

Eighth Grade State Performance Standards

A-1-A3 Science as Inquiry and Process	<p>SA Students develop an understanding of the processes and applications of scientific inquiry.</p> <p>SA1 Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.</p> <p>SA2 Students develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review.</p> <p>SA3 Students develop an understanding that culture, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues.</p>
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Grade Level Expectations	KGBSD Student Objectives
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<p>The student demonstrates an understanding of the processes of science by:</p> <p>{8} SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.*</p> <p>{8} SA1.2 collaborating to design and conduct simple repeatable investigations in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)</p> <p>* same concept at a higher level</p>	<p>K - SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.*</p> <p>K - SA1.2 collaborating to design and conduct simple repeatable investigations in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)</p> <p>K - SA1.3 organizing, analyzing, and present scientific data and information in report form, table, graphs, projects, etc.</p> <p>K - SA1.4 experiencing that hypotheses are valuable, even if they turn out not to be true, if they lead to fruitful investigations.</p> <p>K - SA1.5 evaluating the strengths and weaknesses of claims, arguments, or data.</p> <p>K - SA1.6 calculating the densities of different substances.</p> <p>K - SA1.7 using the metric system.</p> <p>K - SA1.8 using safety skills.</p> <p>K - SA1.9 planning and carry out a “fair test” with an attempt to control for obvious variable, and make decisions about whether the conclusions drawn from an investigation are soundly.</p>
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<p>The student demonstrates an understanding of the attitudes and approaches to scientific inquiry by:</p> <p>{8} SA2.1 recognizing and analyzing differing scientific explanations and models.</p>	<p>K - SA1.10 experiencing that if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be clearly attributable to any one of the variables.</p> <p>K - SA1.11 designing conduct scientific investigations using rocketry.</p> <p>K - SA1.12 calculating half-lives of objects.</p> <p>K - SA2.1 recognizing that often different explanations can be given for the same evidence, and it is not always possible to tell which one is correct.</p> <p>K - SA2.2 explaining that scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning imagination, and the creation of explanations to make sense of the collected evidence.</p> <p>K - SA2.3 telling why during research, scientists are bound by an ethical code which includes honesty and respect for nature.</p> <p>K - SA2.4 locating, identifying, and use appropriate secondary sources to support or contradict scientific investigations or reports. (e.g., reference books, computer databases, compact disks, periodicals, other people, etc.)</p>
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<p>The student demonstrates an understanding that interactions with the environment provide an opportunity for understanding scientific concepts by:</p> <p>{8} SA3.1 conducting research to learn how the local environment is used by a variety of competing interests (e.g., competition for habitat/resources, tourism, oil and mining companies, hunting groups). (L)</p>	<p>K - SA3.1 conducting research to learn how the local environment is used by a variety of competing interests (e.g., competition for habitat/resources, tourism, oil and mining companies, hunting groups). (L)</p> <p>K - SA3.2 assess the effects of: depletion; recycling; and development of substitute materials on mineral availability.</p>
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