

Grade 8 Science

Program Rationale

The secondary science program is guided by the vision that all students have the opportunity to develop scientific literacy. The goal of scientific literacy is to develop the science-related knowledge, skills and attitudes that students need to solve problems and make decisions, and at the same time help them become lifelong learners - maintaining their sense of wonder about the world around them.

Diverse learning experiences within the science program provide students with opportunities to explore, analyze and appreciate the interrelationships among science, technology, society and the environment, and develop understandings that will affect their personal lives, their careers and their futures.

Assessment Breakdown

Final Exam	20%
Tests	25%
Quizzes	20%
Assignments/Labs	35%

Student Expectations

Students are expected to complete reading and classroom work to the best of their ability, to participate in class activities and discussions, to regularly review notes, to keep a complete, neat notebook, and to display courtesy and respect to fellow classmates and teachers. If these expectations are fulfilled, the student will meet with success. Where these expectations are not fulfilled, the student and/or parent will be notified.

Like our real life workplaces, deadlines *must* be met. In this respect, assignments are also expected to be handed in on time. Late assignments will be accepted, with communication from parents through a note, e-mail, or phone call.

Lab equipment is costly and can result in harm to students if misused. Misbehaviour may result in being excluded from that lab activity.

All missed tests or quizzes will be written the day back from the absence!

Unit A - Mix and Flow of Matter

In this unit, students will investigate the nature of mixtures and fluids. They will explore the differences between pure substances, mechanical mixtures and solutions, as well as the factors that affect solubility of substances. They will investigate the nature of fluids and learn about viscosity, density, buoyancy, and pressure and how we use fluids in a wide variety of applications. We will also be examining the ideas that constitute the particle theory of matter.

UNIT B - CELLS AND SYSTEMS

In this unit, students investigate the characteristics of living things in terms of, their general structure, function and organization. Students will learn the characteristics of cell structures and functions, and examine unicellular and multicellular organisms. We will also explore human body systems in detail, and examine the effect of diseases on the body.

UNIT C - LIGHT AND OPTICAL SYSTEMS

In this unit, students will learn about the historical development of the nature of light, and learn about the basic properties of light. We will examine lenses in microscopes, telescopes, binoculars, and other optical devices. Students will use their knowledge of how light behaves to investigate and describe how light travels in the eye and within a camera.

UNIT D - MECHANICAL SYSTEMS

Humans are continually developing tools and machines to help perform tasks. In this unit, students will examine the different types of simple machines, and how they can be linked together to form complex machines. Students will analyze mechanical devices and solve problems to determine the mechanical advantage, speed ratio, and efficiency of a variety of machines, including hydraulic systems.

UNIT E - FRESH AND SALT WATER SYSTEMS

Water covers about 74% of the Earth, and in this unit we study the important role of water. Students will discover how the rain that falls on them today could end up in the ocean or frozen in an icecap sometime in the future. They will investigate how water moves in waves, tides and current and will investigate the effect water has on climate. We will also examine the effect humans and their lifestyles have on the Earth's water supply.