

Science - Grade 3

Idaho Department of Education Content Standards	Objective	Sub Objectives	Task Analysis	Essential Vocabulary	Assessment	Resources
Cognitive level codes: • B: Memorize • C: Perform procedures • D: Demonstrate understanding • E: Conjecture, generalize, prove • F: Solve non-routine problems, make connections	Bloom's Equivalent • B = Knowledge • C = Comprehension • D = Comprehension • E = Application and Analysis • F = Synthesis					
Standard 1: Nature of Science Not a stand alone standard, use throughout!						
Goal 1.1: Understand Systems, Order, and Organization	3.S.1.1.1 Label the parts of a system. (573.01.a)		• Label the parts of a system(i.e., the food chain, food web, and compound machines)	system	• Label the parts of a system. (i.e. label the parts of an ecosystem, label a food chain and web.)	
Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations	3.S.1.2.1 Make observations, collect data and evaluate it. (573.02.a)		• Observe, collect and evaluate data (e.g. the physical properties of an object as in potential & kinetic energy, changes in states of matter.)		• Find the melting temperature of water by making and recording observations as heat is applied to an ice cube.	Scientific method worksheets; http://totally3rdgrade.com/scientific_method.html
	3.S.1.3.2 Measure using both U.S. Customary and International System of Measurement (metric system) units. (573.03.c)		• Make measurements in both standard and metric units. (i.e.. length, volume, weight, mass, temperature, time.		• Use a ruler to find the length of an object. • Measure the volume of a pitcher of water.	
Goal 1.3: Understand Constancy, Change, and Measurement	3.S.1.3.1 Measure changes that occur. (573.03.b)		• Measure changes that occur (i.e.. changes in temperature as matter heats and cools.)		• Measure the height of a class mate throughout the year. • Measure the circumference of a melting snowball.	
	3.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (573.03.c)		• Same as 3.S.1.3.1-record measurements above with US and metric units.		• Measure the height of a class mate in both ft and m. • Measure the volume of a pitcher of water in both cups and liters.	
Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State	No objectives at this grade level.					
Goal 1.5: Understand Concepts of Form and Function	3.S.1.5.1 Describe the relationship between shape and use. (573.05.a)		• Describe the relationship between shape and use (i.e.. adaption of claws and beaks, tool development over time.)		• Tell how an eagle uses its beak. • Describe how a duck's feet help it swim.	
Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills	3.S.1.6.1 Identify questions that can be answered by conducting scientific tests. (574.01.a)		• Compare & contrast questions to determine testability • List testable questions	hypothesis	• Which of the following is a testable hypothesis: A. Does salt water freeze at a different temperature than fresh water? B. Does pizza taste better than hot dogs?	
	3.S.1.6.2 Conduct scientific tests (574.01.b)		• Form a testable hypothesis that can be tested and measured • Conduct scientific tests and measure results	constant • experiment • variable	• Conduct an experiment (i.e. grow plants with different amounts of sunlight.)	
	3.S.1.6.3 Use appropriate tools and techniques to gather and display data. (574.01.c)			charts • diagrams • evidence, graphs • models • record	• Use a line graph to chart the circumference of a melting snow ball. • Compare on a Venn Diagram the energy needs of plants and animals. • Create a journal to describe the growth of plants in an experiment.	
	3.S.1.6.4 Use data to construct a reasonable explanation. (574.01.d)		• Use data to construct a reasonable explanation. (i.e., why matter changes state from heating and cooling, variations in an ecosystem, give a reasonable explanation of tool development.)	conclusion • scientific law • theory	• Use the data about plants and sunlight to decide which amount of sunlight causes the most growth.	
	3.S.1.6.5 Make simple predictions based on data. (574.01.e)		• Make simple predictions based on data. (i.e.. heating and cooling matter, changes in a food chain or web, effects of recycling, changes in an ecosystem or local environment.)	predict • results	• What would happen if the earth wasn't tilted? • Predict what would happen if everyone recycled?	

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	3.S.1.6.6 Identify logical alternative explanations. (574.01.f)		<ul style="list-style-type: none"> Identify logical alternative explanations. (i.e., different recycling programs, possible reasons for changes in state of matter, causes for changes in an ecosystem or food chain.) 		<ul style="list-style-type: none"> In small groups create a plan to increase recycling in your community. Identify other factors that may effect plant growth. (i.e. water, germination, plant food) 	
	3.S.1.6.7 Communicate the results of tests to others. (574.01.g)		<ul style="list-style-type: none"> Communicate the results of tests to others. (i.e., Visual organizers, oral reports, written reports, and small group share on topics in a content area.) 		<ul style="list-style-type: none"> Write a report explaining how light effects plant growth. Discuss with a partner your predictions and results about an experiment. Present an oral report. 	
Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors	No objectives at this grade level.					
Goal 1.8: Understand Technical Communication	3.S.1.8.1 Read and give multi-step instructions. (583.02.a)		<ul style="list-style-type: none"> Identify steps and sequence of a process. Read and give multi-step instructions. Demonstrate how to give and follow multi-step instructions. 		<ul style="list-style-type: none"> Explain the steps in making ice cream or a recipe. Make a recipe. Write the steps to construct an ecosystem diorama. 	
Standard 2: Physical Science						
Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions	3.S.2.1.1 Use instruments to measure properties. (575.01.a)	<ul style="list-style-type: none"> Use instruments to measure properties. 	<ul style="list-style-type: none"> Identify and explain which instrument is appropriate for each property's measurement. (length uses a ruler or meter stick) Correctly use each instrument. (i.e., Scales, rulers, measuring cups, balance, etc) 	balance scales • Celsius • Fahrenheit • length • mass • measuring cups • measuring tape • property • rule • scales • temperature • thermometer • volume • weight • yardstick	<ul style="list-style-type: none"> Select the appropriate instrument to measure a pencil, a bus, a field, the distance between towns. Measure the volume of a liquid using measuring cups. Use a scale to measure the weight of a classmate. 	
	3.S.2.1.2 Identify the physical properties of solids, liquids, and gases. (575.01.b)	<ul style="list-style-type: none"> Identify the physical properties of solids, liquids, and gases. 	<ul style="list-style-type: none"> Define a solid, liquid, and a gas. Sort different objects by physical properties and states of matter. Compare different objects within the states of matter. Justify an object's classification as a solid, liquid, or gas. 	atom • gas • liquid • molecules • physical properties • solid • states of matter	<ul style="list-style-type: none"> Matter that doesn't hold a certain shape or volume is a _____. A _____ will keep its shape. _____ has a definite volume but not a definite shape. 	
	3.S.2.1.3 Explain that heating and cooling can cause changes of state in common materials. (575.01.c)	<ul style="list-style-type: none"> Explain what happens when heat is applied to a common material Explain what happens when heat is removed from a common material. 	<ul style="list-style-type: none"> Identify different physical states of a common material. (i.e. ice, water, steam) Give examples of when temperature changes a material's state of matter. 	condense • constant • contract • cool • energy • evaporate • expand • freeze • heat • insulation • melt • temperature	<ul style="list-style-type: none"> You bring a snowball into the classroom and leave it on your desk. Summarize what will happen to the snowball. 	
Goal 2.2: Understand Concepts of Motion and Forces	No objectives at this grade level.					
Goal 2.3: Understand the Total Energy in the Universe is Constant	3.S.2.3.1 Identify potential and kinetic energy. (590.03.a)	<ul style="list-style-type: none"> Identify potential and kinetic energy 	<ul style="list-style-type: none"> Name examples of potential and kinetic energy. Distinguish between potential and kinetic energy. 	energy • energy in motion • force • gravity • kinetic energy • potential energy • stored energy	<ul style="list-style-type: none"> A skydiver about to jump from an airplane has _____ energy. A race car speeding toward the finish line has _____ energy. 	song for kinetic and potential energy; http://www.kidsknowit.com/educational-songs/play-educational-song.php?song=Kinetic%20And%20Potential%20Energy
Goal 2.4: Understand the Structure of Atoms	No objectives at this grade level.					
Goal 2.5: Understand Chemical Reactions	No objectives at this grade level.					

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Standard 3: Biology						
Goal 3.1: Understand the Theory of Biological Evolution	3.S.3.1.1 Describe the adaptations of plants and animals to their environment. (577.01.a)	<ul style="list-style-type: none"> Describe the adaptations of plants and animals to their environment. 	<ul style="list-style-type: none"> Define adaptation. Identify adaptations of a plant or animal. Describe how the adaptation relates to the environment of the plant or animal. *Create a plant or animal with an adaptation for a given environment. 	adaptations • behavior • camouflage • dormant • environment • habitat • hibernation • migrate • nocturnal • survival	<ul style="list-style-type: none"> Draw an animal or plant with an adaptation for a certain environment and describe how the adaptation helps it survive. 	
Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems	3.S.3.2.1 Describe the energy needed for living systems to survive. (578.01.a)	<ul style="list-style-type: none"> Describe the energy needed for living systems to survive. 	<ul style="list-style-type: none"> Identify energy sources in a living system. Explain how different living things get energy. Justify the relationship between predators and prey. 	consumer • decomposer • ecosystem • energy • photosynthesis • predator • prey • producer	<ul style="list-style-type: none"> Imagine if plants could no longer get energy from the sun. Describe what would happen to the ecosystem. 	Project Wild, Project Wet, Project Learning Tree.
	3.S.3.2.2 Compare and contrast the energy requirements of plants and animals. (593.01.a)	<ul style="list-style-type: none"> Compare and contrast the energy requirements of plants and animals. 	<ul style="list-style-type: none"> Define producers and consumers. Compare and contrast the energy needs of plants and animals. 	consumer • photosynthesis • producer	<ul style="list-style-type: none"> Imagine if all the producers, or consumers, or sun, disappeared from a forest. Compare and contrast what would happen to the plants and the animals. 	
	3.S.3.2.3 Label a food chain that shows how organisms cooperate and compete in an ecosystem. (578.01.b)	<ul style="list-style-type: none"> Label a food chain that shows how organisms cooperate and compete in an ecosystem. 	<ul style="list-style-type: none"> Define a food chain. Identify the producers and consumers in a food chain. Draw and label a multi-step food chain. 	carnivore • food chain • herbivore • predator • prey • omnivore	<ul style="list-style-type: none"> Draw and label a food chain starting with the sun and ending with a bear. 	
	3.S.3.2.4 Diagram the food web and explain how organisms both cooperate and compete in ecosystems. (593.01.b)	<ul style="list-style-type: none"> Diagram the food web Explain how organisms both cooperate and compete in an ecosystem. 	<ul style="list-style-type: none"> Identify the parts of an ecosystem. Draw and label a diagram of a food web. Explain how organisms cooperate in an ecosystem. Explain how organisms compete in an ecosystem. 	community • competition • cooperation • ecosystem • food web • host • niche • parasite • symbiosis	<ul style="list-style-type: none"> Draw a food web with multiple producers and consumers. Explain how the consumers compete to survive. 	
Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things	No objectives at this grade level.					
Standard 4: Earth and Space Systems						
Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems	3.S.4.1.1 Explain the reasons for length of a day, the seasons, and the year on Earth. (594.01.a)	<ul style="list-style-type: none"> Explain the reason for length of day Explain the reason for season Explain the year on earth. 	<ul style="list-style-type: none"> Describe the effects of the earth's rotation. (i.e., day and night) Explain the difference between revolution and rotation with the earth's orbit. Define and describe the earth's seasonal weather. Create a model of the of the earth's tilting axis as it orbits the sun. Explain how the earth's tilt effects the seasons. 	axis • earth • fall (autumn) • orbit • revolution • rotation • planet • season • spring • summer • sun • tilt • winter	<ul style="list-style-type: none"> How long does it take the earth to rotate once? One revolution of the earth is called what? Describe how the tilt of the earth causes seasons? 	
Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System	No objectives at this grade level.					
Standard 5: Personal and Social Perspectives; Technology						
Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced	3.S.5.1.1 Identify local environmental issues. (581.01.a)	<ul style="list-style-type: none"> Identify local environmental issues. 	<ul style="list-style-type: none"> Identify local environmental issues. (i.e. inversions and air pollution, mining in Pocatello, wolves in Salmon, Logging in National Forests, agriculture on the Snake River Plain, water shortage) 	acid rain • aquifer • erosion • exhaustible • inexhaustible resource • mineral • natural resource • nonrenewable • renewable • resource • pollution • soil • weathering • watershed	<ul style="list-style-type: none"> List at least two environmental issues facing Power, Bannock, or Cache county. Name an environmental issue of a man made nature? 	Idaho Power Presentations
Goal 5.2: Understand the Relationship between Science and Technology	3.S.5.2.1 Describe how technology helps develop tools. (580.01.a)	<ul style="list-style-type: none"> Describe how technology helps develop tools. 	<ul style="list-style-type: none"> Identify simple and compound machines and tools. Identify the simple machines within a compound machine. Identify changes in technology Describe how technology helps develop tools. (i.e. screwdriver and a drill, shovel and a backhoe) 	compound machines • industrial revolution • simple machines • technology	<ul style="list-style-type: none"> How has the screwdriver been improved through technology? 	
	3.S.5.2.2 Describe the development of tools over time. (580.01.b)	<ul style="list-style-type: none"> Describe the development of tools over time. 	<ul style="list-style-type: none"> Identify tools. Describe the development of tools over time. (i.e. rock to metal, screwdriver to drill, etc) 		<ul style="list-style-type: none"> Trace the development of a tool, (i.e. hammer) over time. 	

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Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them	3.S.5.3.1 Explain the concept of recycling. (581.03.a)	<ul style="list-style-type: none"> • Explain the concept of recycling. 	<ul style="list-style-type: none"> • List ways to recycle. • Describe what happens when one recycles. 	conservation • recycle, • reduce • reuse	<ul style="list-style-type: none"> • Summarize how recycling benefits the environment. 	Water Plant