



AAC Science Scope and Sequence

The AAC Science Curriculum presents students with hands-on experiences and concepts which help them to understand the world around them. The basis is from the Next Generation Science Standards (NGSS) from K-12 and the California Preschool Learning Foundations (KG1 & PK). The science coursework is combined with other subject areas, whenever possible, to demonstrate to students that science is a part of everything. In high school, students will have choices in grades 11 and 12, depending on whether they take IB or not. In 12th grade students who qualify can take AP Environmental Science and IB students can take IB Biology and/or IB Physics.

	12th Grade Modern Science			
Title	Ethics and Astronomy	General Biology Overview	Physical Science Overview	Health and Nutrition
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	- Analyze modern issues from a scientific and ethical point of view - Create arguments based on research on various lifespan of celestial bodies - Present (orally and written) arguments and defend them as well - Judge others' arguments based on their merits and presentation - Analyze data from astronomy and come to conclusions - Present information about a topic in astronomy - Make and explain predictions based on current models in astronomy - Understand basic astronomy and why it is worthwhile to pursue - Investigate the orbital motion	- Understand and be able to explain (verbally and in writing) the basic concepts of genetics and evolution. - Solve genetics problems using a Punnett Square and make accurate predictions for offspring based on parental geno and phenotypes - Explain the factors that drive evolution and the evidence which supports it. - Compare and contrast evolution with creationism and other beliefs. - Identify the basic organelles of a cell and explain their function. - Understand the basic tenets of life - Create a model of a plant or animal cell that accurately represents the features. - Explain the movements of	- Understand the basic ideas in physics, including Newton's three laws and the fundamental vocabulary. - Solve simple physics problems and make accurate predictions on movement - Calculate items using basic physics - Compare and contrast Newtonian's physics to the theories of Einstein - Identify the parts of an atom and understand the structure - Use the periodic table, at least the first three rows - Balance chemical equations - Differentiate among the states of matter and the properties of each - Understand basic chemical terms	- Analyze personal health characteristics and suggest ways to improve - Compare and contrast various nutritional choices for benefits - Understand the importance of exercise and sleep on one's health - Present about health to a group of ES students - Plan a healthy diet built around best choices and the most current information - Debate the benefits of different foods and/or different types of exercise on one's health - Understand the importance of reducing stress, building positive relationships and avoiding alcohol and drugs on one's health

	of satellite	continental and Oceanic crust - Explore structure of the early earth		
	12th Grade AP Environmental Science			
Title	Environmental Science, Global Change and Biodiversity	Ecosystems, Populations, Energy	Air Pollution, Human Health Earth's Resources and Use	Waste, Water Pollution, and Citizen Science
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	- Describe environmental concepts and processes. - Identify a testable hypothesis or scientific question for an investigation. - Identify a research method, design, and/or measure used. - Describe patterns or trends in data. - Determine an approach or method aligned with the problem to be solved. - Describe disadvantages, advantages, or unintended consequences for potential solutions.	- Describe characteristics of an environmental concept, process, or model represented visually. - Explain relationships between different characteristics of environmental concepts, processes, or models represented visually. - Describe relationships among variables in data represented. - Apply appropriate mathematical relationships to solve a problem, with work shown (e.g., dimensional analysis). - Use data and evidence to support a potential solution.	- Identify the author's claim. - Explain how environmental concepts and processes represented visually relate to broader environmental issues. - Describe an aspect of a research method, design, and/or measure used. - Explain patterns and trends in data to draw conclusions. - Calculate an accurate numeric answer with appropriate units. - Make a claim that proposes a solution to an environmental problem in an applied context.	- Explain environmental concepts, processes, or models in applied contexts. - Interpret experimental data and results in relation to a given hypothesis. - Describe potential responses or approaches to environmental problems. - Justify a proposed solution, by explaining potential advantages.
	11th Grade Physics II		11th Grade Chemistry II	
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4

	Electricity and Magnetism	Waves and Electromagnetic Radiation		
Content & Skills	Gravitational and Electric Fields - Draw and interpret electric field with relation to magnetic fields - Verify Newton laws, and coulomb's law in the application of electrostatic forces between objects - Determine the universal gravitational force on the planetary circular motion Circuits - Apply right hand rules to current traveling through a wire and on particles of positive and negative charges. - Use scientific equipment to measure current and voltage in a circuit. - Measure uncertainties in scientific equipment. - Explain electric induction - Calculate power in terms of energy and time - Interpret graphs of voltage against current. - Calculate equivalent resistances in circuits. - Calculate and explain percentage error in experimentation.	Waves - Interpret different waveforms and their various characteristics - Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. - Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. - Sketch and interpret the wavelength, time, frequency, and the wave speeds in the displacement time graph - Predict the behavior of particulate matter. - Discuss the perceived behaviour of waves in forms of light and sound. - Determine the speed of sound in air. - Investigate digital transmission processes and its impact on storing information. - Calculate and explain percentage error in experimentation. Particulate Growth and Decay - Explain radiation and	- Grade 10 review - Bond strength - Electron configuration - Red/Ox - Calculate percent yield - Use ratios - Use algebraic equations for calculations - Manipulate equations to calculate different variables - Use diagrams (mole map) to help in solving problems - Use diagrams to help explain how a problem was solved - Acids and bases - titrations	- Molecular Shape and the VSEPR Theory

		decaying processes of objects through time		
Required Lab Activities	- Circuit lab - Induction lab/DC motor experiment - Coulomb's Law with 2 Charged Objects - oPhysics Simulation	- Discovering the Speed of Sound in Air using oscilloscope apparatus - Simulating radioactive decay with dice Lab.	- Factors affecting rate of reaction lab - Percent Yield lab - Acid Base Titration Lab	-
	10th Grade Physics I		10th Grade Chemistry I	
Title	Forces and Motions Interactions	Energy	Basic Skills of Chemistry	
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	Kinematics - Obtaining precision and accuracy in scientific reporting by using scientific notation and significant figures. - Scalars and vector addition and resolution. - Draw effective diagrams. - Forming and solving problems with displacement, velocity and acceleration. - Solve kinematic problems using one- and two-dimensional motion formulas. - Analyze visual representations of one- and two- dimensional motion. - Consider and interpret uncertainties in	Impuls - Define the effect of momentum and impulse. - Verify momentum conservation. - Carry out an inquiry based practical using scientific method. - Formulate a research question. - Write the background information. - Use evaluation, and limitations for the investigation such as error analysis, and uncertainty calculations. - Analyze and interpret data. - Conclude and communicate the findings of the research question. Energy - Describe and explain the	- Lab safety - Interpret and draw line graphs - Use evidence from line graphs to support an argument - Use evidence from a diagram to support an argument - Nature of Science and particulate nature of matter - Atomic structure - Periodic table (groups, periods, radii, reactivity, properties etc... - isotopes - Bohr diagrams - Shorthand electronic configuration - Ions - Ionization energy and electron affinity	- Ionic and covalent compounds and metallic bonds and alloys - Using the periodic table to predict how atoms will react - Nomenclature - Writing chemical formulas - Balance equations - Reaction types - Nuclear chemistry

	measurements. - Calculate percentage error in experimentation. Forces - Verify Newton's 3 laws with research and experimentation. - Develop scientific writing skills through lab reports. - Perform and report scientific method in formal writing. - Draw a free body diagram. - Represent data in tabular and graphical form. - Mathematically analyse data. - Solve static and dynamic problems including: Gravitational force, Normal force, Spring force, Friction force, and Applied force. - Identify forces present in various situations.	exchange between potential energy and internal energy. - Determine the energy stored in a spring. - Observe and explain energy conversions in the real world. - Compare the power developed when different work is done at different rates. - Verify the gas laws. - Define thermal equilibrium, thermal expansion and temperature - Perform and report scientific method in formal writing. - Calculate percentage error in experimentation.	- Lewis diagrams	
Required Lab Activities	- Lab Safety Demo - Free fall Lab pro - Sport Projectile motion - Measuring Forces using table force Apparatus	- Pendulum Lab - Spring Lab - Research project on energy conversion & conservation	- Reactivity series Lab (metals in HCl) - Types of reaction lab (single displacement, double displacement, decomposition, synthesis and combustion) - Rate of reaction lab -	- Conservation of mass lab - pH lab
	9th Grade Biology			

Title	Structure and Function	Matter and Energy in Organisms and Ecosystems	Interdependent Relationships in Ecosystems	Inheritance and Variation of Traits
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	- Draw a scale diagram - Use standard international units and convert between them (Tera all the way down to pico) - Measure length - Use scientific notation - Use a microscope - Draw labeled diagrams of observations - Calculate magnification - Calculate uncertainty in a measurement	- Use flow charts to describe processes - Create a model to describe processes - Interpret and draw data tables - Interpret and draw bar charts - Use evidence from bar charts to support an argument - Use evidence from articles to support an argument	- Interpret and draw line graphs - Use evidence from line graphs to support an argument	- Determine probability of a scenario occurring using tables - Convert between percentage and fractions - Use evidence from case studies to defend an argument (debate and essay)
Required Lab Activities	- DNA extraction lab - Letter “e” microscope lab - Biological drawing lab - Human cheek and onion skin cell lab - Mitosis activity lab	- Factors affecting photosynthesis lab - Types of macromolecule lab - Enzymes lab - Respiration of peas lab	- Lamb heart dissection - Heart rate and exercise lab	- Catch and release sampling lab - Evolution Case Study
8th Grade: Physical Science				
Title	Matter and its interactions	Energy	Forces and Interactions	Waves
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	- Draw labeled diagrams to support written responses - Make observations and inference - Determine if statements are observations or inference and justify the answer	- Draw and interpret bar graphs - Draw and interpret line graphs - Convert between SI units - Use formula triangles to rearrange equations - Use energy transfer diagrams to show the conservation of energy	- Draw and interpret line graphs - Convert between SI units - Use formula triangles to rearrange equations - Use energy transfer diagrams to show the conservation of	- Draw labeled diagrams to support written responses - Draw and interpret line graphs - Convert between SI units - Use formula triangles to rearrange equations

	- Identify control, dependent and independent variables - Write a hypothesis - Write a short summary of a scientific article - Organize data into a table - Write a conclusion for a lab activity - Measure mass, length and density	in a system - Plan an investigation including the variables, hypothesis, materials and method - Write a lab report including an introduction, hypothesis, variables, materials, method, observations and conclusion - Use evidence from research to support a written argument	energy in a system - Plan an investigation including the variables, hypothesis, materials and method - Write a lab report including an introduction, hypothesis, variables, materials, method, observations, conclusion and evaluation	- Use evidence from research to support a written argument in the form of an essay
Required Lab Activities	- Virtual lab on states of matter - Chemical reactions lab - Physical & Chemical properties lab	- Endo/Exo thermal reaction lab - Conservation of mass lab - Conservation of energy lab - Design hot and cold packs (Thermal energy lab)	- Tag and war lab (balanced & unbalanced forces) - Friction forces lab - Collision track lab - Electro-magnetic lab	- Wave sim lab - Research Project on wave communication
	7th Grade: Earth Science			
Title	Earth's Place in the Universe	Earth's Structure	Earth's Systems	Earth and Human Activity
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	- Draw labeled diagrams - Make labeled models - Draw flowcharts - Draw and label timelines - Differentiate between cause and effect - Differentiate between observation and inference	- Present evidence to support an argument - Use evidence to support an argument in a debate - Use evidence to support an argument in a short written report - Use the passive voice and academic language in written answers	- Use diagrams and flow charts to illustrate a point in a presentation - Use diagrams and flow charts to illustrate a point in a written report - Apply knowledge by describing hypothetical scenarios (example how would a hurricane form over Casa?)	- Use diagrams and flow charts to illustrate a point in a written report - Use evidence to support an argument in a short written report - Use the passive voice and academic language in written answers - Use evidence from research to write a point of view essay
Required Lab Activities	- Scale Modeling of Solar System - Case study of earth's	- Modeling different tectonic plates boundaries - Identifying various types of	- Making a cloud in a bottle - Convection, conduction	- Case study of global warming & environmental issues

	development	rock (compare between two igneous rocks types)	& radiation lab	- Case study Metal -Ore extraction
	6th Grade: Life Science & Health-Nutrition			
Title	Body systems & Nutrition (Plants and Animals)	Cells	Inheritance and Reproduction	Evolution
Quarter	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Content & Skills	- Making conclusions based on provided information - Identifying control, dependent and independent variables - Describing the scientific method - Following the scientific method - Write a simple lab report using a template (include conclusion)	- Draw and label diagrams - Determine the function of a structure based evidence and justify the answer - Present research information to justify a conclusion	- Draw and label diagrams - Draw and label flow charts - Use information from charts to support a written argument - Respond to hypothetical scenarios using evidence to support the response.	- Interpreting bar graphs - Drawing bar graphs - Reading fractions and percentages (ratios) - Comparing and contrasting different evidence to support an argument in a written form - Use numerical data to support a written argument
Required Lab Activities	- Digestion of Starches - Virtual Lab factors affecting photosynthesis	- Microscope lab - Plant and animal microscope lab	- Flower dissection lab (comparing different flower types) - DNA Extraction Lab	- Lab report on Fossil records - Case study of evolutionary processes
	5th Grade Science			
	<u>Engineering Design</u> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.			

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	Matter and Energy in Organisms and Ecosystems (Web of Life) Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. Support an argument that plants get the materials they need for growth chiefly from air and water. Graph points on the coordinate plane to solve real-world and mathematical problems. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment	Earth's Systems (Watery Planet) Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. Understand volume and relate volume to multiplication and division.	Space Systems: Stars and the Solar System Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. Support an argument that the gravitational force exerted by Earth on objects is directed down	Chemical Magic (Structures and Properties of Matter) Develop a model to describe that matter is made of particles too small to be seen. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. Make observations and measurements to identify materials based on their properties. Conduct an investigation to determine whether the mixing of two or more substances results in new substances
	4th Grade Science			
	<u>Engineering Design</u> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.			

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	Human Body Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	Animal and Plant Adaptations Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	The Earth's Systems: The Birth of Rocks Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. Analyze and interpret data from maps to describe patterns of Earth's features. Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans	Waves of Sound & Energizing Everything Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. Generate and compare multiple solutions that use patterns to transfer information. Use evidence to construct an explanation relating the speed of an object to the energy of that object. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. Ask questions and predict outcomes about the changes in energy that occur when objects collide. Apply scientific ideas to design, test, and refine a device that converts energy from one form to

				another.
	3rd Grade Science			
	<u>Engineering Design</u> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	Inheritance and Variation of Traits: Life Cycles and Traits Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. Use evidence to support the explanation that traits can be influenced by the environment.	Fates of Traits Construct an argument that some animals form groups that help members survive. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some	Forces, Motion and Magnets Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. Define a simple design problem that can be solved by applying scientific ideas about magnets.	Stormy Skies Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. Obtain and combine information to describe climates in different regions of the world Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

		cannot survive at all. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.		
	2nd Grade Science			
	<u>Engineering Design</u> K-2-ETS1 Ask questions, make observations, gather information about a situation people want to change to define a simple problem that can be solved through the development of a new improved object or tool. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	Structures and Properties of Matter Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.	Animal Biodiversity Make observations of plants and animals to compare the diversity of life in different habitats. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. Develop a simple sketch, drawing, or physical model to illustrate how	Plant Adaptations Plan and conduct an investigation to determine if plants need sunlight and water to grow. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. Make observations of plants and animals to compare the diversity of life in different habitats.	Earth's Systems: Processes that Shape the Earth Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. Develop a model to represent the shapes and kinds of land and bodies of water in an area. Obtain information to identify where water is found on Earth and that it can be solid or liquid.

	Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	the shape of an object helps it function as needed to solve a given problem. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.		
	1st Grade Science			
	<u>Engineering Design</u> K-2-ETS1 Ask questions, make observations, gather information about a situation people want to change to define a simple problem that can be solved through the development of a new improved object or tool. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	Waves: Light and Sound Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. Make observations to construct an evidence-based account that objects can be seen only when	Structure, Function, and Information Processing *Focus on Plants Use materials to design a solution to a human problem by mimicking how plants use their external parts to help them survive, grow, and meet their needs.	Structure, Function, and Information Processing *Focus on Animals Use materials to design a solution to a human problem by mimicking how animals use their external parts to help them survive, grow, and meet their needs.	Space Systems: Patterns and Cycles Use observations of the sun, moon, and stars to describe patterns that can be predicted. Make observations at different times of year to relate the amount of daylight to the time of year.

	illuminated. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. Make observations to construct an evidence-based account that young plants are like, but not exactly like, their parents.	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. Make observations to construct an evidence-based account that young animals are like, but not exactly like, their parents.	
	Kindergarten (KG2) Science			
	<u>Engineering Design</u> K-2-ETS1 Ask questions, make observations, gather information about a situation people want to change to define a simple problem that can be solved through the development of a new improved object or tool. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	Weather and Climate Make observations to determine the effect of sunlight on Earth's surface. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment *Focus on Habitats and animal/plant relationships in those habitats Use observations to describe patterns of what plants and animals (including humans) need to survive.	Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment *Focus on adaptation of animals/plants in their environment. *Focus on human impact on habitats Use a model to represent the relationship between the needs	Forces and Interactions: Pushes and Pulls Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. Analyze data to determine if a design solution works as intended to change the speed or

	Use and share observations of local weather conditions to describe patterns over time. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.	of different plants or animals (including humans) and the places they live. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	direction of an object with a push or a pull.
	Kindergarten (KG1) Science			
	<u>Engineering Design</u> K-2-ETS1 Ask questions, make observations, gather information about a situation people want to change to define a simple problem that can be solved through the development of a new improved object or tool. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	<u>Life Science</u> 1.4 Indicate knowledge of the difference between animate and inanimate objects, providing greater detail, and recognize that living things (humans, animals, and plants) undergo biological processes such as growth, illness, healing, and dying. 1.2 Indicate greater knowledge of body parts and processes	<u>Life Science</u> 1.3 Recognize that living things have habitats in different environments suited to their unique needs. 1.1 Identify characteristics of a greater variety of animals and plants and demonstrate an increased ability to categorize them. 2.1 Observe and explore growth in humans, animals, and plants and	<u>Earth Science</u> 1.1 Demonstrate increased ability to investigate and compare characteristics (size, weight, shape, color, texture) of earth materials such as sand, rocks, soil, water, and air. 2.1 Demonstrate an increased ability to observe and describe natural objects in the sky and to notice patterns of movement and apparent changes in the sun and	<u>Physical Science</u> 1.1 Demonstrate increased ability to observe, investigate, and describe in greater detail the characteristics and physical properties of objects and of solid and nonsolid materials (size, weight, shape, color, texture, and sound). 2.1 Demonstrate an increased awareness that objects and materials can change in various

	(e.g., eating, sleeping, breathing, walking) in humans and other animals. 2.2 Develop a greater understanding of the basic needs of humans, animals, and plants (e.g., food, water, sunshine, shelter). <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and an increased ability raise questions about objects and events in their environment. 1.2 Observe objects and events in the environment and describe them in greater detail. 1.4 Compare and contrast objects and events and begin to describe similarities and differences in greater details. 1.5 Demonstrate an increased ability to make predictions and check them (eg, may make more complex predictions, offer ways to test predictions, and discuss why predictions were correct or incorrect.) 1.6 Demonstrate an increased ability to make inferences and form generalizations based on evidence.	demonstrate an increased understanding that living things change as they grow and go through transformations related to the life cycle (for example, from a caterpillar to butterfly). <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and an increased ability raise questions about objects and events in their environment. 1.2 Observe objects and events in the environment and describe them in greater detail. 1.4 Compare and contrast objects and events and begin to describe similarities and differences in greater details. 1.5 Demonstrate an increased ability to make predictions and check them (eg, may make more complex predictions, offer ways to test predictions, and discuss why predictions were correct or incorrect.) 1.6 Demonstrate an increased ability to make inferences and form generalizations based on evidence.	the moon. 2.2 Demonstrate an increased ability to observe, describe, and discuss changes in weather. 2.3 Demonstrate an increased ability to notice and describe the effects of weather and seasonal changes on their own lives and on plants and animals. 2.4 Demonstrate an increased awareness and the ability to discuss in simple terms how to care for the environment, and participate in activities related to its care. <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and an increased ability raise questions about objects and events in their environment. 1.2 Observe objects and events in the environment and describe them in greater detail. 1.4 Compare and contrast objects and events and begin to describe similarities and differences in greater detail. 1.5 Demonstrate an increased ability to make predictions and check them (eg, may make more complex predictions, offer ways	ways. Explore and describe in greater detail changes in objects and materials (rearrangement of parts; change in color, shape, texture, form, and temperature). 2.2 Demonstrate an increased ability to observe and describe in greater detail the motion of objects (in terms of speed, direction, the ways things move), and to explore the effect of own actions on the motion of objects, including changes in speed and direction. <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and an increased ability raise questions about objects and events in their environment. 1.3 Identify and use a greater variety of observation and measurement tools. May spontaneously use an appropriate tool, though may still need adult support. 1.4 Compare and contrast objects and events and begin to describe similarities and differences in greater detail. 1.5 Demonstrate an increased ability to make predictions and check them (eg, may make more complex predictions, offer ways
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			to test predictions, and discuss why predictions were correct or incorrect.) 1.6 Demonstrate an increased ability to make inferences and form generalizations based on evidence.	to test predictions, and discuss why predictions were correct or incorrect.) 1.6 Demonstrate an increased ability to make inferences and form generalizations based on evidence.
	Pre-Kindergarten Science			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4

	<u>Life Science</u> 1.4 Indicate knowledge of the difference between animate objects (animals, people) and inanimate objects. For example, expect animate objects to initiate movement and to have different insides than inanimate objects. 1.2 Begin to indicate knowledge of body parts and processes (e.g., eating, sleeping, breathing, walking) in humans and other animals. 2.2 Recognize that animals and plants require care and begin to associate feeding and watering with the growth of humans, animals, and plants. <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and raise simple questions about objects and events in their environment. 1.2 Observe objects and events in the environment and describe them. 1.4 Compare and contrast objects and events and begin to describe similarities and	<u>Life Science</u> 1.3 Identify the habitats of people and familiar animals and plants in the environment and begin to realize that living things have habitats in different environments. 1.1 Identify characteristics of a variety of animals and plants, including appearance (inside and outside) and behavior, and begin to categorize them 2.1 Observe and explore growth and changes in humans, animals, and plants and demonstrate an understanding that living things change over time in size and in other capacities as they grow. <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and raise simple questions about objects and events in their environment. 1.2 Observe objects and events in the environment and describe them. 1.4 Compare and contrast objects and events and begin to describe similarities and differences. 1.5 Make predictions and check them, with adult support, through	<u>Earth Science</u> 1.1 Investigate characteristics (size, weight, shape, color, texture) of earth materials such as sand, rocks, soil, water, and air. 2.1 Observe and describe natural objects in the sky (sun, moon, stars, clouds) and how they appear to move and change. 2.2 Notice and describe changes in weather. 2.3 Begin to notice the effects of weather and seasonal changes on their own lives and on plants and animals. 2.4 Develop awareness of the importance of caring for and respecting the environment, and participate in activities related to its care. <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and raise simple questions about objects and events in their environment. 1.3 Begin to identify and use, with adult support, some observation and measurement	<u>Physical Science</u> 1.1 Observe, investigate, and identify the characteristics and physical properties of objects and of solid and nonsolid materials (size, weight, shape, color, texture, and sound). 2.1 Demonstrate awareness that objects and materials can change; explore and describe changes in objects and materials (rearrangement of parts; change in color, shape, texture, temperature). 2.2 Observe and describe the motion of objects (in terms of speed, direction, the ways things move), and explore the effect of own actions (e.g., pushing, pulling, rolling, dropping) on making objects move. <u>Scientific Inquiry</u> 1.1 Demonstrate curiosity and raise simple questions about objects and events in their environment. 1.2 Observe objects and events in the environment and describe them. 1.4 Compare and contrast objects and events and begin to describe similarities and
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	differences.	concrete experiences. 1.6 Make inferences and form generalizations based on evidence.	tools. 1.4 Compare and contrast objects and events and begin to describe similarities and differences. 1.5 Make predictions and check them, with adult support, through concrete experiences. 1.6 Make inferences and form generalizations based on evidence.	differences. 1.5 Make predictions and check them, with adult support, through concrete experiences. 1.6 Make inferences and form generalizations based on evidence.
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