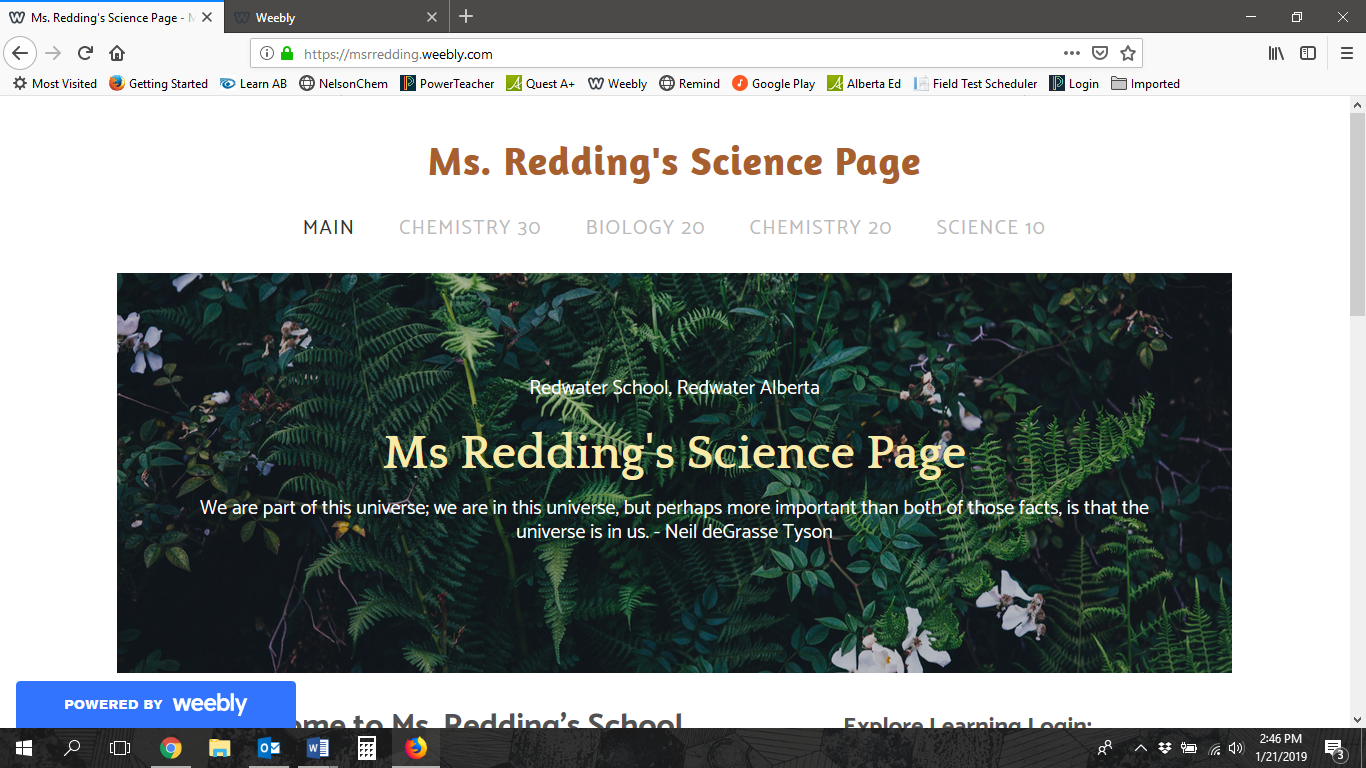
Science 10 Outline

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Visit: **msrredding.weebly.com** for notes and videos.

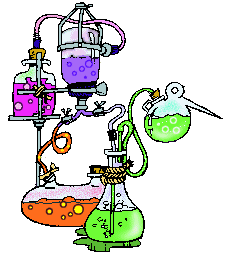


**Text:** Science Focus 10

**Unit A: Energy and Matter in Chemical Change (25%)** (Nature of Science Emphasis)

**Overview**: 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.

**Unit B: Energy Flow in Technological Systems (25%)** (Science and Technology Emphasis)

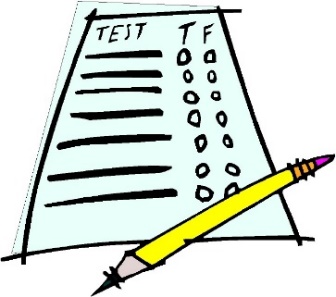
**Overview**: The first and second laws (conservation and conversion) of thermodynamics have been useful in the development of modern and efficient energy conversion devices. Students investigating mechanical energy conversions and transfers in systems will recognize that while energy is conserved, useful 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.

**Unit C: Cycling of Matter in Living Systems (25%)** (Nature of Science Emphasis)

**Overview**: 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.

**Unit D: Energy Flow in Global Systems (25%)** (Social and Environmental Contexts Emphasis)

**Overview**: 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 United Nations Intergovernmental Panel on Climate Change 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.

**Evaluation:** Student grades will be determined by a culmination of summative assignments/labs/projects/labs as well as Unit exams. No formative work will affect your overall grade. Unit exams count for 40% of each Units overall mark and all summative work will comprise the remaining 60%. Course work is worth 70% of the final grade, with the Final Exam worth the remaining 30%.

**Lates:** It is expected that you will be in your desk and ready to work by the second bell.  If you should come late to class, you will often find the door closed and locked. Please do not bang on the door, just knock politely and I will let you in as soon as it is convenient to do so.

**Absences:** You are expected to take an active part in your schooling.  For this reason, **you are responsible** for finding out about missed assignments.  I will not hunt you down over missed work. Arrangements should be made immediately upon your return to school to get missed work in. Some assignments and labs may be impossible to repeat and for these assignments you may have to accept an alternative assignment. If you have to miss a test or a quiz for any reason, **phone the school office BEFORE** the scheduled exam or quiz and have the secretary's report this to me.