

Highland Park Junior High
2020- 2021 Grade 8 Science Course Outline
Mrs. S. Bradbury

Background

An important and universal goal of science education is to equip learners with an understanding of the roles that science and technology play in society. The science curriculum aims to develop learners' ability to problem solve and apply the principles of scientific inquiry to real-world situations and familiar problems. Additionally, Science 8 seeks to develop scientific literacy through designing and building for technological innovation, writing for scientific communication and data analysis.

The nature of science asks students to question the phenomena of the world around them, then test those questions in controlled environments. Themes create authentic purpose for learning and facilitate cross curricular, project-based learning opportunities. Each of the themes in Science 8 provides opportunity for students to engage with inquiry based learning that is crucial to science literacy and the development of critical thinking skills. Career exploration is embedded in each theme.

Learners in grade 8 should be able to:

- Design an inquiry: Including asking testable questions, designing a controlled inquiry process, collect, organize, display, analyse and interpret data
- Evaluate evidence: Including analysing and interpreting data, explain data/results, draw conclusions, evaluate conclusions, analyse and evaluate the inquiry process and offer suggestions for improvement
- Communicate evidence: Evaluate the implications of scientific developments, communicate conclusions and scientific processes, work collaboratively to enhance knowledge creation, analyse evidence and conclusions made by others
- Use Technology to solve a problem: Including the selection of technology appropriate for the task as well as the engineering (refining, designing and developing) of technology for a purpose

The following are the main themes and outcomes that are going to be covered during the year:

Building Blocks of Life:

- Students will analyze how the characteristics of cells relate to the needs of organisms.
- Students will evaluate ways to maintain and factors that disrupt cell and system health.

Climate Change:

- Students will create a model that demonstrates the principles of kinetic molecular theory.
- Students will evaluate oceanographic evidence of climate change inclusive of a Mi'kmaw perspective.
- Students will evaluate the impact of human activity on climate change.
- Students will formulate a plan to mitigate the effects of climate change.

Hydraulics/ Pneumatics

- Students will test the effects of changes in temperature and pressure on the properties of fluids.
- Students will investigate mechanical advantage provided by hydraulic and pneumatic systems.
- Students will construct a device that utilizes hydraulics or pneumatics.

Assessment and Evaluation

A wide variety of assessment methods are systematically used to gather information concerning student learning. These include, but are not limited to the following: formal and informal observations, anecdotal records, portfolios, etc. The achievement levels are shown on the attached chart, and these will be reported in PowerSchool throughout the terms. At the end of the term, Powerschool will convert the achievement levels into a report card percentage, which you will see in the individual subjects. The reporting grades and descriptors are also shown in the attached chart.

Students will be demonstrating their learning in many different ways which may include, but are not limited to the following: Assignments, presentations, unit quizzes and tests, homework, projects, class discussions, textbook work and practical lab work. A breakdown of the marks in the unit will be discussed with students in class.

Unit content, descriptions of individual activities, and the student's marks will all be available for you to see on PowerSchool, which can be accessed by the internet. There is a quick link on our school website. If you do not have login information, please come by the school to pick this up.

Other forms of communication could include: phone calls, notes home, report cards, program planning meetings, and parent-teacher meetings.

Expectations in Science

- * Be prepared to learn - with all materials necessary, be on time, complete assignments and homework, ask for help when needed, listen to each other, contribute in class, study for quizzes and tests, be willing to take risks
- * Be respectful - of themselves, their peers, staff in the school, visitors, of equipment, of environment, of rules set up for safety, of timelines

- * Be responsible - of behaviour, attitude, education, materials, actions, equipment

Materials Needed

These will be provided for each student at the start of the year. If students want to bring in their own, this is completely acceptable.

Contact Information

Please feel free to contact me via telephone or email:

Phone : 902 493 5124

Email : sbradbury@hrce.ca

Homework will be recorded on the Highland Park website, and in student's agenda, binder or phone. **Please check these regularly** to ensure completion of work and to help your child make good progress in science.

Students will be able to arrange extra help times for individual extra help, support or clarification of ideas studied in class by arranging an appointment with me.