



Alignment Document
State of Florida and Aventa Learning

Science 6

Strand	Common Curriculum Goal	Standard	Lesson Name
SC.A The Nature of Matter	SC.A.1.3.1 The student identifies various ways in which substances differ (e.g., mass, volume, shape, density, texture, and reaction to temperature and light).	SC.A.1.3.1.1 knows ways in which substances differ (for example, mass, volume, shape, density, texture, reaction to heat and light).	
	SC.A.1.3.2 The student understands the difference between weight and mass.	SC.A.1.3.2.1 understands that mass is the amount of material in an object.	Lesson 5: Matter and the Periodic Table
	SC.A.1.3.3 The student knows that temperature measures the average energy of motion of the particles that make up the substance.	SC.A.1.3.3.1 understands that increasing the average motion of the particles in a substance increases the temperature of the substance.	
		SC.A.1.3.3.2 understands that decreasing the average motion of the particles decreases the temperature.	
		SC.A.1.3.3.3 determines the effect of a change in temperature on common materials (for example, butter, food coloring in water, isopropyl alcohol).	

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	SC.A.1.3.4 The student knows that atoms in solids are close together and do not move around easily; in liquids, atoms tend to move farther apart; in gas, atoms are quite far apart and move around freely.	SC.A.1.3.4.1 understands that matter may exist as solids, liquids, and gases.	Lesson 7: States of matter
		SC.A.1.3.4.2 knows that molecular motion increases from solids to liquids to gases.	Lesson 7: States of matter
	SC.A.1.3.5 The student knows the difference between a physical change in a substance (e.g., altering the shape, form, volume, or density) and a chemical change (i.e., producing new substances with different characteristics).	SC.A.1.3.5.1 knows the physical properties of various substances.	Lesson 8: Chemical and Physical Properties
		SC.A.1.3.5.2 knows the chemical properties of various substances.	Lesson 8: Chemical and Physical Properties
		SC.A.1.3.5.3 knows the difference between a physical and chemical change.	Lesson 8: Chemical and Physical Properties
	SC.A.1.3.6 The student knows that equal volumes of different substances may have different masses.	SC.A.1.3.6.1 knows that equal volumes of different substances may have different masses.	
		SC.A.1.3.6.2 uses the water displacement method to find the volume of common items (for example, rocks, nails, marbles).	
	SC.A.2.3.1 The student describes and compares the properties of particles and waves.	SC.A.2.3.1.1 understands that particles and objects may be either neutral or have a positive or negative charge.	

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		SC.A.2.3.1.2 knows the properties of waves (frequency, amplitude, wavelength).	
		SC.A.2.3.1.3 knows how to compare and contrast the properties of particles and waves.	
	SC.A.2.3.2 The student knows the general properties of the atom (a massive nucleus of neutral neutrons and positive protons surrounded by a cloud of negative electrons) and accepts that single atoms are not visible.	SC.A.2.3.2.1 understands the behavior of charged particles as evidenced by simple static electricity experiments.	
		SC.A.2.3.2.2 determines the charge of an ion by comparing the number of protons and electrons associated with it.	
	SC.A.2.3.3 The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy.	SC.A.2.3.3.1 knows forms of radiant energy and their applications to everyday life (for example, visible, microwave, radio).	
SC.B Energy	SC.B.1.3.1 The student identifies forms of energy and explains that they can be measured and compared.	SC.B.1.3.1.1 knows different types of energy and the units used to quantify the energy (for example, solar, nuclear, electrical, chemical).	Lesson 14: Intro to Energy Lesson 15: Energy Sources and Conversions
		SC.B.1.3.1.2 understands that energy can be converted from one form to another (for example, solar energy to heat energy).	Lesson 15: Energy sources and conversions

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	SC.B.1.3.2 The student knows that energy cannot be created or destroyed, but only changed from one form to another.	SC.B.1.3.2.1 understands that energy can be changed in form.	Lesson 15: Energy sources and conversions
		SC.B.1.3.2.2 uses examples to demonstrate common energy transformations.	Lesson 15: Energy sources and conversions
	SC.B.1.3.3 The student knows the various forms in which energy comes to Earth from the Sun (e.g., visible light, infrared, and microwave).	SC.B.1.3.3.1 knows types of radiant energy that come to Earth from the Sun (for example, visible, infrared, ultraviolet).	
		SC.B.1.3.3.2 knows the effect of sunlight on photosynthetic pigments.	
	SC.B.2.3.1 The student knows that most events in the universe (e.g., weather changes, moving cars, and the transfer of a nervous impulse in the human body) involve some form of energy transfer and that these changes almost always increase the total disorder of the system and its surroundings, reducing the amount of useful energy.	SC.B.2.3.1.1 understands that energy moves through systems.	Lesson 14: Intro to Energy Lesson 15: Energy Sources and Conversions
SC.C Force and Motion	SC.C.1.3.1 The student knows that the motion of an object can be described by its position, direction of motion, and speed.	SC.C.1.3.1.1 knows that a change in motion and position can be measured.	Lesson 11: Force, Motion, and Acceleration

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		SC.C.1.3.1.2 knows ways to measure time intervals.	Lesson 11: Force, Motion, and Acceleration
		SC.C.1.3.1.3 knows ways to estimate speed.	Lesson 11: Force, Motion, and Acceleration
	SC.C.1.3.2 The student knows that vibrations in materials set up wave disturbances that spread away from the source (e.g., sound and earthquake waves).	SC.C.1.3.2.1 uses common items (a pebble dropped in water, a marble dropped in sand) to demonstrate that vibrations in materials set up visible disturbances that spread away from a force in all directions.	
	SC.C.2.3.3 The student knows that if more than one force acts on an object, then the forces can reinforce or cancel each other, depending on their direction and magnitude.	SC.C.2.3.3.1 recognizes the result of several forces acting on an object.	Lesson 12: Newton's Laws: Relationship between force and motion
		SC.C.2.3.3.2 knows that the net force is dependent on the direction and magnitude of forces acting on a body.	Lesson 11: Force, Motion, and Acceleration
	SC.C.2.3.4 The student knows that simple machines can be used to change the direction or size of a force.	SC.C.2.3.4.1 knows uses of simple machines.	

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		SC.C.2.3.4.2 knows advantages and disadvantages of simple machines.	
	SC.C.2.3.5 The student understands that an object in motion will continue at a constant speed and in a straight line until acted upon by a force and that an object at rest will remain at rest until acted upon by a force.	SC.C.2.3.5.1 knows that an object at rest will stay at rest unless acted upon by an outside force.	Lesson 12: Newton's Laws: Relationship between force and motion
		SC.C.2.3.5.2 knows objects in motion will remain in motion unless acted upon by an outside force.	Lesson 11: Force, Motion, and Acceleration
	SC.C.2.3.7 The student knows that gravity is a universal force that every mass exerts on every other mass.	SC.C.2.3.7.1 knows that gravity is a force that causes an object to fall to the ground.	
		SC.C.2.3.7.2 knows that gravity causes an object to have weight.	Lesson 5: Matter and the Periodic Table
SC.D Processes that Shape the Earth	SC.D.1.3.1 The student knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers.	SC.D.1.3.1.1 understands that the surface of the Earth is constantly changing due to mechanical and chemical action.	
	SC.D.1.3.2 The student knows that over the whole Earth, organisms are growing, dying, and decaying as new organisms are produced by the old ones.	SC.D.1.3.2.1 knows that sedimentary rock may contain fossils of plants, animals, and microbes.	

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		SC.D.1.3.2.2 knows ways the systems of Earth change over time and predicts the causes of the change.	
	SC.D.1.3.3 The student knows how conditions that exist in one system influence the conditions that exist in other systems.	SC.D.1.3.3.1 knows that different events on the Earth change features on Earth (for example, hurricanes, earthquakes, volcanoes).	Lesson 30: Intro to Earth Science
	SC.D.1.3.4 The student knows the ways in which plants and animals reshape the landscape (e.g., bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).	SC.D.1.3.4.1 records seasonal changes of the landscape in a specific area over time.	
		SC.D.1.3.4.2 knows ways that plants and animals reconstitute the soil and alter the landscape.	
		SC.D.1.3.4.3 understands the processes that prevent or cause erosion.	
	SC.D.1.3.5 The student understands concepts of time and size relating to the interaction of Earth's processes (e.g., lightning striking in a split second as opposed to the shifting of the Earth's plates altering the landscape, distance between atoms measured in Angstrom units as opposed to distance between stars measured in light-years).	SC.D.1.3.5.1 understands the range of time over which natural events occur (for example, lightning in seconds, mountains form over many years).	Lesson 30: Intro to Earth Science Lesson 32: Earth's Atmosphere

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	SC.D.2.3.1 The student understands that quality of life is relevant to personal experience.	SC.D.2.3.1.1 knows that a change in the environment affects the quality of life in different ways for different organisms.	Lesson 21: Interactions in the Environment
	SC.D.2.3.2 The student knows the positive and negative consequences of human action on the Earth's systems.	SC.D.2.3.2.1 knows positive and negative consequences of human action on the Earth's systems (for example, farming, transportation, mining, manufacturing).	
SC.E Earth and Space	SC.E.1.3.1 The student understands the vast size of our Solar System and the relationship of the planets and their satellites.	SC.E.1.3.1.1 knows the relationship between tides on Earth and the positions of the Moon, the Sun, and Earth.	
		SC.E.1.3.1.2 knows the relative sizes of the planets, Sun, Solar System, galaxy, and universe.	Lesson 34: The Solar System
		SC.E.1.3.1.3 understands the positions of the Earth, Moon, and Sun during a solar eclipse and a lunar eclipse.	
	SC.E.1.3.3 The student understands that our Sun is one of many stars in our galaxy.	SC.E.1.3.3.1 understands that our Sun is one of many stars in our galaxy.	Lesson 34: The Solar System
SC.F Processes of Life	SC.F.1.3.1 The student understands that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.	SC.F.1.3.1.1 knows ways systems in an organism function and interact (for example, the muscular system provides the ability to move and is supported by the skeletal system when one is present).	
		SC.F.1.3.1.2 understands the differences between growth and maintenance.	

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	SC.F.1.3.2 The student knows that the structural basis of most organisms is the cell and most organisms are single cells, while some, including humans, are multicellular.	SC.F.1.3.2.1 knows that the cell is the basic unit of structure and function in all living things.	Lesson 24: Cell Theory
		SC.F.1.3.2.2 knows that there is great diversity among unicellular organisms.	
		SC.F.1.3.2.3 knows the basic processes that occur in cells.	Lesson 25: Cell function and organelles
	SC.F.1.3.3 The student knows that in multicellular organisms cells grow and divide to make more cells in order to form and repair various organs and tissues.	SC.F.1.3.3.1 knows that in multicellular organisms cells grow and divide to form and repair various organs and tissues.	
		SC.F.1.3.3.2 understands cells reproduce to ensure the growth and repair of tissue.	
	SC.F.1.3.4 The student knows that the levels of structural organization for function in living things include cells, tissues, organs, systems, and organisms.	SC.F.1.3.4.1 knows that the levels of structural organization in living things include cells, tissues, organs, systems, and organisms.	Lesson 27: Organization of Living Things
	SC.F.1.3.5 The student explains how the life functions of organisms are related to what occurs within the cell.	SC.F.1.3.5.1 understands that there are structures with particular functions that are unique to certain types of cells (for example, plant cells have cell walls, animal cells do not).	Lesson 25: Cell function and organelles
		SC.F.1.3.5.2 understands the process of osmosis and diffusion.	

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		SC.F.1.3.5.3 knows the essential functions in cells.	Lesson 25: Cell function and organelles
	SC.F.1.3.6 The student knows that the cells with similar functions have similar structures, whereas those with different structures have different functions.	SC.F.1.3.6.1 uses or constructs models of plant and animal cells to identify the basic structures of each.	
		SC.F.1.3.6.2 knows the functions of structures in plant and animal cells.	Lesson 25: Cell function and organelles
	SC.F.1.3.7 The student knows that behavior is a response to the environment and influences growth, development, maintenance, and reproduction.	SC.F.1.3.7.1 knows that behavior is a response to the environment.	Lesson 29: Stimulus and response in living things
	SC.F.2.3.3 The student knows that generally organisms in a population live long enough to reproduce because they have survival characteristics.	SC.F.2.3.3.1 knows adaptations that aid in species survival (for example, protective coloration, hibernation, delayed implantation).	
SC.G How Living Things Interact with Their Environment	SC.G.1.3.3 The student understands that the classification of living things is based on a given set of criteria and is a tool for understanding biodiversity and interrelationships.	SC.G.1.3.3.1 understands that living things are sorted for convenience and identification.	Lesson 27: Organization of Living Things Lesson 28: Dichotomous Keys

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		SC.G.1.3.3.2 understands that the structural characteristics among animals and plants are more alike as organisms are closer to the same kind or species within a classification level.	
	SC.G.1.3.4 The student knows that the interactions of organisms with each other and with the non-living parts of their environments result in the flow of energy and the cycling of matter throughout the system.	SC.G.1.3.4.1 knows the nonliving (abiotic) and living (biotic) aspects of an ecosystem.	Lesson 21: Interactions in the Environment
		SC.G.1.3.4.2 understands how the components of an ecosystem interact.	Lesson 21: Interactions in the Environment
		SC.G.1.3.4.3 understands that food chains show specific trophic relationships and food webs are used to illustrate interrelationships of trophic levels.	Lesson 20: Food webs and food chains
	SC.G.2.3.1 The student knows that some resources are renewable and others are nonrenewable.	SC.G.2.3.1.1 knows renewable and nonrenewable energy sources.	Lesson 16: Renewable and non-renewable energy sources
	SC.G.2.3.2 The student knows that all biotic and abiotic factors are interrelated and that if one factor is changed or removed, it impacts the availability of other resources within the system.	SC.G.2.3.2.1 distinguishes between biotic and abiotic factors in the environment.	Lesson 21: Interactions in the Environment

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	SC.G.2.3.3 The student knows that a brief change in the limited resources of an ecosystem may alter the size of a population or the average size of individual organisms and that long-term change may result in the elimination of animal and plant populations inhabiting the Earth.	SC.G.2.3.3.1 understands that changes in the environment may influence the size, number, or diversity of organisms in an area.	Lesson 21: Interactions in the Environment
	SC.G.2.3.4 The student understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems.	SC.G.2.3.4.1 understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in the ecosystem.	Lesson 21: Interactions in the Environment
SC.H The Nature of Science	SC.H.1.3.1 The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.	SC.H.1.3.1.1 knows ways scientific theories may change with new discoveries.	Lesson 1: Intro to the scientific method Lesson 3: Analyze results a draw conclusion
		SC.H.1.3.1.2 understands that new technology may lead to new discoveries.	
	SC.H.1.3.2 The student knows that the study of the events that led scientists to discoveries can provide information about the inquiry process and its effects.	SC.H.1.3.2.1 uses systematic, scientific processes to develop and test hypotheses.	Lesson 4: Scientific Method Unit Project
		SC.H.1.3.2.2 knows that the scientific method is a process that involves a logical and empirical but flexible approach to problem solving.	Lesson 1: Intro to the scientific method

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	SC.H.1.3.3 The student knows that science disciplines differ from one another in topic, techniques, and outcomes, but that they share a common purpose, philosophy, and enterprise.	SC.H.1.3.3.1 knows that the disciplines of science provide in depth study and information that becomes available for all to share and use.	
	SC.H.1.3.4 The student knows that accurate record keeping, openness, and replication are essential to maintaining an investigator's credibility with other scientists and society.	SC.H.1.3.4.1 knows that accurate record keeping, openness, and replication are essential to maintaining an investigator's credibility with other scientists and society.	Lesson 1: Intro to the scientific method Lesson 2: Design a controlled experiment Lesson 3: Analyze results and draw a conclusion
		SC.H.1.3.4.2 uses accurate records, openness, and replication of experiments to ensure credibility.	Lesson 4: Scientific Method Unit Project
	SC.H.1.3.5 The student knows that a change in one or more variables may alter the outcome of an investigation.	SC.H.1.3.5.1 understands the importance of the control in an experiment.	Lesson 2: Design a controlled experiment
		SC.H.1.3.5.2 knows how to identify the independent and dependent variables in an experiment.	Lesson 2: Design a controlled experiment

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		SC.H.1.3.5.3 uses appropriate experimental design, with consideration for rules, time, and materials required to solve a problem.	Lesson 4: Scientific Method Unit Project
	SC.H.1.3.6 The student recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations.	SC.H.1.3.6.1 knows selected scientists and their accomplishments.	Lesson 10: Isaac Newton
		SC.H.1.3.6.2 knows that scientists who make contributions to knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals.	
	SC.H.1.3.7 The student knows that when similar investigations give different results, the scientific challenge is to verify whether the differences are significant by further study.	SC.H.1.3.7.1 uses criteria necessary to determine the veracity of the data.	Lesson 3: Analyze results and draw a conclusion
	SC.H.2.3.1 The student recognizes that patterns exist within and across systems.	SC.H.2.3.1.1 knows that most natural events occur in patterns.	
	SC.H.3.3.1 The student knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.	SC.H.3.3.1.1 knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.	

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		SC.H.3.3.1.2 uses appropriate procedures for safety in the classroom, home, and community.	Lesson 4: Scientific Method Unit Project Lesson 18: Energy unit project
	SC.H.3.3.2 The student knows that special care must be taken in using animals in scientific research.	SC.H.3.3.2.1 knows that appropriate care, safe practices, and ethical treatment are necessary when animals are involved in scientific research.	
	SC.H.3.3.3 The student knows that in research involving human subjects, the ethics of science require that potential subjects be fully informed about the risks and benefits associated with the research and of their right to refuse to participate.	SC.H.3.3.3.1 knows that in research involving human subjects, the ethics of science require that potential subjects be fully informed about the risks and benefits associated with the research and of their right to refuse to participate.	
	SC.H.3.3.4 The student knows that technological design should require taking into account constraints such as natural laws, the properties of the materials used, and economic, political, social, ethical, and aesthetic values.	SC.H.3.3.4.1 knows some ways that scientific discoveries create new technologies that affect society (for example, geographic information systems, gene mapping, electronic communication).	
	SC.H.3.3.5 The student understands that contributions to the advancement of science, mathematics, and technology have been made by different kinds of people, in different cultures, at different times and are an intrinsic part of the development of human culture.	SC.H.3.3.5.1 knows that the advancement of science, mathematics, and technology is ongoing and influenced by a diverse population of scientists.	

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	<p>SC.H.3.3.6 The student knows that no matter who does science and mathematics or invents things, or when or where they do it, the knowledge and technology that result can eventually become available to everyone.</p>	<p>SC.H.3.3.6.1 knows that scientific contributions may result in diverse technological products.</p>	
	<p>SC.H.3.3.7 The student knows that computers speed up and extend people's ability to collect, sort, and analyze data; prepare research reports; and share data and ideas with others.</p>	<p>SC.H.3.3.7.1 uses a computer to collect, analyze, and report scientific findings.</p>	