



Alignment Document  
State of Wisconsin and Aventa Learning

**Science 7**

Strand	Common Curriculum Goal	Standard	Lesson Name
A.8 Science Connections	A.8 Science Connections	A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems	5 technology 6 technological design
		A.8.2 Describe limitations of science systems and give reasons why specific science themes are included in or excluded from those systems	
		A.8.3 Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them	6 technological design
		A.8.4 Collect evidence to show that models developed as explanations for events were (and are) based on the evidence available to scientists at the time	
		A.8.5 Show how models and explanations, based on systems, were changed as new evidence accumulated (the effects of constancy, evolution, change, and measurement should all be part of these explanations)	17 species and the physical environment
		A.8.6 Use models and explanations to predict actions and events in the natural world	
		A.8.7 Design real or thought investigations to test the usefulness and limitations of a model	

		<b>A.8.8</b> Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world	
<b>B.8</b> Nature of Science	<b>B.8</b> Nature of Science	<b>B.8.1</b> Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences	29 agriculture and society
		<b>B.8.2</b> Identify and describe major changes that have occurred over in conceptual models and explanations in the earth and space, life and environmental, and physical sciences and identify the people, cultures, and conditions that led to these developments	
		<b>B.8.3</b> Explain how the general rules of science apply to the development and use of evidence in science investigations, model-making, and applications	
		<b>B.8.4</b> Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world	
		<b>B.8.5</b> Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time	
		<b>B.8.6</b> Explain the ways in which scientific knowledge is useful and also limited when applied to social issues	4 science and society
<b>C.8</b> Science Inquiry	<b>C.8</b> Science Inquiry	<b>C.8.1</b> Identify questions they can investigate using resources and equipment they have available	
		<b>C.8.2</b> Identify data and locate sources of information including their own records to answer the questions being investigated	3 organizing data
		<b>C.8.3</b> Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions	1 the tools of science 2 variables in scientific investigations 3 organizing data

		<b>C.8.4</b> Use inferences to help decide possible results of their investigations, use observations to check their inferences	
		<b>C.8.5</b> Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations	
		<b>C.8.6</b> State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected	3 organizing data
		<b>C.8.7</b> Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed	3 organizing data
		<b>C.8.8</b> Use computer software and other technologies to organize, process, and present their data	1 the tools of science 3 organizing data
		<b>C.8.9</b> Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations	
		<b>C.8.10</b> Discuss the importance of their results and implications of their work with peers, teachers, and other adults	6 technological design
		<b>C.8.11</b> Raise further questions which still need to be answered	6 technological design
<b>D.8</b> Physical Science	Properties and Changes of Properties in Matter	<b>D.8.1</b> Observe, describe, and measure physical and chemical properties of elements and other substances to identify and group them according to properties such as density, melting points, boiling points, conductivity, magnetic attraction, solubility, and reactions to common physical and chemical tests	
		<b>D.8.2</b> Use the major ideas of atomic theory and molecular theory to describe physical and chemical interactions among substances, including solids, liquids, and gases	11 chemistry and the periodic table

		<b>D.8.3</b> Understand how chemical interactions and behaviors lead to new substances with different properties	11 chemistry and the periodic table
		<b>D.8.4</b> While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges	11 chemistry and the periodic table
	Motions and Forces	<b>D.8.5</b> While conducting investigations, explain the motion of objects by describing the forces acting on them	7 forces and the force of gravity 8 simple machines
		<b>D.8.6</b> While conducting investigations, explain the motion of objects using concepts of speed, velocity, acceleration, friction, momentum, and changes over time, among others, and apply these concepts and explanations to real-life situations outside the classroom	7 forces and the force of gravity 8 simple machines
		<b>D.8.7</b> While conducting investigations of common physical and chemical interactions occurring in the laboratory and the outside world, use commonly accepted definitions of energy and the idea of energy conservation	8 simple machines
	Transfer of Energy	<b>D.8.8</b> Describe and investigate the properties of light, heat, gravity, radio waves, magnetic fields, electrical fields, and sound waves as they interact with material objects in common situations	7 forces and the force of gravity 9 energy: sound and light 10 energy: electricity and magnetism
		<b>D.8.9</b> Explain the behaviors of various forms of energy by using the models of energy transmission, both in the laboratory and in real-life situations in the outside world	
		<b>D.8.10</b> Explain how models of the atomic structure of matter have changed over time, including historical models and modern atomic theory	

<b>E.8 Earth and Space Science</b>	Structure of Earth System	<b>E.8.1</b> Using the science themes, explain and predict changes in major features of land, water, and atmospheric systems	20 geologic processes 21 atmosphere and weather 22 earth's water cycle
		<b>E.8.2</b> Describe underlying structures of the earth that cause changes in the earth's surface	20 geologic processes
		<b>E.8.3</b> Using the science themes during the process of investigation, describe climate, weather, ocean currents, soil movements and changes in the forces acting on the earth	20 geologic processes 21 atmosphere and weather
		<b>E.8.4</b> Using the science themes, analyze the influence living organisms have had on the earth's systems, including their impact on the composition of the atmosphere and the weathering of rocks	18 history of life on earth 27 ecosystem changes 28 soils
	Earth's History	<b>E.8.5</b> Analyze the geologic and life history of the earth, including change over time, using various forms of scientific evidence	18 history of life on earth 20 geologic processes
	Earth in the Solar System	<b>E.8.6</b> Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources  <b>E.8.7</b> Describe the general structure of the solar system, galaxies, and the universe, explaining the nature of the evidence used to develop current models of the universe	29 agriculture and society 33 resource conservation
		<b>E.8.8</b> Using past and current models of the structure of the solar system, explain the daily, monthly, yearly, and long-term cycles of the earth, citing evidence gained from personal observation as well as evidence used by scientists	19 planet earth
<b>F.8 Life and Environmental Science</b>	Structure and Function in Living Things	<b>F.8.1</b> Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms	12 the respiratory/circulatory system 13 the nervous/endocrine system 14 the digestive/ excretory system 15 the musculoskeletal system 16 the reproductive system

		<b>F.8.2</b> Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments	17 species and the physical environment
		<b>F.8.3</b> Differentiate between single-celled and multiple-celled organisms (humans) through investigation, comparing the cell functions of specialized cells for each type of organism	
	Reproduction and Heredity	<b>F.8.4</b> Investigate and explain that heredity is comprised of the characteristic traits found in genes within the cell of an organism	17 species and the physical environment 18 history of life on earth
		<b>F.8.5</b> Show how different structures both reproduce and pass on characteristics of their group	
	Regulation and Behavior	<b>F.8.6</b> Understand that an organism is regulated both internally and externally	17 species and the physical environment
		<b>F.8.7</b> Understand that an organism's behavior evolves through adaptation to its environment	17 species and the physical environment
	Populations and Ecosystems	<b>F.8.8</b> Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet	
	Diversity and Adaptations of Organisms	<b>F.8.9</b> Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species	30 threatened and endangered species
		<b>F.8.10</b> Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends.	31 human population and the environment

<b>G.8 Science Applications</b>	<b>G.8 Science Applications</b>	<b>G.8.1</b> Identify and investigate the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need	
		<b>G.8.2</b> Explain how current scientific and technological discoveries have an influence on the work people do and how some of these discoveries also lead to new careers	
		<b>G.8.3</b> Illustrate the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life	4 science and society 5 technology
		<b>G.8.4</b> Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show how the design (or re-design) might work, including potential side-effects	6 technological design
		<b>G.8.5</b> Investigate a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction	36 environmental laws
		<b>G.8.6</b> Use current texts, encyclopedias, source books, computers, experts, the popular press, or other relevant sources to identify examples of how scientific discoveries have resulted in new technology	5 technology
		<b>G.8.7</b> Show evidence of how science and technology are interdependent, using some examples drawn from personally conducted investigations	5 technology
<b>H.8 Science in Social and Personal Perspectives</b>	<b>H.8 Science in Social and Personal Perspectives</b>	<b>H.8.1</b> Evaluate the scientific evidence used in various media (for example, television, radio, Internet, popular press, and scientific journals) to address a social issue, using criteria of accuracy, logic, bias, relevance of data, and credibility of sources	4 science and society

		<b>H.8.2</b> Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision	6 technological design
		<b>H.8.3</b> Understand the consequences of decisions affecting personal health and safety	1 tools of science 34 environmental health