

Science 9

Unit	Outcomes	Pages for Reference	
<i>Unit 1: Atoms and Elements</i>	1.1 Physical and Chemical Changes	Perform experiments, collect evidence, report findings, and demonstrate a knowledge of WHMIS standards in the laboratory (209-7, 111-6, 210-11)	34-35
		Investigate materials and describe them in terms of their physical properties (307-12)	34-35
		Describe changes in the properties of materials that result from some common chemical reactions (307-13)	36-37 TR 63-74
	1.2 Atomic Theory	Use models in describing the structure and components of atoms and molecules, and explain the appropriate operational definition (307-14, 208-7)	38-39
	1.3 Periodic Table	Identify examples of common elements, and compare their characteristics and atomic structure (307-15)	42-43 TR 86-100
		Use the periodic table as a classification system and compile data about its structure (210-1, 210-2)	42-43 TR 55-58, 77-84
		Identify the elements and number of atoms, given a chemical formula (307-16)	44-45
		Provide examples of scientific knowledge that have resulted in the development of technologies (111-1)	40-4, 44-45
		Provide examples of technologies that have enhanced, promoted, or made possible scientific research (111-4)	40-41
		Explain and provide examples of how society's needs for chemistry incorporate science, technology, and environment (112-3, 112-8)	40-41

<i>Unit 2: Characteristics of Electricity</i>	2.1 Electric Current	Describe the flow of charge in an electrical circuit and explain the factors affecting the circuit (109-14, 308-16)	50-51
		Investigate, in the laboratory, and compare qualitatively, static electricity and electric current (210-7, 308-15)	48-49 TR 103-110
	2.2 Series and Parallel Circuits	Describe series and parallel circuits involving varying resistance, voltage, and current (308-17)	54-55 TR 128-130
		Rephrase questions in a testable form and clearly define practical problems (208-1)	52-53
		Use instruments effectively and accurately for collecting data (209-3)	52-53 TR 115-118
		Identify and suggest explanations for discrepancies in data and identify potential sources of error and determine the amount of error in measurement (210-7, 201-10)	52-53
	2.3 Electricity, Energy, and the Environment	Relate electrical energy to domestic power consumption costs (308-18)	56-57
		Determine quantitatively the efficiency of an electrical appliance that converts electrical energy to heat energy (308-19)	56-57 TR 123-127
		Describe the transfer and conversion of energy from a generating station to home (308-20)	58-59
		Make informed decisions and propose a course of action on science, technology, and social issues, including human and environmental needs for electricity and energy (113-9, 113-13)	58-59 TR 111-113
<i>Unit 3: Space Exploration</i>	3.1 The Beginnings	Describe theories on the formation of the solar system (312-1)	62-63
		Explain the need for new evidence in order to continually test existing theories about the composition and origin of our solar system and galaxies (110-6, 210-3)	64-65
		Describe theories on the origin and evolution of the universe (312-3)	68-69

	3.2 The Universe	Describe and classify the major components of the universe (312-2)	68-69
		Describe and explain the apparent motion of celestial bodies (312-4)	62-63
		Provide and describe examples of how Canadian research projects and careers are supported through science and technology (112-6, 112-11)	70-71
	3.3 The Solar System	Describe the composition and characteristics of the components of the solar system (312-5)	64-65
		Explain the need for new evidence in order to continually test existing theories and identify new questions that arise (210-16)	64-65
		Describe the effects of solar phenomena on Earth (312-6)	66-67
		Propose alternative solutions to space life, develop a plan and data, and defend, with a report, your group's position (208-4, 209-4, 211-1, 211-3, 211-5)	66-67 TR 11-13
<i>Unit 4: Reproduction</i>	4.1 Cellular Processes	Illustrate and describe the basic processes of mitosis and meiosis (304-11)	26-27 TR 150-158
		Identify major shifts in scientific world views (110-3)	24-25
		Compile and report data and predict values of variables by doing activities on cell populations (210-6, 210-4)	26-27 TR 144-149
	4.2 Reproduction	Identify questions and investigate, in the laboratory, the reproduction of plants and communicate findings (208-2, 211-2)	28-29
		Distinguish between sexual and asexual reproduction in representative organisms (305-2)	28-29
		Compare sexual and asexual reproduction in terms of their advantages and disadvantages (305-3)	28-29
	4.3 Genetics	Provide examples that arise at home, in an industrial setting, or in the environment that cannot be	30-31

		solved using scientific and technological knowledge (113-10)	
		Discuss factors that may lead to changes in a cell's genetic information (305-5)	30-31
		Select and integrate genetics information from various sources and apply criteria for evaluating evidence and sources of information (209-5, 210-8)	30-31
		Provide examples of science and technology, including Canadian, that have contributed to and developed genetic knowledge (111-1, 112-12)	24-25, 30-31