

		<i>Lake Erie Literacy Concepts by Letter</i>		
UNIFYING CONCEPTS AND PROCESSES		4a	4b	4c
<i>All Grades</i>	1. Systems, Order and Organization		x	
	2. Evidence, Models and Explanation		x	
	3. Change, Constancy and Measurement	x	x	
	4. Evolution and Equilibrium		x	x
	5. Form and Function		x	x

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EARTH AND SPACE		4a	4b	4c
<i>Grades K-4</i>	6. Properties of Earth Materials	x		
	7. Objects in the Sky			
	8. Changes in Earth and Sky			
<i>Grades 5-8</i>	9. Structure of the Earth System	x	x	
	10. Earth's History		x	
	11. Earth in the Solar System			
<i>Grades 9-12</i>	12. Energy in the Earth System		x	
	13. Origin and Evolution of the Earth System			
	14. Origin and Evolution of the Universe			
	15. Geochemical Cycles			

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LIFE SCIENCE		4a	4b	4c
<i>Grades K-4</i>	16. Characteristics of Organisms		x	x
	17. Life Cycles of Organisms		x	
	18. Organisms and Environments		x	x
<i>Grades 5-8</i>	19. Structure and Function in Living Systems		x	x
	20. Reproduction and Heredity		x	
	21. Regulation and Behavior		x	
	22. Populations and Ecosystems			x
	23. Diversity and Adaptations of Organisms	x	x	x
<i>Grades 9-12</i>	24. Interdependence of Organisms		x	x
	25. Behavior of Organisms			
	26. Matter, Energy and Organization in Living Systems		x	
	27. Biological Evolution		x	x

	28. Molecular Basis of Heredity			
	29. The Cell			

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PHYSICAL SCIENCE		4a	4b	4c
<i>Grades K-4</i>	30. Properties of Objects and Materials	x		
	31. Position and Motion of Objects			
	32. Light, Heat, Electricity and Magnetism			
<i>Grades 5-8</i>	33. Properties and Changes of Properties in Matter			
	34. Motions and Forces			
	35. Transfer of Energy			
<i>Grades 9-12</i>	36. Structure of Atoms			
	37. Structure and Properties of Matter	x		
	38. Chemical Reactions		x	
	39. Motions and Forces			
	40. Conservation in Energy and Increase in Disorder			
	41. Interactions of Energy and Matter			

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HISTORY AND NATURE OF SCIENCE		4a	4b	4c
<i>All Grades</i>	42. Science as Human Endeavor K-12			
	43. Nature of Scientific Knowledge 5-12			
<i>Grades 5-8</i>	44. History of Science			
<i>Grades 9-12</i>	45. Historical Perspectives			

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PERSONAL AND SOCIAL PERSPECTIVES		4a	4b	4c
<i>All Grades</i>	46. Personal Health K-8			
<i>Grades K-4</i>	47. Characteristics and Changes in Populations			x
	48. Types of Resources			x
	49. Changes in Environments			
	50. Science and Technology in Local Challenges			
	51. Populations, Resources and Environments			x
	52. Natural Hazards			

Grades 5-8				
	53. Risks and Benefits			
	54. Science and Technology in Society			
Grades 9-12	55. Personal and Community Health			
	56. Population Growth			
	57. Natural Resources			x
	58. Environmental Quality			x
	59. Natural and Human-Induced Hazards			
	60. Science and Technology in Local, National & Global Challenges			

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SCIENCE AND TECHNOLOGY		4a	4b	4c
Grades K-4	61. Abilities to Distinguish Between Natural Objects & Objects Made by Humans			
	62. Abilities of Technological Design K-4			
	63. Understanding About Science & Technology K-4			
Grades 5-8	64. Abilities of Technological Design 5-8			
	65. Understanding About Science & Technology 5-8			
Grades 9-12	66. Abilities of Technological Design 9-12			
	67. Understanding About Science & Technology 9-12			

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SCIENCE AS INQUIRY		4a	4b	4c
All Grades	68. Abilities Necessary to Do Scientific Inquiry K-12			
	69. Understanding About Scientific Inquiry K-12		x	x