



ECOLE SECONDAIRE
HANDSWORTH
SECONDARY SCHOOL

Course: Science 8

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BIG IDEAS

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| Life processes are performed at the cellular level. | The behavior of matter can be explained by the kinetic molecular theory and atomic theory. | Energy can be transferred as both a particle and a wave. | The theory of plate tectonics is the unifying theory that explains Earth's geological processes. |
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Course Description:

The primary goal of **Science 8** is to give students the knowledge, skills, and competencies to be active, informed citizens who are able to think critically, understand and explain the perspectives of others, make judgments, and communicate ideas effectively.

Science and scientific literacy play a key role in educating citizens of today for the world of tomorrow. Critical to succeeding in this endeavour are the core competencies that provide students with the ability to think critically, solve problems, and make ethical decisions; to communicate their questions, express opinions, and challenge ideas in a scientifically literate way; and to exercise an awareness of their role as ecologically literate citizens, engaged and competent in meeting the responsibilities of caring for living things and the planet.

Curricular Competencies – Examples of what the student can do...

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| <i>Questioning and predicting</i> | <ul style="list-style-type: none">• Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest• Make observations aimed at identifying their own questions about the natural world• Identify a question to answer or a problem to solve through scientific inquiry |
| <i>Planning and conducting</i> | <ul style="list-style-type: none">• Collaboratively plan a range of investigation types• Observe, measure, and record data (qualitative and quantitative), using equipment, including digital technologies, with accuracy and precision• Ensure that safety and ethical guidelines are followed in their investigations |
| <i>Processing and analyzing data and information</i> | <ul style="list-style-type: none">• Experience and interpret the local environment• Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information• Seek patterns and connections in data from their own investigations and secondary sources |
| <i>Evaluating</i> | <ul style="list-style-type: none">• Reflect on their investigation methods, including the adequacy of controls on variables and the quality of the data collected• Identify possible sources of error and suggest improvements to their investigation methods• Demonstrate an awareness of assumptions and identify information given and bias in their own work and secondary sources• Demonstrate an understanding and appreciation of evidence (qualitative and quantitative)• Consider social, ethical, and environmental implications of the findings from their own and others' investigations |
| <i>Applying and innovating</i> | <ul style="list-style-type: none">• Co-operatively design projects• Generate and introduce new or refined ideas when problem solving |
| <i>Communicating</i> | <ul style="list-style-type: none">• Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate |



Content – What the student will know...

- **characteristics of life**
- **cell theory** and **types of cells**
- **photosynthesis** and **cellular respiration**
- basic functions of the **immune system**
vaccination and **antibiotics**
impacts of **epidemics** and **pandemics** on human populations
- **kinetic molecular theory (KMT)**
- **atomic theory** and **models** (protons, neutrons, quarks, electrons, leptons)
- **types** and **effects** of electromagnetic radiation
- properties and behaviour **of light:**
- **plate tectonic movement**
- **layers in Earth**

Summative Assessments – What the student will understand :

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| <ul style="list-style-type: none">• Writing up laboratory reports following established formats• Create research presentations• Communicate information through tests and other written work | <ul style="list-style-type: none">• Following appropriate techniques and procedures during laboratory work• To think critically about various sources of information |
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HANDSWORTH SCIENCE DEPARTMENT

Achievement Goals - Description of the letter grades

To achieve an "A", student will/can...

Produce high-quality, frequently innovative work. Communicate comprehensive, nuanced understanding of concepts and contexts. Consistently demonstrate sophisticated critical thinking. Frequently transfer knowledge and skills with independence and expertise in a variety of complex classroom and real-world situations. Evaluate a topic and develop a well-structured argument that demonstrates different perspectives on an issue.

To achieve a "B", student will/can...

Consistently produce high-quality work. Communicate comprehensive understanding of concepts and contexts. Consistently demonstrate critical thinking. With some support transfer knowledge with skill in a variety of classroom and real-world situations. Assess a topic and develop a well-structured argument on an issue.

To achieve a "C", student will/can...

Produce work of an acceptable quality. Communicate basic understanding of many concepts and contexts, with occasionally significant misunderstandings or gaps. Begin to demonstrate some basic critical thinking. Be fixed in the use and application of knowledge and skills, requiring support even in familiar classroom situations. In certain circumstances, lack the ability to identify the issues involved with a topic and have challenges with developing a response.



JUNIOR SCIENCES Assessment

During this school year, the teacher will provide these types of assessments:
assessment *as* learning and **assessment *for* learning (formative assessments)**
and **assessment *of* learning (summative assessment)**.

| <u>Formative assessment</u> | <u>Summative assessment</u> |
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| <ul style="list-style-type: none">• The on-going practice of no-risk activities.• Students begin to ask: “what concepts do I still have to master and how can I improve future work?”• This is assessment <i>AS</i> learning and assessment <i>FOR</i> learning. | <ul style="list-style-type: none">• The evidence used to determine student achievement in relation to the curriculum outcomes. Summative assessments are used to determine students’ grades.• This is assessment <i>OF</i> learning. |
| Purpose of Formative Assessment: <ul style="list-style-type: none">• Focus on student learning and self assessment/ reflection.• Teacher checks for learning to adjust instruction.• Provides continual feedback to student.• Focus is on student improvement.• Is not part of achievement grade. | Purpose of Summative Assessment: <ul style="list-style-type: none">• Compares a student’s learning to prescribed learning outcomes from course curriculum.• Reported as the achievement grade. |
| Types of Formative Assessment: <ul style="list-style-type: none">• Homework• Draft Assignments and Labs• Practice Quizzes• Self Reflections | Types of Summative Assessment: <ul style="list-style-type: none">• End of chapter/content Quizzes• Unit Tests• Lab work• Assignments• Final Exam |

HOW MARKS WILL BE RECORDED for REPORT CARD MARKS:

Formative Assessments will be weighted at 0% in the marks spreadsheet.

Summative Assessments will account for all of the course marks for the year.