Pearson

Curriculum Correlation

***Investigating Science and Technology 7* to Ontario Curriculum: Science and Technology, Grade 7 (2022)**

Strand A: STEM Skills and Connections

Throughout Grade 7, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:			
Expectation	**Degree of Fit**	**Chapter/Section References**	**Sections/Page References**
A1. STEM Investigation and Communication Skills: use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures			
A1.1 use a scientific research process and associated skills to conduct investigations	High	Sections 3.2, 3.3 Sections 6.2, 6.3 Sections 7.1, 9.3 Section 12.3	**Unit A** 3.2 A41 Decision-Making Analysis, p. 71 3.3 A47 Decision-Making Analysis, p. 79 Unit A Task, p. 85 **Unit B** 6.2 B44 Quick Lab, p. 166 6.3 B50 Decision-Making Analysis, p. 173 **Unit C** 7.1 C6 Inquiry Activity, p. 197 9.3 C44 Decision-Making Analysis, p. 260 9.3 C45 Decision-Making Analysis, p. 261 Unit C Task, p. 267 **Unit D** 12.3 D51 Decision-Making Analysis, p. 365
A1.2 use a scientific experimentation process and associated skills to conduct investigations	High	Sections 1.3, 2.1, 2.3 Sections 4.3, 5.1, 5.2, 6.1 Sections 8.1, 8.2, 8.3, 9.1, 9.2	**Unit A** 1.3 A16 Inquiry Activity, p. 29 2.1 A22 Quick Lab, p. 41 2.3 A30 Design a Lab, p. 52 2.3 A31 Inquiry Activity, p. 53 Unit A Task, p. 85 **Unit B** 4.3 B19 Inquiry Activity, p. 121

		Sections 10.1, 10.2, 10.3, 10.4, 11.1, 11.2, 11.3, 12.2	5.1 B26 Quick Lab, p. 137 5.1 B27 Inquiry Activity, p. 138 5.2 B32 Quick Lab, p. 144 6.1 B39 Design a Lab, p. 159 **Unit C** 8.1 C18 Quick Lab, p. 218 8.2 C22 Design A Lab, p. 224 8.2 C23 Quick Lab, p. 224 8.2 C24 Inquiry Activity, p. 225 8.3 C29 Inquiry Activity, p. 233 9.1 C35 Quick Lab, p. 245 9.2 C39 Quick Lab, p. 251 9.2 C40 Inquiry Activity, p. 252 Unit C Task, p. 267 **Unit D** 10.1 D3 Quick Lab, p. 281 10.1 D6 Inquiry Activity, p. 285 10.2 D10 Inquiry Activity, p. 292 10.3 D13 Inquiry Activity, p. 298 10.4 D18 Quick Lab, p. 306 10.4 D19 Inquiry Activity, p. 307 11.1 D26 Inquiry Activity, p. 320 11.2 D30 Inquiry Activity, p. 327 11.3 D36 Inquiry Activity, p. 336 12.2 D46 Inquiry Activity, p. 356
A1.3 use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems	High	Sections 1.3, 3.2 Sections 4.1, 4.2, 4.3, 5.1, 5.2 Sections 7.2, 8.0, 8.3 Section 12.0	**Unit A** 1.3 A16 Inquiry Activity, p. 29 3.2 A42 Problem-Solving Analysis, p. 72 **Unit B** 4.1 B7 Quick Lab, p. 105 4.2 B13, Quick Lab, p. 114 4.3 B19 Inquiry Activity, p. 121 5.1 B27 Inquiry Activity, p. 138

			5.2 B33 Problem Solving Activity, p. 145 **Unit C** 7.2 C10 Inquiry Activity, p. 204 8.0 C14 Quick Lab, p. 213 8.3 C28 Problem-Solving Activity, p. 232 **Unit D** 12.0 D39 Quick Lab, p. 345 Unit D Task, p. 371
A1.4 follow established health and safety procedures during science and technology investigations, including wearing appropriate protective equipment and clothing and safely using tools, instruments, and materials	High	Throughout	**Unit A** 1.1 A6 Quick Lab, p. 15 1.3 A16 Inquiry Activity, p. 29 2.1 A22 Quick Lab, p. 41 2.2 A26 Problem-Solving, p. 46 2.3 A30 Design a Lab, p. 52 3.2 A42 Problem-Solving, p. 72 **Unit B** 5.1 B27 Inquiry Activity, p. 138 5.2 B33 Problem-Solving , p. 145 **Unit C** All Quick Labs and Inquiry Activities Examples: 7.2 C11 Inquiry Activity, p. 205 8.0 C14 Quick Lab, p. 213 8.2 C23 Quick Lab. P. 224 9.2 C40 Inquiry Activity **Unit D** All Quick Labs and Inquiry Activities Examples: 10.2 D10, Inquiry Activity, p. 292 10.3 D14 Quick Lab —Teacher Demo, p. 299 10.4 D19 Inquiry Activity, p. 307 Unit D Task, p. 371

A1.5 communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes	High	Throughout	**Unit A** Throughout the unit Examples: 1.0 A3 Quick Lab, p. 11 1.1 A6 Quick Lab, p. 15 1.3 A16 Inquiry Activity, p. 29 2.0 A19 Quick Lab, p. 37 2.2 A26 Problem-Solving, p. 46 2.3 A30 Design a Lab, p. 52 2.3 A31 Inquiry Activity, p. 53 3.2 A41 Decision-Making, p. 71 3.2 A42 Problem-Solving, p. 72 3.3 A47 Decision-Making, p. 79 Unit A Task, p. 85 Chapter 3.0 Review, p. 82: 5, 8, 11, 13 **Unit B** Throughout the unit Examples: 4.2 B12 Quick Lab, p. 113 5.1 B27 Inquiry Activity, p. 138 Chapter 5.0 Review, p. 148: 4, 5, 7 5.2 B33 Problem-Solving Activity, p. 145 6.1 B39 Design a Lab, p. 159 6.2 B45 Decision-Making Analysis, p. 167 **Unit C** Throughout the unit Examples: C6 Inquiry Activity, p. 197 C28 Problem-Solving Activity, p. 232 Unit C Task, p. 267 **Unit D** Throughout the unit Examples:

			D1 Quick Lab, p. 276; 10.1 D6 Inquiry Activity, p. 285; 10.2 D10 Inquiry Activity, p. 292; 11.2 D30 Inquiry activity, p. 327; 11.3 D35 Quick Lab, p. 336; 12.2 D47 Decision-Making Analysis, p. 357; 12.3 D51 Decision-Making Analysis, p. 365; 12.3 Check and Reflect, p. 356: 7 Chapter 12.0 Review, p. 369: 13 Unit D Review, p. 374: 39, 43, 42, 44
A2. Coding and Emerging Technologies: use coding in investigations and to model concepts, and assess the impact of coding and of emerging technologies on everyday life and in STEM-related fields			
A2.1 write and execute code in investigations and when modelling concepts, with a focus on planning and designing programs	Absent		
A2.2 identify and describe impacts of coding and of emerging technologies, such as artificial intelligence systems, on everyday life, including skilled trades	Absent		
A3. Applications, Connections, and Contributions: demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences			
A3.1 describe practical applications of science and technology concepts in various occupations, including skilled trades, and how these applications address real-world problems	Moderate/High *Skilled trades are not mentioned.	Science and Technology in Your World feature	Unit A S&T in Your World, p. 55 Unit B S&T in Your World, p. 147 Unit B S&T in Your World, p. 235 Unit D S&T in Your World, p. 309
A3.2 investigate how science and technology can be used with other subject areas to address real-world problems	High	Section 3.3 Sections 6.2, 6.3 Sections 9.2, 9.3 Sections 11.1, 11.3, 12.2, 12.3	**Unit A** 3.3 A46 Decision-Making Analysis, p. 76 3.3 A48 Decision Making Analysis, p. 77 **Unit B** S&T in Your World, p. 123 6.2 B45 Decision-Making Analysis, p. 167

			6.3 B50 Decision-Making Analysis, p. 173 Unit B Task, p. 179 **Unit C** 9.2 C39 Quick Lab, p. 251 9.2 C40 Inquiry Activity, p. 242 9.3 C44 Decision-Making Analysis, p. 260 Unit C Task, p.267 **Unit D** 11.1 D23 Inquiry Activity, p. 315 11.3 D33 Inquiry Activity, p. 331 12.2 D47 Decision-Making Analysis, p. 357 12.3 D51 Decision-Making Analysis, p. 365
A3.3 analyse contributions to science and technology from various communities	Absent/Low *Unit A Getting Started refers to Aboriginal conservation practices.		

Strand B: Life Systems—Interactions in the Environment

By the end of Grade 7, students will:			
Expectation	**Degree of Fit**	**Chapter/Section References**	**Sections/Page References**
B1. Relating Science and Technology to Our Changing World: assess the impact of human activities and technologies on the environment, and analyse ways to mitigate negative impacts and contribute to environmental sustainability			
B1.1 assess the impact of various technologies on the environment *(1.1)*	High	Sections 3.2, 3.3	3.2, 3.3 Check and Reflect, p. 73: 2, 3; p. 80: 2, 3 Chapter 3.0 Review, p. 82: 4, 5, 7, 8, 13 Chapter 3.0 Quiz: 8, 10, 12, 13, 14 Unit A Review, p. 86: 21, 28, 35 Unit A Test: 5, 27, 30

B1.2 assess the effectiveness of various ways of mitigating the negative and enhancing the positive impact of human activities on the environment	High	Section 2.2 Chapter 3 (all sections)	2.2 A26 Problem-Solving Activity, p. 46 3.2 A41 Decision-Making Activity, p. 71 3.2 A42 Problem-Solving Activity, p. 72 3.3 A46 Decision-Making Analysis, p. 78, 3.3 A47 Decision-Making Analysis p. 79 3.0 Chapter Review A49 Thinking about Science and the Environment, p. 83 Unit A Task, p. 85 Unit A Review, p. 86: 29, 30, 31, 33
B1.3 analyse how diverse First Nations, Métis, and Inuit practices and perspectives contribute to environmental sustainability, including by using approaches such as Two-Eyed Seeing *(3.9)*	Low	Section 2.3 (v. brief mention)	Getting Started p. 10 refers to Aboriginal conservation practices, but there are no questions relating to it in the text. Chapter 1.0 Quiz: 22 Chapter 2.0 Quiz: 20 Chapter 3.0 Quiz: 15 Unit A Test: 29
B2. Exploring and Understanding Concepts: demonstrate an understanding of interactions between and among biotic and abiotic components in the environment			
B2.1 explain that an ecosystem is a network of interactions among living organisms and their environment *(3.1)*	High	Unit A: Exploring Sections 1.1, 1.2	1.1, 1.2 Check and Reflect, p. 16: 1, 2, 4, 5; p. 23: 2, 4, 5 Chapter 1.0 Review, p. 32: 1, 2, 7, 8 Chapter 1.0 Quiz: 2, 4, 7, 13, 14, 16, 23, 24 Unit A Review, p. 86: 4, 6, 10, 33 Unit A Test: 1, 2, 14, 21, 22
B2.2 identify biotic and abiotic components in an ecosystem, and describe the interactions between them *(3.2)*	High	Sections 1.1, 1.2	1.1, 1.2 Check and Reflect, p. 16: 3, 6, 7, 8; p. 23: 1, 3, 5, 6 Chapter 1.0 Review, p. 32: 1, 3, 8 Chapter 1.0 Quiz: 1, 3, 5, 6, 11, 17, 21 Unit A Review, p. 86: 5, 7, 9, 13 Unit A Test: 11, 16, 23

B2.3 describe roles and relationships between producers, consumers, and decomposers within an ecosystem *(3.3)*	High	Sections 1.2, 1.3	1.2, 1.3 Check and Reflect, p. 23: 1, 3, 5, 6; p. 30: 1, 3, 5, 6 Chapter 1.0 Review, p. 32: 4 Chapter 1.0 Quiz: 8, 9, 10, 12, 15, 18, 20 Unit A Review, p. 86: 2, 11, 12, 13, 17 Unit A Test: 3, 4, 6, 11, 18
B2.4 describe the transfer of energy in a food chain, and explain the effects of altering any part of the chain *(3.4)*	High	Sections 1.3, 2.1	1.3 Check and Reflect, p. 30: 2, 4, 7: 2.1 Check and Reflect, p. 42: 1, 2, 3, 4, 5, 6 Chapter 1.0 Review, p. 32: 5, 6, 7 Chapter 2.0 Review, p. 56: 1, 8 Chapter 1.0 Quiz: 19 Chapter 2.0 Quiz: 2, 3, 4, 5, 6, 7, 8, 10, 16, 17, 21 Unit A Review, p. 86: 15 Unit A Test: 13
B2.5 describe how matter is cycled within the environment, and explain how the cycling of matter promotes sustainability *(3.5)*	High	Sections 2.2, 2.3	2.2 Check and Reflect, p. 47: 1–8; 2.3 Check and Reflect, p. 54: 4,7, 8 Chapter 2.0 Review, p. 56: 2, 6 Chapter 2.0 Quiz: 11, 15, 18, 19, 23, 24 Unit A Review, p. 86: 14, 16, 18 Unit A Test: 7, 12
B2.6 explain the differences between primary succession and secondary succession in ecosystems *(3.6)*	High	Section 3.1	3.1 Check and Reflect, p. 67: 1, 2, 3, 4, 5, 6, 7 Chapter 3.0 Review, p. 82: 1, 2, 9, 10 Chapter 3.0 Quiz: 1, 2, 5, 6, 7, 19, 20, 21 Unit A Review, p. 86: 20, 24, 25 Unit A Test: 9, 20
B2.7 explain how biotic and abiotic factors limit the number of organisms an ecosystem can sustain *(3.7)*	High	Section 2.3	2.3 Check and Reflect, p. 54: 1, 2, 3, 5 Chapter 2.0 Review, p. 56: 5, 7, 9 Chapter 2.0 Quiz: 12 Unit A Review, p. 86: 19 Unit A Test: 8
B2.8 describe how different approaches to agriculture and to harvesting food from the natural environment can impact an	Absent		

ecosystem, and identify strategies that can be used to maintain and/or restore balance to ecosystems	*Does not mention agriculture		

Strand C: Matter and Energy—Pure Substances and Mixtures

By the end of Grade 7, students will:			
Expectation	**Degree of Fit**		**Sections/Page References**
C1. Relating Science and Technology to Our Changing World: evaluate the environmental and social impacts of the use and disposal of various pure substances and mixtures			
C1.1 analyse the social and environment impacts of the use and disposal of pure substances found in technological devices, considering local and global perspectives *(1.1)*	High	Section 9.3	9.3 Check and Reflect, p. 262: 1–9 Chapter 9.0 Review, p. 265: 8 Unit C Review, pp. 269–271: 27–28, 33–35, 36, 56 Chapter 9.0 Quiz: 9, 24
C1.2 assess environmental and social impacts of different industrial methods used to separate mixtures *(1.2)*	High	Section 9.2	9.2 Check and Reflect, p. 253: 1–4 Chapter 9.0 Review, p. 264: 6, 7 Unit C Review, pp. 269–271: 22–26, 54 Chapter 9.0 Quiz: 1–3, 6–9, 16–21, 22 Unit C Test: 8, 10, 28, 30
C2. Exploring and Understanding Concepts: demonstrate an understanding of the nature of matter, including the properties of pure substances and mixtures, and describe these properties using particle theory			
C2.1 demonstrate an understanding of the particle theory of matter *(3.2)*	Moderate/High *Particle theory does not mention "atoms" (see C2.8)	Section 7.2	7.2 Check and Reflect, p. 206: 1–3, 8 Chapter 7.0 Review, pp. 208–209: 3–10, 13 Unit C Review, pp. 268–271: 8, 9, 29, 37, 41–43, 48, 53 Chapter 7.0 Quiz: 1, 2, 7, 9, 11–15, 24 Unit C Test: 2, 9, 22, 25
C2.2 use particle theory to distinguish between pure substances and mixtures *(3.3)*	Moderate/High	Section 7.2	7.2 Check and Reflect, p. 206: 4–7 Chapter 7.0 Review, p. 208: 2, 12 Unit C Review, pp. 268–271: 7, 10, 38, 39, 44, 49, 52, 57

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	*Particle theory does not mention "atoms" (see C2.8)		Chapter 7.0 Quiz: 3, 5, 23 Unit C Test: 21
C2.3 distinguish between homogenous and heterogenous mixtures *(3.4)*	High	Section 7.1	7.1 Check and Reflect, p. 198: 4, 7 Chapter 7.0 Review, p. 209: 11 Unit C Review, p. 268: 2, 5–7 Chapter 7.0 Quiz: 8, 10, 16–21 NOTE: IS&T uses the term "mechanical mixtures" not "heterogenous mixtures".
C2.4 use the particle theory to describe how different factors affect the solubility of a substance and the rate at which it dissolves	High	Section 8.2	8.2 Check and Reflect p. 226: 3–7 8.0 Review p. 236: 4, 7–9 Unit C Review p. 268: 13, 14, 16, 17
C2.5 describe the concentration of a saturated solution in both qualitative and quantitative terms, and differentiate between saturated and unsaturated solutions *(3.8 and 3.9)*	High	Section 8.1	8.1 Check and Reflect, p. 219: 2–4, 7, 8 Chapter 8.0 Review, p. 236: 5, 6 Unit C Review, pp. 268–271: 12, 14, 30, 55 Chapter 8.0 Quiz: 1, 7, 10, 18 Chapter 8.0 Quiz: 3 Unit C Test: 5
C2.6 explain why water is referred to as the universal solvent *(3.10)*	High	Section 8.1	8.1 Check and Reflect, p. 219: 5 Chapter 8.0 Review, p. 236: 3 Chapter 8.0 Quiz: 11
C2.7 explain various processes used to separate mixtures, including solutions, into their components, and identify some applications of these processes *(3.5)*	High	Sections 8.3, 9.1	8.3 Check and Reflect, p. 234: 1–8; p. 246: 1–8 Chapter 8.0 Review, p. 236: 10, 12; 9.1 Check and Reflect, p. 246: 4–7 Chapter 9.0 Review, p. 264: 1–5 Unit C Review, pp. 268–271: 1, 18–21, 31,32, 51 Chapter 8.0 Quiz: 2, 15, 16–22, 24 Unit C Test: 6, 14, 27
C2.8 describe pure substances as elements and compounds consisting of atoms and combinations of atoms	Low		7.1 describes pure substances as made up of only one type of matter. Does not mention atoms or compounds.

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Strand D: Structures and Mechanisms—Form, Function, and Design of Structures

By the end of Grade 7, students will:			
Expectation	**Degree of Fit**	**Chapter/Section References**	**Sections/Page References**
D1. Relating Science and Technology to Our Changing World: analyse personal, social, economic, and environmental factors that should be considered when designing and building structures			
D1.1 evaluate environmental, social, and economic factors that should be considered when designing and building structures to meet specific needs for individuals and communities *(1.1)*	High	Section 4.3 Chapter 6 (all sections)	4.2 B14 Thinking about Science and Technology, p. 115 4.2 Check and Reflect, p. 115: 5 4.3 Check and Reflect, p. 122: 2, 6 Chapter 4.0 Review, p. 124: 3, 4, 10, 12, 13 Chapter 4.0 Quiz: 12, 15, 23 6.1 Check and Reflect, p. 161: 1, 4, 6 6.2 Check and Reflect, p. 168: 1, 2, 4, 5 6.3 B50 Decision-Making Analysis, p. 173 6.3 Check and Reflect, p. 174: 1, 2, 3, 4, 6 Chapter 6.0 Review, p. 176: 1, 3, 8, 9, 11, 12 Chapter 6.0 Quiz: 3, 4, 7, 9, 13, 22, 23 Unit B Review, p. 180: 21, 22, 26, 33, 36, 46 Unit B Test: 24, 30
D1.2 evaluate the impact of the ergonomic design of various tools, objects, and work spaces on a user's health, safety, and ability to work efficiently, and use this information to describe changes that could be made in their own spaces and activities *(1.2)*	High	Sections 5.2, 6.1	5.2 Check and Reflect, p. 146: 1, 4, 5 Chapter 5.0 Review, p. 148: 11 Chapter 5.0 Quiz: 15, 23 6.1 Check and Reflect, p. 161: 1 Chapter 6.0 Review, p. 176: 5, 7 Chapter 6.0 Quiz: 5, 7 Unit B Review, p. 180: 15, 36. Unit B Test: 9
D2. Exploring and Understanding Concepts: demonstrate an understanding of the relationship between structural forms and the forces acting on them			

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D2.1 classify structures as solid structures, frame structures, or shell structures *(3.1)*	High	Section 4.1	4.1 Check and Reflect, p. 107: 1, 2, 3, 6 Chapter 4.0 Review, p. 124: 1, 2, 9, 11 Chapter 4.0 Quiz: 5, 6, 10, 14, 16, 17, 18, 21 Unit B Review, p. 180: 2, 28, 34 Unit B Test: 1, 11, 20
D2.2 describe ways in which the centre of gravity of a structure affects the structure's stability *(3.2)*	High	Section 5.1	5.1 Check and Reflect, p. 139: 6, 8 Chapter 5.0 Review, p. 148: 1, 3, 5, 12 Chapter 5.0 Quiz: 5, 6, 8 Unit B Review, p. 180: 10, 18, 30, 35 Unit B Test: 8, 22
D2.3 identify the magnitude, direction, point of application, and plane of application of the forces applied to a structure *(3.3)*	High	Sections 4.2, 4.3	4.2 Check and Reflect, p. 115: 1, 4, 5 4.3 Check and Reflect, p. 122: 3, 6 Chapter 4.0 Review, p. 124: 6, 7, 8 Chapter 4.0 Quiz: 3, 7, 8, 9, 19, 20, 22 Unit B Review, p. 180: 3, 5, 7, 30, 34, 40, 44 Unit B Test: 2, 4, 21
D2.4 describe the role of symmetry in structures, and identify instances of symmetry in various structures *(3.5)*	High	Section 5.2	5.2 Check and Reflect, p. 146: 2, 3, 5 Chapter 5.0 Review, p. 148: 2 Chapter 5.0 Quiz: 2, 12, 15 Unit B Review, p. 180: 17, 18, 30 Unit B Test: 9
D2.5 describe factors that can cause a structure to fail *(3.6)*	High	Sections 4.3, 5.1	4.3 Check and Reflect, p. 122: 1, 2, 4, 7 Chapter 4.0 Review, p. 124: 7, 10, 12 Chapter 4.0 Quiz: 12, 15, 23, 24 5.1 Check and Reflect, p. 139: 3, 5 Chapter 5.0 Review, p. 148: 1, 3, 6 Chapter 5.0 Quiz: 3, 11, 14, 16, 19, 21, 24 Unit B Review, p. 180: 4, 9, 11, 44, 45, 47 Unit B Test: 7, 14, 25, 26
D2.6 identify the factors that determine the suitability of materials for use in manufacturing a product or constructing a structure *(3.7)*	High	Sections 5.2, 6.2	5.2 Check and Reflect, p. 146: 1, 3, 5, 7, 8 Chapter 5.0 Review, p. 148: 5, 6, 11 Chapter 5.0 Quiz: 6, 16, 22 6.2 Check and Reflect, p. 168: 1, 3, 5

			Chapter 6.0 Review, p. 176: 2, 11 Chapter 6.0 Quiz: 6, 18, 22 Unit B Review, p. 180: 14, 15, 18, 25, 31, 35, 37, 40
D2.7 describe methods engineers and other professionals use to assess, improve, and maintain the safety of structures	High	Section 4.3	4.3 Check and Reflect p. 122: 2, 5 Chapter 4.0 Review, p. 124; 10 Unit B Task, p. 179 Unit B Review, p. 180: 4, 9, 29, 36, 44

Strand E: Earth and Space Systems—Heat in the Environment

By the end of Grade 7, students will:			
Expectation	**Degree of Fit**	**Chapter/Section References**	**Sections/Page References**
E1. Relating Science and Technology to Our Changing World: assess the benefits of technologies that reduce heat loss, and analyse various social and environmental impacts of the use of energy from renewable and non-renewable sources			
E1.1 assess the social and environmental benefits of technologies that reduce heat loss in enclosed spaces or heat transfer to surrounding spaces *(1.1)*	High	Sections 12.1, 12.3	10.2, 12.1, 12.3 Check and Reflect p. 293: 6–8; p. 350: 2,6; p. 366: 5–7 Chapter 10.0 Review, p. 310: 5 Chapter 10.0 Quiz: 24 Chapter 12.0 Review, p. 368: 1, 5, 7, 8, 10–13 Chapter 12.0 Quiz: 1–5, 6, 7, 8, 9, 22, 24 Unit D Review, p. 372: 1–3, 6, 7, 17, 18, 20, 22, 23, 27, 31, 34–36, 39, 41, 43, 44 Unit D Test: 11–20 D51 Decision-Making Analysis, p. 365
E1.2 analyse various social, economic, and environmental impacts, including impacts related to climate change, of using non-renewable and renewable sources of energy *(1.2)*	High	Sections 10.2, 12.1, 12.3	10.2, 12.1, 12.3 Check and Reflect p. 293: 5; p. 350: 2,3, 5–8; p. 366: 1–4, 6, 7 Chapter 10.0 Quiz: 7, 10, 16–21, 24 Chapter 12.0 Review, p. 368: 1–8, 10–13 Chapter 12.0 Quiz: 12, 13, 14, 16–21, 23

			Unit D Review, p. 372: 1–3, 17–22, 27, 32–37, 39, 41, 43, 44 Unit D Test: 7, 9, 10, 11–20, 23, 29, 30 D51 Decision-Making Analysis, p. 365
E2. Exploring and Understanding Concepts: demonstrate an understanding of heat as a form of energy that is associated with the movement of particles and is essential for many natural processes within Earth's systems			
E2.1 use particle theory to explain how heat affects the motion of particles in a solid, a liquid, and a gas *(3.1)*	High	Sections 10.2, 10.3	10.2, 10.3 Check and Reflect p 293: 1–3; p. 300: 1, 3, 9 Chapter 10.0 Review, p. 310: 1, 6 Chapter 10.0 Quiz: 8, 11, 14, 16–21, 23 Unit D Review, p. 372: 42 Unit D Test: 3, 11–20, 26
E2.2 demonstrate an understanding of various ways in which heat is generated *(3.2)*	High	Sections 10.1, 10.2, 12.1, 12.3	10.1, 10.2, 12.1, 12.3 Check and Reflect p. 286: 1(c), 2; p. 293: 4, 5; p. 350: 1, 3–5, 8; p. 366: 3, 6, 7 Section 10.0 Review, p. 310: 10 Chapter 10.0 Quiz: 1–5, 6, 15–22, 24 Chapter 12.0 Review, p. 368: 1, 2, 4, 7, 10–13 Unit Review, p. 372: 1–4, 6, 7, 17, 24, 27, 34, 37, 39, 41, 43, 44 Unit Test: 1, 2, 10, 11–20, 22, 23
E2.3 use particle theory to explain the effects of heat on volume in solids, liquids, and gases, including during changes of states of matter *(3.3)*	High	Section 10.3	10.3 Check and Reflect, p. 300: 3, 4, 6, 7 Chapter 10.0 Review, p. 310: 2, 3 Unit D Review, p. 372: 42 Unit D Test: 21
E2.4 explain how heat is transmitted through conduction, and describe natural processes that are affected by conduction *(3.4)*	High	Section 10.4	10.4, 11.3 Check and Reflect, p. 308: 4, 5; p. 338: 5, 6 Chapter 10.0 Review, p. 310: 1, 4, 5 Chapter 10.0 Quiz: 1–5, 9, 12, 15 Chapter 11.0 Review, p. 340: 13 Chapter 11.0 Quiz: 10–14, 16–21, 22 Unit D Review, p. 372: 1, 8, 15, 23, 31, 34, 39, 41, 42 Unit D Test: A5, A6, 11–20, 24, 27, 28

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E2.5 explain how heat is transmitted in liquids and gases through convection, and describe natural processes that depend on convection *(3.5)*	High	Sections 10.4, 11.2, 11.3	10.4, 11.2, 11.3 Check and Reflect, p. 308: 2, 4; p. 328: 1–3, 7; p. 338: 4–6, 12 Chapter 10.0 Review, p. 310: 2, 4 Chapter 10.0 Quiz: 1–5, 9, 12, 15 Chapter 11.0 Review, p. 340: 1, 4, 8, 9, 11–15 Chapter 11.0 Quiz: 6, 9, 14, 15, 16–22, 24 Unit D Review, p. 372: 1, 5, 8, 10, 12–15, 28–31, 34, 39–41 Unit D Test: 4, 11–20, 24, 26
E2.6 explain how heat is transmitted through radiation, and describe the effects of radiation from the Sun on different kinds of surfaces *(3.6)*	High	Sections 10.4, 11.2	10.4, 11.2 Check and Reflect, p. 308: 2, 4–6; p. 328: 3, 7 Chapter 10.0 Review, p. 310: 3, 4, 6 Chapter 10.0 Quiz: 9, 12, 13, 15, 16–21 Chapter 11.0 Review, p. 340: 5, 8, 13–15 Chapter 11.0 Quiz: 7, 14, 23 Chapter 12.0 Review, p. 368: 1–4 Chapter 12.0 Quiz: 11, 15 Unit D Review, p. 372: 1, 6, 8, 11, 12, 18, 25, 31–34, 37, 39, 41 Unit D Test: 4, 8, 24, 25
E2.7 describe the role of radiation in heating and cooling Earth, and explain how greenhouse gases affect the transmission of radiated heat through the atmosphere	High	Sections 11.1, 12.2	11.1, 12.2 Check and Reflect, p. 321: 5, 10, 11; p. 358: 4, 6, 10, 11 Chapter 11.0 Review, p. 340: 5, 8, 13 Chapter 12.0 Review, p. 368: 1–8, 10–13 Chapter 12.0 Quiz: 1–5, 16–21, 22, 24 Unit D Review, p. 372: 1, 8, 12, 18, 20–22, 25, 31–34, 36, 39, 41,
E2.8 identify common sources of greenhouse gases, including sources resulting from human activity, and describe how humans can reduce emissions of these gases	High	Section 12.2	12.2 Check and Reflect, p. 358: 1, 2, 5, 10, 11 Chapter 12.0 Review, p. 368: 3, 4, 7, 10–13 Chapter 12.0 Quiz: 6, 7, 10, 16–21 Unit D Review, p. 372: 1, 18–20, 34, 36, 39, 41, 43, 44 Unit D Test: 2, 11–20, 29, 30