



THE CATHOLIC DISTRICT SCHOOL BOARD OF EASTERN ONTARIO
ST. THOMAS AQUINAS CATHOLIC HIGH SCHOOL



SCIENCE, GRADE 10 Academic (SNC2D)
2018

TEACHER: Ms. B. McElroy

CREDIT VALUE: 1

PREREQUISITE: Grade 9 Academic Science

TEXTBOOKS: Pearson *Investigating Science 10*

MINISTRY DOCUMENT: The Ontario Curriculum, Grades 9 and 10 Science (revised), 2008.

http://www.edu.gov.on.ca/eng/curriculum/secondary/science910_2008.pdf

COURSE DESCRIPTION

This course enables students to enhance their understanding of concepts in biology, chemistry, earth and space science, and physics, and of the interrelationships between science, technology, society, and the environment. Students are also given opportunities to further develop their scientific investigation skills. Students will plan and conduct investigations and develop their understanding of scientific theories related to the connections between cells and systems in animals and plants; chemical reactions, with a particular focus on acid–base reactions; forces that affect climate and climate change; and the interaction of light and matter.

UNITS OF STUDY

Unit 1: Scientific Investigation Skills and Career Exploration

Unit 2: Biology: Tissues, Organs and Systems of Living Things

Unit 3: Chemistry: Chemical Reactions

Unit 4: Earth and Space Science: Climate Change

Unit 5: Physics: Light and Geometric Optics

CURRICULUM EXPECTATIONS

By the end of the course, students will:

- demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating);
- identify and describe a variety of careers related to the fields of science under study, and identify scientists, including Canadians, who have made contributions to those fields.
- evaluate the importance of medical and other technological developments related to systems biology, and analyse their societal and ethical implications;
- investigate cell division, cell specialization, organs, and systems in animals and plants, using research and inquiry skills, including various laboratory techniques;
- demonstrate an understanding of the hierarchical organization of cells, from tissues, to organs, to systems in animals and plants
- analyse a variety of safety and environmental issues associated with chemical reactions, including the ways in which chemical reactions can be applied to address environmental challenges;
- investigate, through inquiry, the characteristics of chemical reactions;
- demonstrate an understanding of the general principles of chemical reactions, and various ways to represent them.
- analyse some of the effects of climate change around the world, and assess the effectiveness of initiatives that attempt to address the issue of climate change;
- investigate various natural and human factors that influence Earth's climate and climate change;
- demonstrate an understanding of natural and human factors, including the greenhouse effect, that influence Earth's climate and contribute to climate change.
- evaluate the effectiveness of technological devices and procedures designed to make use of light, and assess their social benefits;
- investigate, through inquiry, the properties of light, and predict its behaviour, particularly with respect to reflection in plane and curved mirrors and refraction in converging lenses;
- demonstrate an understanding of various characteristics and properties of light, particularly with respect to reflection in mirrors and reflection and refraction in lenses.

EVALUATION OF STUDENT ACHIEVEMENT

Each student will be given a variety of opportunities to demonstrate the extent to which he/she has met the expectations of this course. Students must complete all assessments in order to be eligible to receive the credit. His/her final grade will be a percentage that represents the student's overall achievement of curriculum expectations based on his/her most consistent level of achievement.

70% summative assessments throughout the semester

30% final examination and culminating project at the end of the semester

One of the goals of the course is the development of the work and study skills needed to succeed in the workforce and in life. Work and study habits will be monitored throughout the semester and will be recorded (separately from the grade) on the report card as follows (refer to this website for further information):

<http://www.edu.gov.on.ca/eng/policyfunding/growSuccess.pdf>

Work and study skills

Responsibility

Organization

Independent Work

Initiative

Collaboration

Self-Regulation

Evaluation

E = Excellent

G = Good

S = Satisfactory

N = Needs Improvement

Organization is a very important component of this program. Time management skills, regular attendance, and homework completion will be essential in order to have a high level of understanding.

Course Materials and Resources needed for this class

- 3-ring binder (for notes), lined paper and a few sheets of graph paper
- HB pencils, pens, erasers, ruler
- School Agenda for tracking homework, assignments, tests.
- Scientific calculator (**no graphing or programmable calculators or cellphone calculators**)
- Separate duotang with paper for lab work – (last year's may be acceptable)

The grade 10 science class has the following procedures:

- ✓ **NO open-toed shoes are permitted in the lab at ANY time, including dress-down days**
- ✓ No food or drink (except water bottles), or backpacks/purses are permitted in the lab at any time
- ✓ Only one person speaks at a time
- ✓ Come to class on time, prepared with materials and prepared to learn
- ✓ Listen to what others have to say, and respect their view and opinions
- ✓ Remain seated (unless permission to move has been given)
- ✓ No throwing ANY objects (including paper into the wastebasket or recycling bin)
- ✓ **No cell phones are permitted to be with a student in class at any time. Cell phones brought to class must be switched off and placed on the teacher's desk at the start of class**

Please note: The unauthorized use of electronic devices during class results in the confiscation of the item and sending it directly to the office. Students can retrieve the item later from the school administration. Students caught using any electronic device (other than a calculator) during evaluation receive an automatic mark of "zero".

Notebooks

A separate three-ring binder is required for this course (dividers are nice but optional). The front page of the binder must be clearly labelled with **your name, the teacher's name, course code, and the number of your assigned textbook**. The content of your binder should be organized as follows for each unit of study: course outline sheets followed by class work and notes -- homework -- projects, reports and assignments -- all tests and quizzes with corrections. Your work must include the date, headings, and page/question numbers where applicable. **Work should be done in pencil**. You are expected to bring a scientific calculator, ruler, eraser and textbook each day.

Chapter Tests and Quizzes

You will be given reasonable notice for all tests. Pop quizzes may be given without notice to determine understanding, but are formative only and do not count for grades. Performance tasks or in-class assignments will be completed to demonstrate the level of learning that has occurred. It is important that you complete all assigned homework in order to practice what you have learned.

Projects, Reports, or Take-Home Assignments

These assessments give you a different medium through which to demonstrate your learning. You are expected to complete the work neatly, accurately and promptly. These assignments provide you with a unique opportunity to demonstrate your communication and creative skills as well as the depth of your understanding of concepts. **There will be academic penalties for late work – any assignment or study sheet not turned in on time cannot be given the same grade as an assignment where the deadline has been respected.** If you know that you will be absent on a particular due date, you are still responsible for submitting the assignment on the deadline.

Attendance

Your regular attendance is an integral part of learning; therefore all lates and absences will be recorded on your report card. You are responsible for all of the material studied in this class, even when you are absent. It is advisable to have a friend take a picture of their class notes and send them to you electronically on the day you are absent so you do not fall behind. It is **your responsibility** to inform the teacher several days in advance of your absence from class due to an appointment, holiday or school-related event (e.g. field trip, athletic event, etc.) and to update your notes, complete assigned homework, prepare for tests and submit assignments, etc. in the event of any absence. Students whose families are going on vacation outside of regular vacation periods are expected to notify the office at least one week in advance of the vacation. Students are expected to write a missed test or submit a late assignment **on their first day back at school (at lunch time)** and a parental or medical note or phone call is required. See the teacher immediately if you are having difficulty.

Skills Assignments and Homework

You will be given a fair and reasonable amount of time to complete assignments. Assignments and homework must be completed in pencil on clean lined paper or graph paper as required. Homework must be completed by the next class day and show ALL steps, not just an answer. Homework completion will be regularly assessed. Students are expected to check their homework deadlines on the school website under “Class Webpages” at <http://www.sta-russell.com>. Extra help, when it is offered, will be available at lunch. Students cannot use the excuse “I didn’t understand the homework so it is not done”. Homework is not considered to be complete unless ALL steps, not just a final answer, are shown in the solution. All incorrect solutions should be corrected before a new day's work is begun. Students will be assigned to mandatory lunchtime study hall if homework is incomplete on a regular basis. It is **your responsibility** to seek assistance when you have encountered difficulty with assigned work.

A Note About Extra Help

There may be opportunities for you to receive extra assistance at lunchtime with your course work or further develop concepts and skills. **It is very important that you seek assistance with difficulties as soon as they arise.** Asking questions is part of learning anything! Please note that **students who have been absent from class for any reason should NOT expect the teacher to re-teach lessons during extra help at lunch.** Extra help is intended for students to ask specific questions about what they do not understand AFTER first having caught up on missed notes, reading the appropriate sections and examples in the textbook, and trying the homework on their own.