



ADW GRADE 3 SCIENCE STANDARDS & INSTRUCTION GUIDE

PHYSICAL SCIENCE (PS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.PS.1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	<ul style="list-style-type: none">• A force is a push or pull on an object.• Each force acts on one particular object and has both strength and a direction.• An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object (balanced force) and the object does not move.• Forces that do not equal zero can cause changes in the object's speed or direction of motion (unbalanced force).• The greater the force, the greater the change in motion.• Newton's first law of motion states: an object at rest will stay at rest and an object in motion will stay in motion unless acted upon by an unbalanced force.• The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it.	<ul style="list-style-type: none">• force• strength• direction• net force• balanced forces• unbalanced forces• Newton's Laws of Motion• gravity	<ul style="list-style-type: none">• https://phet.colorado.edu/en/simulation/forces-and-motion-basics



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SC.3.PS.2	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.	<ul style="list-style-type: none">• Objects in contact exert forces on each other.• Electric and magnetic forces between a pair of objects do not require that the objects be in contact.• The sizes of the forces in each situation depend on the properties of the objects and the distance between them.• Forces between two magnets also depend on their orientation relative to each other.• Electrical energy can be transformed into other forms of energy, including motion, sound, heat, or light.• An electromagnet is produced when an electric current passes through a coil of wire wrapped around an iron core.	<ul style="list-style-type: none">• static electricity• magnet• magnetism• attraction• repulsion	<ul style="list-style-type: none">• http://interactivesites.weebly.com/magnets-and-compass.html



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PHYSICAL SCIENCE (PS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.PS.3E	Identify types of simple machines and their uses. Investigate and build simple machines to understand how they are used.	<ul style="list-style-type: none"> Machines make work easier by changing the size of a force, changing the distance a force acts, or by changing the direction of a force. Simple machines do work using only one movement. 	<ul style="list-style-type: none"> machine work distance simple machines screw wedge wheel and axle lever pulley inclined plane 	<ul style="list-style-type: none"> http://idahoptv.org/sciencetrek/topics/simple_machines/facts.cfm https://wmich.edu/engineer/ceee/edcsi/pdf/Simple%20Machine%20STEM%20guide.pdf
SC.3.PS.4	Investigate how multiple simple machines work together to perform everyday tasks.	<ul style="list-style-type: none"> Two or more simple machines working together to perform a task make a compound machine. Compound machines do work by using two or more coordinated movements. 	<ul style="list-style-type: none"> compound machine 	<ul style="list-style-type: none"> https://www.neok12.com/Simple-Machines.htm
SC.3.PS.5	Generate sound energy using a variety of materials and techniques,			http://www.explorit.org/scienceonline/teacher-



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	and recognize that it passes through solids, liquids, and gases (i.e. air).			resources/Light and Sound CA TERP v2.pdf
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LIFE SCIENCE (LS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.LS.1	Make observations of plants, animals, and other organisms to compare the diversity of life in different habitats.	<ul style="list-style-type: none"> • Environments on Earth can vary greatly in physical characteristics, temperature, rainfall, and availability of resources to support life. • These characteristics influence the kinds, numbers, and diversity of organisms that live there. • Some environments are terrestrial, such as deserts, grasslands, polar lands, and forests. • Some environments are aquatic, such as fresh water ponds and lakes and salt water marshes and the ocean. • Organisms can survive only in environments where their basic needs are met. • Animals and fungi depend on their surroundings to get what they need, including food, water, shelter, and a favorable 	<ul style="list-style-type: none"> • environment 	<ul style="list-style-type: none"> • https://betterlesson.com/browse/common_core/standard/2094/ngss-2-ls4-1-make-observations-of-plants-and-animals-to-compare-the-diversity-of-life-in-different-habitats?from=login • https://www.nationalgeographic.org/encyclopedia/habitat/



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		<p>temperature.</p> <ul style="list-style-type: none"> Different plants survive better in different settings because they have varied needs for water, minerals, and sunlight. 		
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LIFE SCIENCE (LS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.LS.2	Use evidence to support the claim that organisms in a habitat depend on each other for survival.	<ul style="list-style-type: none"> The role an organism plays in an ecosystem can be described by the way in which it gets its energy. Animals depend on plants (herbivores) and/or other animals (carnivores) for food. Animals may also depend on plants or other animals for shelter. Being part of a group helps some organisms obtain food, defend themselves, and cope with changes. In some groups, such as ant and bee colonies, members may play specific roles. Groups may serve different functions and vary dramatically in size. 	<ul style="list-style-type: none"> survival growth behavior habitat environment producer consumer herbivore carnivore food web 	<ul style="list-style-type: none"> https://extension.illinois.edu/ecosystems/teachersguide6.cfm https://www.nationalgeographic.org/activity/meerkat-survival/



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SC.3.LS.3	Obtain and communicate information to explain how changes in a habitat can be beneficial or harmful to organisms that live there.	<ul style="list-style-type: none">• Changes in the environment affect the ability of organisms to get what they need to survive.• Environmental changes, such as drought or floods, can affect the availability of resources• Some organisms survive the change and reproduce, others move to new locations, and some die.• New organisms may move into the transformed environment if it meets their needs.	<ul style="list-style-type: none">• migration• adaptations	<ul style="list-style-type: none">• https://www.nationalgeographic.org/activity/meerkat-survival/
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EARTH AND SPACE SCIENCE (ESS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.ESS.1	Record detailed weather observations, including temperature, cloud cover, and type of precipitation on a daily basis over a period of weeks and correlate observations to the time of year. Chart and graph collected data.	<ul style="list-style-type: none">• Weather changes day to day and over the seasons.• Weather is the combination of sunlight, wind, precipitation, and temperature in a particular region at a particular time.• Types of precipitation include rain, snow, sleet, and hail.• People measure weather conditions to describe and record the weather and to notice patterns over time.• Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years.	<ul style="list-style-type: none">• weather• seasons• precipitation• temperature• clouds• climate• wind speed• wind direction• air pressure	<ul style="list-style-type: none">• http://www.ciese.org/curriculum/weatherproj2/en/lesson3.shtml• https://www.scholastic.com/teachers/lesson-plans/teaching-content/forecast-weather-weather-watch-lesson-grades-3-5/



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EARTH AND SPACE SCIENCE (ESS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.ESS.2	Plan and conduct an investigation to determine the connections between water processes and weather in Earth systems.	<ul style="list-style-type: none">• Water is continuously cycled between the Earth's surface, the air, and back again.• The cycling of water contributes to weather and prevailing climates.• Water evaporates from earth's surface, changing from liquid to gas.• Clouds form when water in the atmosphere changes to liquid form.• Rain occurs when water in the clouds becomes heavy enough to fall to the ground.• In colder temperatures, water may freeze, changing from liquid to solid ice.	<ul style="list-style-type: none">• precipitation• condensation• evaporation• the water cycle• atmosphere• gas• liquid• solid	<ul style="list-style-type: none">• https://oceantoday.noaa.gov/watercycle/• https://www.noaa.gov/resource-collections/water-cycle• https://coast.noaa.gov/psc/sea/content/water-cycle.html• https://scijinks.gov/classroom-activities/



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EARTH AND SPACE SCIENCE (ESS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.3.ESS.3	Investigate the severe weather of the region and its impact on the community, looking at forecasting to prepare for, and respond to, severe weather.	<ul style="list-style-type: none">• Scientists (meteorologists) record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next.• Scientists examine patterns in data such as average temperature, precipitation, and prevailing wind direction.• Meteorologists use these patterns to forecast severe weather so that communities can prepare for and respond to these events.• Severe weather can include thunderstorms, tornadoes, hurricanes, and winter storms, such as blizzards.• Weather forecasts can include reports, satellite and radar images, weather maps, and computer models.• Humans cannot eliminate weather-related hazards, but can take steps to reduce their impacts.• During severe weather, it is important for individuals and communities to have and follow a safety plan.	<ul style="list-style-type: none">• thunderstorm• tornado• hurricane• blizzard• meteorologist	<ul style="list-style-type: none">• https://www.nssl.noaa.gov/education/svrwx101/



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Grades 3-5 Engineering Standards (E)

SC.3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.

SC.3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

SC.3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.