Grade 8 Science

Curricular Competencies

		Questioning & Predicting					Planning & Conduting				Processing & Analyzing Data & Info				Evaluating						Applying & Innovating				Communicating	
Big Ideas	*Cells are a basic unit of life *The kinetic molecular theory and the theory of the atom explain the behaviour of matter. *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.	Demonstrate a sustained 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	Formulate alternative "If…then…" hypotheses based on their questions	Make predictions about the findings of their inquiry	Collaboratively plan a range of investigation types, including field work and experiments, to answer their questions or solve problems they have identified	Measure and control variables through fair tests	Observe, measure, and record data (qualitative and quantitative), using equipment, including digital technologies, with accuracy appropriate to the task	Ensure that safety and ethical guidelines are followed in their investigations	Experience and interpret the local environment	Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, key, scale models, and digital technologies as appropriate	Seek patterns and connections in data from their own investigations and secondary sources	Use scientific understandings to identify relationships and draw conclusions	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 identity information given and bias in their own work and secondary sources	Demonstrate an understanding and appreciation of evidence (qualitative and quantitative)	Exercise a healthy, informed skepticism and use scientific knowledge and findings for their own investigations to evaluate claims in secondary sources	Consider social, ethical, and environmental implications of the findings from their own and others' investigations	Contribute to care for self, others, community, and world through personal or collaborative approaches	Co-operatively design projects	Transfer and apply learning to new situations	Generate and introduce new or refined ideas when problem solving	Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate	Express and reflect on personal, shared, or others' experiences of place
Content	characteristics of life																									
	cell theory and types of cells																									
	photosynthesis and cellular respiration																									
	the relationship of micro-organisms with living things (basic functions of the immune system; vaccination and antibiotics; impacts of epidemics and pandemics on human populations)																									
	the position, motion, andcomponents of our solar systemin our galaxy																									
	kinetic molecular theory																									
	atomic theory and models (protons, neutrons, and quarks; electrons and leptons)																									
	types and effects of electromagnetic radiation																									
	light: (properties, behavious, ways of sensing)																									
	plate tectonic movement																									
	major geological events of local significance																									
	layers in Earth																									