Processing Chemical Reactions

Newfoundland & Labrador	
Grade 5	
Unit i: Integrated Skills	
General Curriculum Outcomes:	GCO 2 (Skills): Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions.
Specific Curriculum Outcomes:	1.0 propose questions to investigate and practical problems to solve 6.0 devise procedures to carry out a fair test and to solve a practical problem 7.0 identify appropriate tools, instruments, and materials to complete investigations 8.0 carry out procedures to explore a given problem and to ensure a fair test, controlling major variables 9.0 select and use tools 10.0 follow procedures 11.0 select and use tools for measuring 12.0 make observations and collect information that is relevant to the question or problem 14.0 record observations 23.0 identify potential applications of findings 25.0 communicate questions, ideas, and intentions, and listen to others while conducting investigations 26.0 collaborate with others to devise and carry out procedures 27.0 ask others for advice or opinions

Unit 3: Properties and Changes of Materials	
General Curriculum Outcomes:	GCO 1 (STSE): Students will develop an understanding of the nature of science and technology, of the relationships between science and technology, and of the social and environmental contexts of science and technology. GCO 3 (Knowledge): Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge.
Specific Curriculum Outcomes:	56.0 group materials as solids, liquids, or gases, based on their properties 57.0 identify properties that allow materials to be distinguished from one another 60.0 describe examples of interactions between materials that result in the production of a gas 65.0 identify the source of the materials found in an object and describe the changes to the natural materials required to make the object
Grade 7	
Unit 3: Mixtures and Solutions	
Skills Curriculum Outcomes:	208-2 identify questions to investigate arising from practical problems and issues 209-1 carry out procedures controlling the major variables to study the effect of temperature on solubility 209-3 use instruments effectively and accurately for collecting data 209-6 use tools and apparatus safely
Specific Curriculum Outcomes:	307-1 distinguish between pure substances and mixtures using the particle theory of matter 307-2 identify and separate the components of mixtures 307-4 describe the concentrations of solutions qualitatively and quantitatively

Grade 9	
Unit 2: Atoms, Elements, and Compounds	
Skills Curriculum Outcomes:	208-2 identify questions to investigate arising from practical problems and issues 209-1 carry out procedures controlling the major variables to study the effect of temperature on solubility 209-3 use instruments effectively and accurately for collecting data 209-6 use tools and apparatus safely
Specific Curriculum Outcomes:	307-12 investigate materials and describe them in terms of their physical properties 307-13 describe changes in the properties of materials that result from some common chemical reactions

Grade 10	
Unit 2: Chemical Reactions	
General Curriculum Outcomes:	GCO 1 (STSE): Students will develop an understanding of the nature of science and technology, of the relationships between science and technology, and of the social and environmental contexts of science and technology. GCO 2 (Skills): Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions. GCO 3 (Knowledge): Students will construct knowledge and understandings of concepts in life science, physical science, and Earth and space science, and apply these understandings to interpret, integrate, and extend their knowledge. GCO 4 (Attitudes): Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.
Specific Curriculum Outcomes:	2.0 design an experiment identifying and controlling major variables 6.0 evaluate and select appropriate instruments for collecting evidence and appropriate processes for problem solving, inquiring, and decision making 8.0 carry out procedures controlling the major variables and adapting or extending procedures where required 15.0 demonstrate a knowledge of WHMIS standards by selecting and applying proper techniques for handling and disposing of lab materials 29.0 work cooperatively with team members to develop and carry out a plan, and troubleshoot problems as they arise 44.0 represent chemical reactions and the conservation of mass using molecular models and balanced symbolic equations 47.0 describe how neutralization involves tempering the effects of an acid with a base or vice versa