



DISCOVERING SCIENCE 8

Correlation to the Manitoba Science Curriculum

Cluster 1: Cells and Systems

| Curriculum Outcome | Discovering Science 8 Unit 4 Chapter Section [Subsection] (Activity or Investigation) | Page(s) |
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| By the end of Grade 8, students will: | | |
| <p>8-1-01 Use appropriate vocabulary related to their investigations of cells and systems. Include: cell theory, osmosis, diffusion, selective permeability, unicellular, multicellular, specialized cells and tissues, organs, systems, arteries, veins, capillaries, terms related to cell structure, heart structure, components of blood, and primary and secondary defense systems</p> | Examples of appropriate vocabulary in UNIT 4: | |
| | cell theory | 406 |
| | *osmosis | |
| | *diffusion | |
| | selective permeability | 406 |
| | *unicellular | |
| | *multicellular | |
| | specialized cells and tissues | 420 |
| | organs, systems | 423 |
| | arteries | 437,439 |
| veins | 437,439 | |
| capillaries | 438,439 | |
| terms related to cell structure | 405 | |
| heart structure | 437 | |
| *components of blood | | |
| primary and secondary defense systems | 430 | |
| | *not in textbook | |
| <p>8-1-02 Identify characteristics of living things, and describe how different living things exhibit these characteristics. Include: composed of cells; reproduce; grow; repair themselves; require energy; respond to the environment; have a lifespan; produce wastes</p> | <p>Ch. 10 The cell is the basic unit of life 10.1 Characteristics of Life [The Smallest Unit of Life: The Cell]</p> | 391 |

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| <p>8-1-03 Describe cell theory. Include: all living things are composed of one or more cells; cells are the basic unit of structure and function of any organism; all cells come from pre-existing cells; the activity of an organism as a whole depends on the total activity of all its cells</p> | <p>Ch. 10 The cell is the basic unit of life 10.2 Focusing on Cells [The Cell Theory]</p> | <p>406</p> |
| <p>8-1-04 Identify major events and technological innovations that have enabled scientists to increase our understanding of cell biology. <i>Examples: invention of the light and electron microscope, works of Robert Hooke, Anton van Leeuwenhoek, Matthias Schleiden and Theodor Schwann</i></p> | <p>Ch. 10 The cell is the basic unit of life 10.1 Characteristics of Life [Examining Very Small Living Things] [The Compound Light Microscope] [Visualizing Microscopes] Ch. 4 Many properties of light can be understood using a wave model of light 4.1 The Nature of Light [Early Technologies Involving Light]</p> | <p>391 392 398-399 133-134</p> |
| <p>8-1-05 Identify and compare major structures in plants and animal cells, and explain their function. Include: cell membrane, cytoplasm, mitochondria, nucleus, vacuoles, cell wall, chloroplasts</p> | <p>Ch. 10 The cell is the basic unit of life 10.2 Focusing on Cells [Table 10.3 Common Organelles of Animal and Plant Cells] [The Importance of the Cell Membrane] (10-2B Building a 3-D Cell)</p> | <p>402-414 405 406 407</p> |
| <p>8-1-06 Demonstrate proper use and care of the microscope to observe the general structure of plant and animal cells. Include: preparing wet mounts beginning with the least powerful lens; focusing; drawing specimens; indicating magnification</p> | <p>Ch. 10 The cell is the basic unit of life 10.1 Characteristics of Life (10-1A Setting Up and Using a Microscope) (10-1B Observing Organisms in Pond Water) 10.2 Focusing on Cells (10-2C Observing Plant and Animal Cells) (10-2D Observing Root Tip Cells)</p> | <p>394-395 397 408-409 412</p> |
| <p>8-1-07 Describe the movement of nutrients and wastes across cell membranes and explain its importance. Include: osmosis, diffusion, selective permeability</p> | <p>Ch. 10 The cell is the basic unit of life 10.2 Focusing on Cells [Energy for Cells] (10-2E Observing Evidence of Cellular Respiration)</p> | <p>413 414</p> |

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| 8-1-08 Differentiate between unicellular and multicellular organisms. | *not in textbook | |
| 8-1-09 Describe why cells and tissues are specialized in multicellular organisms, and observe examples. Include: specialization is needed because all cells in a complex organism do not have access to the external environment | Ch. 11 Human body cells are organized as tissues, organs, and systems. 11.1 Cell Organization [The Characteristics of Systems] | 420 |
| 8-1-10 Describe structural and functional relationship among cells, tissues, organs, and systems. | Ch. 11 Human body cells are organized as tissues, organs, and systems. 11.1 Cell Organization [Tissues Are Groups of Similar Cells] [Organs Are Groups of Tissues] [Organ Systems Are Groups of Organs] (11-1B Looking at Animal Tissues) | 422 423 423 423 |
| 8-1-11 Describe the structure and function of the heart and the path of blood to and from the heart through its four chambers. Include: atria, ventricles, septum, valves, aorta, pulmonary artery, pulmonary veins, superior vena cava, inferior vena cava | Ch. 11 Human body cells are organized as tissues, organs, and systems. 11.2 Introducing Human Body Systems (11-2A Teamwork) [Table 11-1 The Eleven Human Body Systems] | 427 428 |
| 8-1-12 Compare and contrast the structure and function of arteries, veins, and capillaries. | Ch. 12 The health of the body depends on the health of its interdependent systems 12.1 How Body Systems Are Connected [Connections Between the Circulatory and Respiratory Systems] | 437-440 438 |
| 8-1-13 Identify components of blood and describe the function of each. Include: red blood cells carry oxygen; white blood cells fight infection; platelets clot blood; plasma is the liquid part of blood that transports blood cells, dissolved material, nutrients, and waste products | *not in textbook | |
| 8-1-14 Describe, using examples, how individual systems in the human body function interdependently. | Ch. 12 The health of the body depends on the health of its interdependent systems 12.1 How Body Systems Are Connected [Connections Between the Circulatory and Respiratory Systems] [Connections Between the Circulatory and Digestive Systems] | 436-444 438 439 |

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| | [Connections Between the Circulatory and Excretory Systems] [Connections Between the Nervous and Muscular Systems] | 439 440 |
| 8-1-15 Compare heart rate and respiratory rate before, during, and after various physical activities; explain the observed variations; and discuss implications for overall health. | Ch. 12 The health of the body depends on the health of its interdependent systems 12.1 How Body Systems Are Connected (12-1B The Effect of Activity on Heart Rate and Breathing Rate) | 442-443 |
| 8-1-16 Identify components of the primary and secondary defense systems of the body and describe their roles. Include: primary defense system - skin, tears, ear wax, saliva, gastric juices, cilia hairs; secondary defense system - white blood cells, antibodies | *not in textbook | |
| 8-1-17 Identify medical advances that enhance the human body's defense mechanisms and describe their effects on society. <i>Examples: vaccines, antibiotics</i> | *not in textbook | |
| 8-1-18 Research and describe disorders/diseases that affect body systems, and identify possible preventative measures. <i>Examples: liver disease, diabetes, multiple sclerosis, heart attack, stroke, high/low blood pressure, leukemia, anemia, high cholesterol</i> | Ch. 12 The health of the body depends on the health of its interdependent systems 12.1 How Body Systems Are Connected (Too Much Sugar- Not So Sweet) 12.2 Body Systems and Health) [Body Systems in Balance] [What Affects Homeostasis?] [Technology in Support of Homeostasis] [You and Your Body Systems] (12-2A Health Watch) (12-2B Evaluating Energy Drinks) | 444 448 448-449 450 451 452 453 |
| 8-1-19 Describe functional similarities and differences of comparable structures and systems in different groups of living things. <i>Examples: movement, food intake, and digestion of a unicellular organism, an invertebrate, and a vertebrate; gas exchange in plants versus animals</i> | *not in textbook | |

Cluster 2: Optics

| Curriculum Outcome By the end of Grade 8, students will: | Discovering Science 8 Unit 2 Chapter Section [Subsection] (Activity or Investigation) | Page(s) |
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| 8-2-01 Use appropriate vocabulary related to their investigations of optics. Include: spectrum; additive theory; subtractive theory; frequency; wavelength; refraction; concave and convex mirrors and lenses; terms related to types of light sources, types of electromagnetic radiation, and the law of reflection | Examples of appropriate vocabulary in UNIT 2: spectrum additive theory *subtractive theory frequency wavelength refraction concave and convex mirrors and lenses *terms related to types of light sources types of electromagnetic radiation law of reflection *not in textbook | 150,151 152 138,140,142 65,138 212 196-206, 214-226 158 170,178 |
| 8-2-02 Differentiate between incandescent and luminescent sources of light. Include: *fluorescent, *phosphorescent, *chemiluminescent, bioluminescent | Ch. 3 Bodies of water influence climate and species distribution 3.2 Living in Water [Saltwater Environments] *not in textbook | 93-94 |
| 8-2-03 Demonstrate that light is a form of energy, that light travels in a straight line, and can be separated into the visible light spectrum. | (Light is Energy) Ch. 4 Many properties of light can be understood using a wave model of light 4.1 The Nature of Light [Particles or Waves of Light] 4.3 Properties of Visible Light [Wave Model of Light] [Refraction of Light] [Colours of the Rainbow] [Producing the Visible Spectrum] | 129 135-136 149 149 150 151 |
| 8-2-04 Explain, using the additive theory, how colours are produced, and identify applications of this theory in daily life. | Ch. 4 Many properties of light can be understood using a wave model of light 4.3 Properties of Visible Light [Colour and Reflection] (4-3B Colour Your Rainbow) | 152-153 153 |

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| <p>8-2-05 Explain how the human eye detects colour, and how the ability to perceive colour may vary from person to person.</p> | <p>Ch.6 Lenses refract light to form images 6.2 Human Vision (6-2A Changing Colours) [Black-and-White Vision and Colour Vision] (6-2B What Colours Do Rod and Cone Cells Detect?) [Other Types of Blindness]</p> | <p>228 232 233 236</p> |
| <p>8-2-06 Demonstrate, using the subtractive theory, how colours are produced, and identify applications of this theory in daily life.</p> | <p>*not in textbook</p> | |
| <p>8-2-07 Compare and contrast various types of electromagnetic radiation, with respect to relative energy, frequency, wavelength, and human perception. Include: radio waves, microwaves, infrared radiation, visible light, ultra-violet radiation, x-rays, gamma rays.</p> | <p>Ch. 4 Many properties of light can be understood using a wave model of light 4.3 Properties of Visible Light [Producing the Visible Spectrum] 4.4 Light and the Electromagnetic Spectrum (4-4A Seeing the Invisible) [Radio waves] [Microwaves] [Infrared Waves] [Ultra-violet Waves] [X-rays] [Gamma Rays]</p> | <p>151 157 158 159 161 162 163-164 164</p> |
| <p>8-2-08 Provide examples of technologies that use electromagnetic radiation, and describe potential positive and negative impacts of their uses. <i>Examples: satellite dish, x-ray machine, light telescopes, motion sensors, microwave ovens</i></p> | <p>Ch. 4 Many properties of light can be understood using a wave model of light 4.4 Light and the Electromagnetic Spectrum (Is Electromagnetic Radiation Helpful or Harmful?)</p> | <p>166</p> |
| <p>8-2-09 Conduct experiments to determine the law of reflection, and provide examples of the use of reflection in daily life.. Include: the angle of reflection is the same as the angle of incidence; the incident beam, the normal and the reflected beam are all on the same plane</p> | <p>Ch. 5 The law of reflection allows mirrors to form images 5.1 The Ray Model of Light [Light Can Be Reflected] [The Law of Reflection] (5-1C When Light Reflects) 5.2 Images in Plane Mirrors (5-2A Reflections of Reflections) [Plane Mirrors] [Predicting Image Characteristics] [Using Plane Mirrors] (5-2B Demonstrating the Law of Reflection)</p> | <p>176-177 178 183 188 189 190 191 192-193</p> |

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| | (5-2C Applying the Law of Reflection) | 194 |
| 8-2-10 Conduct experiments to compare the refraction of light through substances of different densities. | Ch. 5 The law of reflection allows mirrors to form images 5.1 The Ray Model of Light [Light Can Be Refracted] [Describing Refraction] (5-1B Observing Refraction) [The Direction of the Refracted Ray] [Refraction Effects] (5-1D Follow That Refracted Ray] | 179 180 180 181 181 184-185 |
| 8-2-11 Explain how reflection and refraction produce natural phenomena. <i>Examples: sun dogs, rainbows, blue sky</i> | Ch. 4 Many properties of light can be understood using a wave model of light 4.3 Properties of Visible Light (4-3A Rainbows of Light) [Colours of the Rainbow] | 148 150 |
| 8-2-12 Investigate to determine how light interacts with concave and convex mirrors and lenses, and provide examples of their use in various optical instruments and systems. | Ch. 5 The law of reflection allows mirrors to form images 5.3 Images in Curved Mirrors (5-3A Reflection From a Spoon) [Concave Mirrors] [Focal Point of a Concave Mirror] [Ray Diagrams for Concave Mirrors] [Predicting Image Characteristics Using Ray Diagrams] [Using Concave Mirrors] [Convex Mirrors] [Ray Diagrams for Convex Mirrors] [Predicting the Image Characteristics in a Convex Mirror] [Using Convex Mirrors] (5-3B Real and Virtual Images) (Curved Surfaces Collect Solar Energy) Ch. 6 Lenses refract light to form images 6.1 Concave and Convex Lenses (6-1A Lenses and Light Rays) [Refraction of Light Through Lenses] [Convex Lenses] (6-1B The Focal Length of Convex Lens) [Drawing Ray Diagrams for Convex Lenses] [Predicting Image Characteristics Using Ray Diagrams] [Concave Lenses] [Drawing Ray Diagrams for Concave | 197 197 198 198 199 203 204 204-205 205 206 207 208 215 215-216 217-218 218 219 220-221 221 |

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| | Lenses] [Image Characteristics for Concave Lenses] | 222 223 |
| 8-2-13 Demonstrate the formation of images using a double convex lens, and predict the effects of changes in lens position on the size and location of the image. <i>Examples: magnify or reduce an image by altering the placement of one or more lenses</i> | Ch. 6 Lenses refract light to form images 6.1 Concave and Convex Lenses (6-1C Make a Model of a Projector) (6-1D Pinhole Camera) 6.3 Extending Human Vision (6-3A Experimenting With a Simple Lens) [How to Bring an Image into Focus] [Microscopes] [Telescopes] [Binoculars] [Cameras] | 224 225 242 243 243 245-247 247 248 |
| 8-2-14 Compare the functional operation of the human eye to that of a camera in focusing an image. | Ch. 6 Lenses refract light to form images 6.3 Extending Human Vision [Cameras Have Similarities to Human Eyes] | 249 |

Cluster 3: Fluids

| Curriculum Outcome | Discovering Science 8 Unit 3 Chapter Section [Subsection] (Activity or Investigation) | Page(s) |
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| By the end of Grade 8, students will: | | |
| 8-3-01 Use appropriate vocabulary related to their investigations of fluids. Include: fluid, viscosity, flow, density, particle theory of matter, buoyant force, pressure, compressibility, hydraulic, pneumatic | Examples of appropriate vocabulary in UNIT 3: Fluid Viscosity Flow Density particle theory of matter buoyant force Pressure Compressibility Hydraulic Pneumatic | 262-265 278-284 281 300 302-304 334 348,349 354 348,356 348,358 |

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| <p>8-3-02 Distinguish between fluids and non-fluids.</p> | <p>(Fluid or Non-Fluid) Ch. 7 Viscosity describes a fluid's resistance to flow 7.1 Describing Fluids [Go With the Flow] (7-1A Magic Mud) (7-1B Can Solids Flow, Too?)</p> | <p>265 268 269 271</p> |
| <p>8-3-03 Explore and compare the viscosity of various liquids. <i>Examples: time the fall of a steel ball through various liquids; time the flow rate of different liquids on an incline</i></p> | <p>Ch. 7 Viscosity describes a fluid's resistance to flow 7.2 Viscosity and Flow Rate [Viscosity] [Why Is Viscosity Important to Us?] (7-2A The Value of Viscosity) [Flow Rate] (7-2B The Flow Rate of Liquids)</p> | <p>278 278-279 280 281 282-283</p> |
| <p>8-3-04 Identify products in which viscosity is an important property, and evaluate different brands of the same product, using the design process. <i>Examples: sauces, lubricating oil, paint, hand lotion</i></p> | <p>*not in textbook</p> | |
| <p>8-3-05 Plan and conduct experiments to determine factors that affect flow within a given system. <i>Examples: temperature, pressure, tube diameter</i></p> | <p>Ch. 7 Viscosity describes a fluid's resistance to flow 7.3 Factors Affecting Viscosity [Temperature and the Viscosity of Liquids] [Temperature and the Viscosity of Gases] (7-3A Cool It!)</p> | <p>286-287 287 287</p> |
| <p>8-3-06 Measure, calculate, and compare densities of solids, and liquids, and gases. Include: different amounts of the same substance, regularly and irregularly shaped objects</p> | <p>Ch. 8 Density describes the amount of mass in a given volume of a substance 8.1 Defining Density [Density and the Particle Theory] (8-1A Differing Densities) 8.2 Determining Density [Calculating Density] (8-2A What is the Density of a Pencil?) (8-2B Determining Density) (8-2C Comparing Densities)</p> | <p>302-304 305 311-314 315 316-319 320</p> |
| <p>8-3-07 Illustrate, using the particle theory of matter, the effects of temperature change on the density of solids, liquids, and gases.</p> | <p>Ch. 8 Density describes the amount of mass in a given volume of a substance 8.3 Changes in Density</p> | |

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| | [Changes in Temperature and Density] (8-3A Lava Lamps) (8-3B Layers of Water) | 324-326 325 328 |
| 8-3-08 Compare fluids of different densities to determine how they alter the buoyant force on an object. | Ch. 9 Forces influence the motion and properties of fluids 9.1 Forces and Buoyancy (9-1A The Amazing Floating Egg) (9-1B Cartesian Diver) (9-1C Build a Density Tower) (9-1D Measuring Buoyancy) | 338 342 344 345 |
| 8-3-09 Recognize that pressure is the relationship between force and area, and describe situations in which pressure can be increased or decreased by altering surface area. <i>Examples: wearing snowshoes instead of boots to decrease pressure, increase surface area, and stay on top of snow</i> | Ch. 9 Forces influence the motion and properties of fluids 9.2 Pressure, Hydraulics, and Pneumatics [What's Pressure] (9-2A Pop 'em Quick!) [The Relationship Among Force, Area, and Pressure] [Calculating Pressure] | 349 349 350 350-353 |
| 8-3-10 Explain, using the particle theory of matter, the relationships among pressure, volume, and temperature of liquid and gaseous fluids. | Ch. 9 Forces influence the motion and properties of fluids 9.2 Pressure, Hydraulics, and Pneumatics [Pressure and Liquids in Nature] [Atmospheric Pressure] 9.3 relationships Among Pressure, Volume, and Temperature of Gases (9-3A Hot and Cold Gases) [Pressure and Volume of a Gas] (9-3B Lifting With Air) [Temperature and Volume of a Gas] [Temperature and Pressure of a Gas] (9-3C The Pressure is Rising) (9-3D Putting on the Pressure) | 354 355 365 366 367 368 368 369 371 |
| 8-3-11 Compare the relative compressibility of water and air, and relate this property to their ability to transmit force in hydraulic and pneumatic devices. | Ch. 9 Forces influence the motion and properties of fluids 9.2 Pressure, Hydraulics, and Pneumatics | |

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| | [Compressibility of solids, Liquids, and Gases] [Pascal's Law] [Liquid Pressure and Hydraulic Systems] (9-2B Simple Hydraulics) [Air Pressure and Pneumatic Systems] (9-2C Exploring Pneumatics) (9-2D Bottle Squeeze) | 354 356 356 357 358-359 359 360 |
| 8-3-12 Identify a variety of natural and constructed hydraulic and pneumatic systems and describe how they function. <i>Examples: heart, lungs, eyedropper, misting bottle, fuel pump, hydraulic lift</i> | Ch. 9 Forces influence the motion and properties of fluids 9.2 Pressure, Hydraulics, and Pneumatics (Body Hydraulics) | 362 |
| 8-3-13 Compare hydraulic and pneumatic systems, and identify advantages and disadvantages of each. | *not in textbook | |
| 8-3-14 Use the design process to construct a prototype that uses a pneumatic or hydraulic system to perform a given task. <i>Examples: a prototype that can lift a load a specified distance</i> | (Emergency Hovercraft) | 378-379 |

Cluster 4: Water Systems on Earth

| Curriculum Outcome | Discovering Science 8 Unit 1 Chapter Section [Subsection] (Activity or Investigation) | Page(s) |
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| By the end of Grade 8, students will: | | |
| 8-4-01 Use appropriate vocabulary related to their investigations of water systems. Include: heat capacity, fresh water, salt water, convection, Coriolis effect, global water cycle, drainage system, watershed, continental divide, erosion, deposition, flow rate, tides, terms related to water treatment | Examples of appropriate vocabulary in UNIT 1: *heat capacity fresh water salt water convection Coriolis effect global water cycle drainage system *watershed continental divide erosion deposition flow rate | 14-20 14-20 85 53,55 8-9 26,28 27 67 273 281 |

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| | tides *terms related to water treatment *not in textbook | 64-77 |
| 8-4-02 Demonstrate that water, as compared to other substances, has a high heat capacity and is able to dissolve a wide variety of solutes. | *not in textbook | |
| 8-4-03 Compare and contrast characteristics and properties of fresh water and salt water. <i>Examples: freezing point, density, dissolved materials, global distribution, relative amounts, biologically diverse components of each</i> | Ch. 1 The water cycle plays a vital role on Earth 1.1 Distribution of Water 1.2 Comparing Ocean Water and Fresh Water (1-2B Salinity's Effect on Water Density) Ch. 3 Bodies of water influence climate and species distribution 3.2 Living Water [Freshwater Environments] [Saltwater Environments] | 8 14-17 18-19 90-93 93-94 |
| 8-4-04 Identify factors that can work individually or in combination to affect ocean currents. Include: convection, Coriolis effect, prevailing winds, position of continents | Ch. 2 Oceans control the water cycle 2.2 Ocean Currents (2-2A Winds and Currents) [Surface Currents] [Deep Currents] | 53 54-56 56-59 |
| 8-4-05 Describe how the heat capacity of large bodies of water and the movement of ocean currents influence regional climates. <i>Examples: Gulf Stream effects, El Nino, lake affect</i> | Ch. 3 Bodies of water influence climate and species distribution 3.1 Oceans and Climate [Warm and Cold Currents] (3-1A Learning How Liquids Lose Heat) [The Transfer of Heat Affects Weather] (3-1B Currents and Climate) | 82-83 84 85-86 87 |
| 8-4-06 Describe the components of the global water cycle and explain how it works. | Ch. 1 The water cycle plays a vital role on Earth 1.1 Distribution of Water [The Water Cycle] (1-1A A Water Cycle Model) | 8-9 10-11 |
| 8-4-07 Describe features of the North American drainage system. Include: local and regional watersheds, direction of water flow, continental divide | Ch. 1 The water cycle plays a vital role on Earth 1.3 Sources of Fresh Water (1-3A Tracking Run-Off) (1-3B How Can Global Warming Be Slowed?) (1-3C How Much Water?) | 22-28 29 30 31 |

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| <p>8-4-08 Describe how erosion and deposition are influenced by the flow rate of a stream or river, and contrast the related characteristics of young and mature streams. <i>Examples: meanders, oxbows, alluvial deposits, sandbars, flood plains, deltas</i></p> | <p>*not in textbook</p> | |
| <p>8-4-09 Describe how wave action and ice movement in large bodies of water cause erosion and deposition.</p> | <p>Ch. 2 Oceans control the water cycle 2.3 Waves and Tides [Ocean Waves] [How Waves Change Shorelines] (2-3A By the Seashore) (2-3B Waves and Beaches)</p> | <p>64-66 66-69 72 73-74</p> |
| <p>8-4-10 Explain how tides are caused and describe their effects on shorelines.</p> | <p>Ch. 2 Oceans control the water cycle 2.3 Waves and Tides [Tides]</p> | <p>69-71</p> |
| <p>8-4-11 Describe examples of human interventions to prevent riverbank or coastal erosion. <i>Examples: vegetation, reinforcement (concrete, boulders), piers, breakwaters</i></p> | <p>Ch. 2 Oceans control the water cycle 2.3 Waves and Tides (2-3B Safeguarding Our Shorelines)</p> | <p>75</p> |
| <p>8-4-12 Identify factors that can cause flooding either individually or in combination. <i>Examples: heavy snow pack, quick thaw, rain in spring, lack of vegetation to remove water through transpiration, frozen ground preventing absorption, agricultural drainage systems, dams, diversions</i></p> | <p>*not in textbook</p> | |
| <p>8-4-13 Provide examples of the way in which technology is used to contain or prevent damage due to flooding, and discuss related positive and negative impacts. <i>Examples: floodway, diversion, dike, levee</i></p> | <p>*not in textbook</p> | |
| <p>8-4-14 Identify sources of drinking water and describe methods for obtaining water in areas where supply is limited. <i>Examples: desalination, melting of ice, condensation</i></p> | <p>Ch. 1 The water cycle plays a vital role on Earth 1.2 Comparing Ocean Water and Fresh Water (1-2A Mini Distillation) (Turning on the Fog Faucet)</p> | <p>15 32</p> |
| <p>8-4-15 Explain how and why water may need to be treated for use by humans. Include: filtration, settling, chlorination, fluoridation</p> | <p>*not in textbook</p> | |

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| <p>8-4-16 Compare the waste-water disposal system within their communities to one used elsewhere. Include: process involved, environmental impact cost</p> | <p>*not in textbook</p> | |
| <p>8-4-17 Identify substances that may pollute water, related environmental and societal impacts of pollution, and ways to reduce or eliminate effects of pollution.</p> | <p>Ch. 3 Bodies of water influence climate and species distribution 3.2 Living In Water (3-2B Too Much of a Good Thing) 3.3 Human Impact on Water Systems (3-3A How Do Your Actions Affect the Ocean?) [Sources of Water Pollution] [The Effects of Water Pollution] [Acid Precipitation] [Offshore Oil Industry and the Marine Environment] (3-3B Water Health Test)</p> | <p>96-97 100 101 101-102 102-103 104 108-111</p> |
| <p>8-4-18 Identify environmental, social, and economic factors that should be considered in the management of water resources. <i>Examples: ecosystem preservation, employment, recreation, industrial growth, water quality</i></p> | <p>*not in textbook</p> | |
| <p>8-4-19 Use the design process to develop a system to solve a water-related problem.</p> | <p>Ch. 3 Bodies of water influence climate and species distribution 3.3 Human Impact on Water Systems (3-3C Not an Easy Decision)</p> | <p>112</p> |