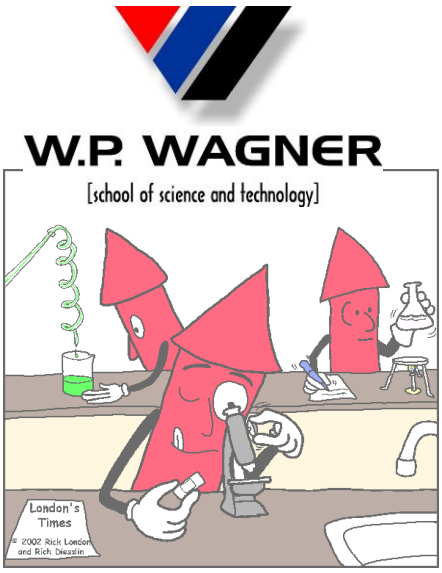
Outline Science 10AP



Info: Course Outline W.P. Wagner School
Mr. Linville Rm 166 allen.linville@epsb.ca
Class website: www.linville.ca
Necessary Materials: Addison-Wesley Science 10
Calculator, reliable writing utensil, 3-ring binder

Course Overview: Science 10 is the foundation course for all academic senior high science courses. Upon successful completion of the course, students who have a final mark above 65% may choose to enroll in Biology 20, Chemistry 20 or Physics 20. Students with a final mark below 65%, but at or above 50% may choose to enroll in Science 20. The aim is to have students understand and apply the fundamental concepts and skills that are common to the areas of Biology, Chemistry, Physics and Global Systems. Science 10 also has the goal of educating students about the nature of science and technology and how they impact our society.

Unit A: Matter and Energy in Chemical Change (*Chemistry)* about 24 classes 20%
Chemical changes involve energy and transformations of matter. We will classify, name, and explore the properties of molecular and ionic compounds, including acids and bases. We will write balanced chemical equations to represent chemical changes and law of conservation of mass and the mole concept.

Unit B: Energy Flow in Technological Systems *(Physics)* about 24 classes 20%
Students investigating mechanical energy conversions and transfers in systems will recognize that while energy is conserved, useful energy diminishes with each conversion. We will learn that energy can be observed only when it is being transferred, and that mechanical energy can be quantified. Energy conservation and conversion concepts will be applied by students to explain energy conversions in natural and technological systems and to investigate the design and function of energy conversion technologies.

Unit C: Cycling of Matter in Living Systems *(Biology)* about 24 classes 20%
Students will study the fundamental unit of life, the cell, as 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 study the technological advancements in microscopy that have enhanced the study of cells and cellular processes. The understanding of life processes at the cellular level will also be applied to multicellular organisms.

Unit D: Energy Flow in Global Systems *(Biosphere and Climate Change)* about 12 classes 10%
Solar energy sustains life and drives the global climate systems 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 *United Nations Intergovernmental Panel on Climate Change* has stated that the balance of evidence strongly suggests a human influence on global climate. Scientists from various fields are studying this relationship to determine the potential impact on biomes.

Final Exam TBA - January Exam Week 30%

Evaluation/Grading Policies: Within each unit, the unit exam will be **weighted 60%** and coursework (including assignments, quizzes, and labs) will be **weighted 40%**. **Missed Exams, quizzes, etc. will be written upon the day of return unless otherwise discussed with me.**

Replacement Exam Policy

- Must provide sufficient evidence of understanding the learner outcomes (from the Program of Studies)
- Must be approved by the teacher
- Assessment must fall within a 15-20% difference from all other previous unit assessments

IMPORTANT: All students will be required to write the designated unit exam on the date indicated. Circumstances requiring alternate arrangements must be discussed prior to this date. Students who cheat on exams or plagiarize will be met with severe consequences and disciplinary action at the discretion of the teacher. Make up opportunities for exams missed due to unexcused absences may be deferred until the end of the semester.

Expectations

1. Be on time. Important information is often given right at the start of class. Do not expect explanations to be made a second time.
2. A phone, iPod or other electrical device is **NOT** a calculator and you will not be allowed to use it for this purpose.
3. Leave your seat area as clean as you found it. Take your garbage and push in your chair!
4. **Your assignments are your responsibility.**
5. **Late assignments are unacceptable.**

Talk to me when you are unsure of something, if you have questions, or need extra help. This is a fast paced course full of new information. Do not leave studying to the end. Homework is **NOT** something to avoid, people who are successful in this course do the homework as it is assigned. Regular homework checks will occur and results posted on school zone for parents.
Challenge yourself. Keeping on top of this course could result in a better than expected outcome!

FIRST & AP Content

AP students will be engaged in activities and topics such as:

- Spectral analysis to identify composition
- Greater coverage of kinematics using Vernier data logging systems
- Quantum mechanical model of the atom and electron arrangement
- Greater detail in microscopy, DNA, RNA, cell structure and functions