

Cross-Reference Guide: Grade 4 Alberta Science with Project WILD and Below Zero *
J. van Kessel, M.Sc., B.Ed.

Topic A: Waste and Our World		Project Wild*	Below Zero*
General Learner Expectations	Specific Learner Expectations		
4–5 Recognize that human activity can lead to the production of wastes, and identify alternatives for the responsible use and disposal of materials.	1. Identify plant and animal wastes, and describe how they are recycled in nature. For example, plant leaves serve as a source of food for soil insects, worms and other creatures. The wastes of these animals may then be further broken down by molds, fungi and bacteria.	13 Interview a Spider (m) 18 Wildlife is Everywhere! (m) 20 Microtrek Scavenger Hunt (m) 46 What's for Dinner? 70 Designing a Habitat (m) 82 Wild Words...A Journal-Making Activity (m) 92 Eco-Enrichers (m) 118 Kelp Help (e1,2) 165 Micro Odyssey (m) 168 Wetland Metaphors (m) 172 Marsh Munchers (e1) 280 Learning to Look, Looking to See (m) 283 The Glass Menagerie 310 Aquatic Times (m) 322 Deadly Waters	
	2. Identify and classify wastes that result from human activity.	48 Litter We Know 50 How Wet Is Our Planet? (m, e2) 230 No Water Off a Duck's Back (m) 252 Lobster in Your Lunch Box (m) 262 Watered Down History (m) 276 Water We Eating? (m) 280 Learning to Look, Looking to See (m, e3) 306 Planning for People and Wildlife 328 Ethi-Thinking (m, e) 310 Aquatic Times (m) 322 Deadly Waters 335 What Did Your Lunch Cost Wildlife? (m) 337 Flip the Switch for Wildlife! (m)	141 Shocking Snow! (e) 145 The Acid Test

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General Learner Expectations	Specific Learner Expectations	Project Wild*	Below Zero*
		354 Dragonfly Pond (m) 368 Plastic Jellyfish 376 Watershed (m 9, e4) 283 The Glass Menagerie (m, e2/3)	
	3. Describe alternative methods of disposal, and identify possible advantages and disadvantages of each.	272 The Power of a Song (m, e1) 310 Aquatic Times (m) 368 Plastic Jellyfish (m)	
	4. Distinguish between wastes that are readily biodegradable and those that are not.	368 Plastic Jellyfish (e5)	
	5. Compare different kinds of packaging, and infer the relative advantages and disadvantages of that packaging. In evaluating different forms of packaging, students should demonstrate the ability to consider a consumer perspective as well as an environmental perspective.	48 Litter We Know (m7) 252 Lobster in Your Lunch Box (m) 276 Water We Eating? (m) 335 What Did Your Lunch Cost Wildlife? 368 Plastic Jellyfish	
	6. Identify methods of waste disposal currently used within the local community.	109 Water Canaries (e5) 283 The Glass Menagerie (m, e3) 310 Aquatic Times (m) 381 Alice in Waterland (e3) 306 Planning for People and Wildlife (e1/2)	
	7. Identify kinds of wastes that may be toxic to people and to the environment.	50 How Wet Is Our Planet? (e2) 57 Water Wings (e2) 127 Urban Nature Search (e) 165 Micro Odyssey (e2)	141 Shocking Snow! (e)

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General Learner Expectations	Specific Learner Expectations		
		230 No Water Off a Duck's Back (m) 272 The Power of a Song (m, e1) 310 Aquatic Times (m) 322 Deadly Waters (e2) 368 Plastic Jellyfish 371 Something's Fishy Here! 376 Watershed (9/10, e4) 299 Deadly Links (m) 319 Deadly Skies (m)	
	8. Identify alternative materials and processes that may decrease the amount of waste produced; e.g., reducing wastage of food, using both sides of a sheet of paper.	48 Litter We Know (e2) 268 Cartoons and Bumper Stickers (m, e) 272 The Power of a Song (m, e1) 306 Planning for People and Wildlife (m, e1/2) 310 Aquatic Times (m) 319 Deadly Skies (m, e6) 368 Plastic Jellyfish (e3) 381 Alice in Waterland (e2)	141 Shocking Snow! (e)
	9. Identify ways in which materials can be reused or recycled, including examples of things that the student has done.	55 Aqua Words (m) 82 Wild Words...A Journal-Making Activity (m) 90 Let's Go Fly a Kite (m) 368 Plastic Jellyfish	
	10. Develop a flow chart for a consumer product that indicates the source materials, final product, its use and method of disposal.	46 What's for Dinner? (m) 101 Make a Coat! (m) 252 Lobster in Your Lunch Box 276 Water We Eating? (m) 381 Alice in Waterland (eval1)	
	11. Identify actions that individuals and groups can take to minimize the	48 Litter We Know 55 Aqua Words (m)	

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General Learner Expectations	Specific Learner Expectations		
	production of wastes, to recycle or reuse wastes and to ensure the safe handling and disposal of wastes.	57 Water Wings (m, e2) 82 Wild Words...A Journal-Making Activity (m) 109 Water Canaries (e4) 161 Visual Vocabulary (m) 230 No Water Off a Duck's Back (m) 257 Changing Attitudes (m, e/var2) 262 Watered Down History (m, e1) 268 Cartoons and Bumper Stickers (m, e) 272 The Power of a Song (e1) 310 Aquatic Times (m) 319 Deadly Skies (m, e2/6) 322 Deadly Waters (e1) 368 Plastic Jellyfish (& e3) 371 Something's Fishy Here! (m) 376 Watershed (9/10, e4) 381 Alice in Waterland (e2) 299 Deadly Links (m, e2/3)	
	12. Develop and implement a plan to reduce waste, and monitor what happens over a period of time.	48 Litter We Know (m) 262 Watered Down History (e1) 368 Plastic Jellyfish (m) 371 Something's Fishy Here! (e1) 381 Alice in Waterland	

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Topic E: Plant Growth and Changes		Project Wild*	Below Zero*
General Learner Expectations	Specific Learner Expectations		
<p>4–10 Demonstrate knowledge and skills for the study, interpretation, propagation and enhancement of plant growth.</p>	<p>1. Describe the importance of plants to humans and their importance to the natural environment. Students who meet this expectation should be able to give examples of plants being used as a source of food or shelter, and be aware of the role plants play in the environment; e.g., preventing erosion, maintaining oxygen.</p>	<p>4 Animal Charades (m) 20 Microtrek Scavenger Hunt (m) 46 What's for Dinner? 55 Aqua Words (m) 62 Water Plant Art (e2,3) 82 Wild Words...A Journal-Making Activity (m) 85 Animal Poetry (m) 101 Make a Coat! (m) 105 Riparian Retreat (m) 118 Kelp Help 125 Graphanimal (m) 127 Urban Nature Search 131 Good Buddies (m) 133 Forest in a Jar (m) 135 Pond Succession (m) 150 Classroom Carrying Capacity (m) 156 How Many Bears Can Live in This Forest? 161 Visual Vocabulary (m) 168 Wetland Metaphors (m10) 172 Marsh Munchers (e1) 180 Blue Ribbon Niche (m) 237 Migration Headache (m) 242 Aquatic Roots 252 Lobster in Your Lunch Box 257 Changing Attitudes (m, e/var1) 262 Watered Down History (m) 276 Water We Eating? (m) 289 Shrinking Habitat 293 Migration Barriers</p>	<p>83 Winter-Wise Insects (m) 93 A Furry Plant? (m) 129 What Gall! (m)</p>

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Topic E: Plant Growth and Changes		Project Wild*	Below Zero*
General Learner Expectations	Specific Learner Expectations		
		299 Deadly Links (m) 310 Aquatic Times (m)	
	2. Identify and describe the general purpose of plant roots, stems, leaves and flowers.	62 Water Plant Art (m)	93 A Furry Plant? (e1)
	3. Describe common plants, and classify them on the basis of their characteristics and uses.	46 What's for Dinner? (m) 62 Water Plant Art (e2) 95 Seed Need 101 Make a Coat! (m) 127 Urban Nature Search 177 The Edge of Home (m) Who Lives Here? (m, e) 242 Aquatic Roots (m) 252 Lobster in Your Lunch Box 276 Water We Eating? (m) 280 Learning to Look, Looking to See (m, e2) 310 Aquatic Times (m)	27 Twiggy Tales (m) 93 A Furry Plant? (m) 97 Snow Lovers or Haters? 129 What Gall! (m)
	4. Recognize that plant requirements for growth; i.e., air, light energy, water, nutrients and space; vary from plant to plant and that other conditions; e.g., temperature and humidity; may also be important to the growth of particular plants.	92 Eco-Enrichers (m) 105 Riparian Retreat (m, e1) 127 Urban Nature Search 133 Forest in a Jar (m) 135 Pond Succession (m) 177 The Edge of Home (m4) 188 Rainfall and the Forest 224 Smokey he Bear Said What? (m) 237 Migration Headache (m)	93 A Furry Plant? 97 Snow Lovers or Haters? 121 Wise Wintering Plants 145 The Acid Test (m)
	5. Identify examples of plants that have special needs.	105 Riparian Retreat (m, e1) 118 Kelp Help (m) 135 Pond Succession (m)	27 Twiggy Tales (m)

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Topic E: Plant Growth and Changes			
General Learner Expectations	Specific Learner Expectations	Project Wild*	Below Zero*
		224 Smokey the Bear Said What? (m) 62 Water Plant Art (m)	
	6. Recognize that a variety of plant communities can be found within the local area and that differences in plant communities are related to variations in the amount of light, water and other conditions.	62 Water Plant Art (e1) 82 Wild Words...A Journal-Making Activity (m) 105 Riparian Retreat (m, e1) 125 Graphanimal (m) 127 Urban Nature Search 133 Forest in a Jar (m7) 135 Pond Succession (m var) 168 Wetland Metaphors (e1) 172 Marsh Munchers (e2/3) 177 The Edge of Home (m) 180 Blue Ribbon Niche (m) 188 Rainfall and the Forest (m) 220 Who Lives Here? (m, e) 224 Smokey the Bear Said What? (e2) 242 Aquatic Roots 280 Learning to Look, Looking to See (m, e2) 283 The Glass Menagerie (m) 289 Shrinking Habitat (& aq2)	5 Snow Tours (m) 27 Twiggy Tales (m) 93 A Furry Plant? 97 Snow Lovers or Haters? 121 Wise Wintering Plants (m) 141 Shocking Snow! (m)
	7. Recognize that plants of the same kind have a common life cycle and produce new plants that are similar, but not identical, to the parent plants.	133 Forest in a Jar (m7) 135 Pond Succession (m, var)	93 A Furry Plant? (m)
	8. Describe ways that various flowering plants can be propagated, including from seed, from cuttings,		

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General Learner Expectations	Specific Learner Expectations		
	from bulbs and by runners.		
	9. Nurture a plant through one complete life cycle—from seed to seed.	92 Eco-Enrichers (m8) 95 Seed Need (6, e1/2) 133 Forest in a Jar (m)	93 A Furry Plant? (m, e3)
	10. Describe the care and growth of a plant that students have nurtured, in particular: • identify the light, temperature, water and growing medium requirements of the plant • identify the life stages of the plant • identify the reproductive structures of the plant.	82 Wild Words...A Journal-Making Activity (m) 92 Eco-Enrichers (m) 95 Seed Need (6, e1/2) 133 Forest in a Jar (m) 319 Deadly Skies (m)	93 A Furry Plant? (e3) 145 The Acid Test
	11. Describe different ways that seeds are distributed; e.g., by wind, by animals; and recognize seed adaptations for different methods of distribution.	95 Seed Need 127 Urban Nature Search (m) 131 Good Buddies (m) 224 Smokey the Bear Said What? (m)	

*** End Notes** (for all tables)

bold - very strong correlation of activity with outcome/expectation

m - minor modification required for SLE

- relevant step in activity procedure

e - include extension activity

aq - aquatic extension

eval - evaluation section of activity

var - variation section of activity

* See end notes for abbreviations