



Standards and Procedures 2023-2024

Subject & Grade Level:	Science and Technology 306
Teacher:	Steven Robertson
School Year:	2023 - 2024

Message to Parents:

The successful study of high school science involves the memorization and understanding of large amounts of information. Students are required to keep excellent notes and to frequently review them.

Important Reporting Dates:

Progress Report: October 16

Term 1 - Parent/Teacher interview: November 23, 2023

Term 2 - Parent/Teacher interview: February 22, 2024

Term 3 - Available online by June 25, 2024

Teacher Methods of Communication:

EMSB email / Phone call by request

Homework website: <https://sites.google.com/view/facehighschool309/home>

Term 1 - 20% of School Grade			
Competency Evaluated: Science Theory (with some Practical Science)			
Evaluation Methods/Tools	Topic / Skill Evaluated	Timeline / Frequency of Evaluations	Weight of Evaluation
1. Tests/assignments	(See course content)	Regularly	70 %
2. Science labs/reports	Experiments/reports	Periodically	30 %



Term 2 - 20% of School Grade			
Competency Evaluated: Science Theory (with some Practical Science)			
Evaluation Methods/Tools	Topic / Skill Evaluated	Timeline / Frequency of Evaluations	Weight of Evaluation
1. Tests/assignments	(See course content)	Regularly	70 %
2. Science labs/reports	Experiments/reports	Periodically	30 %

Term 3 - 60% of School Grade			
Final Exams: 2 Final EMSB June Exams: Science and Technology Theory Exam Science and Technology Lab Exam			
Competency Evaluated: Science Theory			
Evaluation Methods/Tools	Topic / Skill Evaluated	Timeline / Frequency of Evaluations	Weight of Evaluation
1. Tests/assignments	(See course content)	Regularly	70%
2. Final theory exam	All topics covered	June 2023	30%
Competency Evaluated: Practical Science			
Evaluation Methods/Tools	Topic / Skill Evaluated	Timeline / Frequency of Evaluations	Weight of Evaluation
1. Labs/assignments	Experiments/reports	All results from the year	70%
2. Final Lab exam	All skills developed	June 2023	30%

Late work policy:

Assignments are expected to be completed on time. Late assignments will be accepted with a valid reason. Grade deductions are possible for non-justified late assignments.

Science and Technology Sec III

Overview of Topics

The Living World

CELL DIVISION

- DNA
- Mitosis
- Functions of cell division (reproduction, growth, regeneration)
- Meiosis and sexual development (meiosis, fertilization)
- Genetic diversity

TISSUES, ORGANS AND SYSTEMS

- Tissues
- Organs
- Systems

SYSTEMS

NUTRITION

DIGESTIVE SYSTEM

- Types of foods (water, proteins, carbohydrates, fats, vitamins, minerals)
- Energy value of different foods
- Digestive tract (mouth, esophagus, stomach, small intestine, large intestine, anus)
- Transformation of food (mechanical, chemical)
- Digestive glands (salivary glands, gastric glands, pancreas, liver, intestinal glands)

CIRCULATORY AND RESPIRATORY SYSTEMS

- Respiratory system (nasal cavity, pharynx, trachea, bronchi, lungs)
- Functions of blood constituents (plasma, formed elements)
- Compatibility of blood types
- Circulatory system (types of blood vessels)
- Lymphatic system (lymph, antibodies)

EXCRETORY SYSTEM

- Urinary system (kidneys, ureters, bladder, urethra)
- Components of urine (water, mineral salts, urea)
- Maintaining a balanced metabolism (kidneys, lungs, sweat glands)

RELATIONSHIPS

NERVOUS AND MUSCULOSKELETAL SYSTEMS

- Central nervous system (brain, spinal cord)
- Peripheral nervous system (nerves)
 - o Neuron (synapse, axon, dendrites)
 - o Neural inflow (voluntary act, reflex arc)
- Sensory receptors (eye, ear, skin, tongue, nose)
- Musculoskeletal system (bones, joints, muscles)
 - o Function of bones, joints and muscles
 - o Types of muscles
 - o Types of joint movements

REPRODUCTION

REPRODUCTIVE SYSTEM

- Puberty (male and female)
- Hormone regulation in men
- Hormone regulation in women
 - o Oogenesis
 - o Ovarian cycle
 - o Menstrual cycle

The Material World

PROPERTIES OF MATTER

- Characteristic physical properties
 - o Melting point
 - o Boiling point
 - o Density
 - o Solubility
- Characteristic chemical properties
 - o Reaction to indicators
- Properties of solutions
 - o Concentration
 - o Solute
 - o Solvent

CHANGES IN MATTER

- Physical changes
 - o Dissolution
 - o Dilution
 - o Phase changes
- Chemical changes
 - o Decomposition and synthesis
 - o Oxidation
 - o Precipitation
- Forms of energy (chemical, thermal, mechanical, radiation)
- Particle model

ORGANIZATION OF MATTER

- Pure substance (compound, element)
- Homogeneous and heterogeneous mixtures

FLUIDS

- Compressible and incompressible fluids
- Pressure
- Relationship between pressure and volume

WAVES

- Frequency
- Wavelength
- Amplitude
- Decibel scale
- Electromagnetic spectrum
- Deviation of light waves
- Focal point of a lens

The Earth and Space

THE EARTH

- Geological time scale
- Major stages in the history of life on Earth
- Extinctions
- Fossils
- Stratigraphic layers

SPACE

- Scale of the universe
- Astronomical unit
- Light year
- Location of the Earth in the universe
- Conditions conducive to the development of life

The Technological World

GRAPHICAL LANGUAGE

- Geometric lines
- Forms of representation (sketch, perspective drawing, oblique projection)
- Basic lines
- Scales
- Orthogonal projections (multiview, isometric)
- Sections
- Dimensioning
- Standards and representations (diagrams and symbols)

MECHANICAL ENGINEERING

- Linking of mechanical parts
- Typical functions
- Function, components and use of motion transmission systems (friction gears, pulleys and belt, gear assembly, sprocket wheels and chain, wheel and worm gear)
- Function, components and use of motion transformation systems (screw gear system, cams, connecting rods, cranks, slides, rotating slider crank mechanisms, rack-and-pinion drive)

MATERIALS

- Constraints (tension, compression, torsion)
- Mechanical properties
- Types and properties
 - o Ferrous alloys
 - o Nonferrous metals and alloys
 - o Wood and modified wood

BIOTECHNOLOGY

- Processes
 - o Pasteurization
 - o Manufacture of vaccines
 - o Assisted reproduction
 - o Cell cultures
 - o Genetic transformation (GMOs)