Grade 7 Science Syllabus
Mr. Tasch
Glenview Senior Public School 2018-2019

Overview

The learning goals in Science 7 include three main components:

1. to relate science and technology to society and the environment,
2. to develop the skills, strategies, and habits of mind required for scientific inquiry and technological problem solving
3. to understand the basic concepts of science and technology.

The 4 topics which are covered in Grade 7 are listed below with the main points.

Understanding Structures and Mechanisms – Form and Function

- Structures have a purpose
- The form of a structure is dependent on its function
- The interactions between structures and forces is predictable

Understanding Structures and Matter and Energy – Pure Substances and Mixtures

- Matter can be classified according to its physical characteristics
- The particle theory of matter
- Pure substances and mixtures have an impact on society and the environment

Understanding Earth and Space Systems – Heat in the Environment

- Heat is a form of energy that can be transformed and transferred
- There are many sources of heat
- Heat has both positive and negative effects on the environment

Understanding Life Systems – Interactions in the Environment

- Ecosystems are made up of biotic and abiotic elements that depend on each other
- Ecosystems are in a constant state of change
- Human activities have the potential to alter the environment

Text

Pearson. ***Investigating Science and Technology 7*** Print Textbook to be used within the classroom.

Assessments

Students will be assessed based on the following types of evaluation:

TESTS / QUIZZES – used to check understanding of basic concepts, critical thinking and problem solving ability, communication skills and the ability to apply curriculum concepts to real-life situations

LAB REPORTS – hands-on activities will be a part of the program in all units – some activities will be reported on. Students will learn proper reporting techniques and will be expected to use observations from the activity, key concepts from the unit and scientific logic and reasoning in order to analyze these activities when writing lab reports

PROJECTS – students will have the opportunity to design and build structures related to curriculum concepts. Students may be asked to present their structures or do a summative analysis of their design based on curriculum concepts that they have previously learned

ASSIGNMENTS – throughout the year students will be asked to do smaller assignments in order to reinforce curriculum concepts using written, oral, visual and kinesthetic learning. This may include assignments such as title pages, oral presentations, anchor charts, scientific diagrams, questions from a handout or the textbook and graphing activities.

At the end of the term, students will receive a mark based on several of the above evaluation methods. The most recent and consistent level that they achieve when completing their various tests, projects, assignments and lab reports will be used to generate their levels and subsequent marks for the Progress Report, Term 1 Report Card and Term 2 Report Card.

Class Schedule (Please note the schedule is subject to change)

Term 1

Introduction and Safety

Form and Function

- Classification of Structures
- Forces That Can Act on Structures
- Stabilizing Structures
- Elements of Design
- Determining Consumer Need
- Lifespans of Common Structures

Pure Substances and Mixtures

- Classification of Matter by Composition
- The Particle Theory of Matter
- Concentration and Solubility
- Factors Affecting Solubility
- Separating Solutions and Mechanical Mixtures
- Effects of Use and Disposal of Pure Substances and Mixtures on the Environment

Term 2

Heat in the Environment

- Energy Transformations
- Changes of State
- Heat Transfer
- How Heat Affects Air, Water and Land
- Energy Transformations and Heat Pollution
- Heat, Gases and the Atmosphere
- Managing Heat Issues

Interactions in the Environment

- Biotic and Abiotic Elements
- The Roles of Producers
- Transfer of Energy in Ecosystems
- Cycling Matter
- Interactions and Changes in Ecosystems
- The Environmental Impact of Humans