compounds and write balanced chemical equations to represent chemical changes. As well, students are introduced to the law of conservation of mass and the mole concept.	~ 29 classes
Energy Flow in Global Systems	Solar energy sustains life and drives the global climate systems on Earth. Without solar energy there would be no heat or precipitation and, therefore, no life on Earth. Students will gain an understanding that the absorption and transfer of thermal energy at and near Earth's surface results in a variety of climate zones with characteristic weather patterns and biomes. Climatic factors largely determine the flora and fauna found in each of the world's major biomes. The <i>United Nations Intergovernmental Panel on Climate Change</i> has stated that the balance of evidence suggests a human influence on global climate. Scientists from various fields are studying this relationship to determine the potential impact on biomes.	~ 15 classes
Final Exam Review		~ 2 classes

The content, timeline and weightings for each unit come from recommended instructional time in the Alberta Program of Studies. These timelines are approximate and are subject to change to satisfy the needs of our class.

Course Evaluation

Quizzes & Assignments	25%
Projects & Labs	15%
Unit Tests	30%
Final Exam	30%

Not all activities will be assigned marks, however, students are expected to demonstrate their full understanding on all activities. Formative assessment happens throughout the learning process and will be graded; however it will not count towards your final grade and will be returned with feedback. Summative assessment will be graded and recorded at the end of the learning process. Think of this in terms of sports. Formative assessment is the practice; no score, just coaching. Summative assessment is the game, and the score counts. Practice increases your chances of a better game!

Focus & Office Hours

Tutorials will now be held during focus time (Tuesday through Thursday). Students must sign up via PowerSchool as not every day of focus will be available for additional support. This is the best time to receive extra help with current or previous topics outside of class time. I am available to answer individual concerns by phone or in person by appointment.

Materials

Computer, scientific calculator, textbook (Science Focus 10: \$100 replacement cost), binder, paper (lined and graphing), writing utensils

Expectations

Students will be guided by the general principles of respect, responsibility, and safety while in the science classroom.

- Take responsibility for your own learning. Come prepared, focus in class (that means no phones), ask questions, and seek extra help. I will make myself available as often as possible throughout Focus time; however, it is the student's responsibility to sign up accordingly.
- **Students and parents are to monitor progress on PowerSchool consistently throughout the semester. It is the responsibility of the student to follow up with the teacher regarding errors in marks reporting.**
- **Technological devices** are valuable learning tools and are to be used for **learning purposes only**. The use of technology for inappropriate purposes (social media, games, videos, etc.) will not be tolerated. Smart phones are not to be used during class, unless the Science activity relates directly to their use. Inappropriate use may lead to confiscation or the student will be asked to store the phone in their locker permanently.
- **No food, and drinks only in spill proof containers in the chemistry classroom. Absolutely no food or drinks during labs, even water bottles.**
- Assignments, labs and projects are due at the beginning of class.
- **In the case of absence:**
 - If you know you are going to be absent it is imperative that you notify your teacher of the absence well in advance to make prior arrangements for tests, quizzes and what you will miss during lessons. Extended planned absences (vacations, tournaments, etc.) greater than three instructional days require the proper BCHS documentation and a minimum of one week's notice.
 - If you miss class due to an **excusable absence**, the absence must be cleared within 24 hours and it is EXPECTED that you check OneNote or communicate with a reliable classmate throughout your absence to find what you have missed. All work is to be completed and submitted within two days of your return. If you miss an exam, you will be required to write the exam before or after school or during focus block on an agreed upon date (to be set on the first day back to class). Students will be **unable to make up missed lab work** outside of the scheduled time, however, he or she will collect data from the teacher, and submit their own lab write-up on the assigned due date.
 - If you have an **unexcused absence** on the day of a test, quiz or lab, you will receive an **NHI** for the assigned work. You will be unable to turn in the work for marks, however, you may turn it in (or receive a copy) for feedback and growth.
- **Plagiarism and cheating will not be tolerated in any amount or for any excuse.** All student work is held in accordance with the BCHS Academic Integrity Policy. Parents and guardians will be contacted at my discretion based on the severity of the incident. Administration may be involved as BCHS takes academic dishonesty very seriously.
- Please be aware that science 10 is an academic course that serves as a stepping-stone to higher education. It is recommended that students review material covered in class for approximately 30 to 45 minutes per day to allow students to develop study habits that will help you to achieve your academic potential.
- **THE BEST WAY TO STUDY SCIENCE IS BY WORKING THROUGH PRACTICE PROBLEMS! DO NOT SIMPLY READ THE TEXTBOOK TO PREPARE FOR QUIZZES, TESTS AND THE FINAL EXAM!**