

DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY		
Oklahoma Priority Academic Student Skills – Science Processes and Inquiry – Grades 6, 7, 8		
Lesson	Standard	Description
3	1.1	Identify qualitative and quantitative changes given conditions (e.g., temperature, mass, volume, time, position, length, quantity) before, during, and after an event.
1	1.2	Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches) when measuring objects, organisms, and/or events.
1	1.3	Use appropriate System International (SI) units (i.e., grams, meters, liters, degrees Celsius, and seconds); and SI prefixes (i.e., micro-, milli-, centi-, and kilo-) when measuring objects, organisms, and/or events.
1, 3	2.1	Use observable properties to place an object, organism, and/or event into a classification system (e.g., dichotomous keys).
1, 3	2.2	Identify properties by which a set of objects, organisms, and/or events could be ordered.
All lessons	3.1	Ask questions about the world and design investigations that lead to scientific inquiry.
All lessons	3.2	Evaluate the design of a scientific investigation.
1, 2, 3	3.3	Identify variables and/or controls in an experimental setup (i.e., tested, experimental, and measured variables).
All lessons	3.4	Identify a testable hypothesis for an experiment.
3	3.5	Design and conduct experiments.
3	3.6	Recognize potential hazards and practice safety procedures in all science activities.
1, 3	4.1	Report data in an appropriate method when given an experimental procedure or data.
3, 4	4.2	Interpret data tables, line, bar, trend, and/or circle graphs.
1, 3, 4	4.3	Evaluate data to develop reasonable explanations, and/or predictions.
1, 3, 4	4.4	Accept or reject hypotheses when given results of an investigation.
All lessons	4.5	Communicate scientific procedures and explanations.
1, 3	5.1	Use systematic observations, make accurate measurements, and identify and control variables.
3	5.2	Use technology to gather data and analyze results of investigations.
1, 3, 4	5.3	Review data, summarize data, and form logical conclusions.
1, 3, 4	5.4	Formulate and evaluate explanations proposed by examining and comparing evidence, pointing out statements that

OKLAHOMA ALIGNMENT FOR NIH SUPPLEMENT DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY

		go beyond evidence, and suggesting alternative explanations.
Oklahoma Priority Academic Student Skills – Science – Grades 6 & 7		
Lesson	Standard	Description
3, 4	4.2	Living organisms have physical and/or behavioral responses to external stimuli (e.g., hibernation, migration, plant growth). (7)
Oklahoma Priority Academic Student Skills – Mathematics Process Standards – Grades 6, 7, 8		
Lesson	Standard	Description
3	1.1	Develop and test strategies to solve practical, everyday problems which may have single or multiple answers.
3	1.2	Use technology to generate and analyze data to solve problems.
3	1.3	Formulate problems from situations within and outside of mathematics and generalize solutions and strategies to new problem situations.
3	1.4	Evaluate results to determine their reasonableness.
3	1.6	Use oral, written, concrete, pictorial, graphical, and/or algebraic methods to model mathematical situations.
3, 4	2.1	Discuss, interpret, translate (from one to another) and evaluate mathematical ideas (e.g., oral, written, pictorial, concrete, graphical, algebraic).
3, 4	2.2	Reflect on and justify reasoning in mathematical problem solving (e.g., convince, demonstrate, formulate).
3	3.1	Identify and extend patterns and use experiences and observations to make suppositions.
3, 4	4.1	Apply mathematical strategies to solve problems that arise from other disciplines and the real world.
3, 4	5.1	Use a variety of representations to organize and record data (e.g., use concrete, pictorial, and symbolic representations).
1, 3, 4	5.4	Use a variety of representations to model and solve physical, social, and mathematical problems (e.g., geometric objects, pictures, charts, tables, graphs).
Oklahoma Priority Academic Student Skills – Mathematics Content Standards – Grades 6, 7, 8		
Lesson	Standard	Description
1, 3, 4	5.1	Collect, organize, and interpret data to solve problems (e.g., data from student experiments, tallies, Venn diagrams, tables, circle and bar graphs, spreadsheets). (6)

OKLAHOMA ALIGNMENT FOR NIH SUPPLEMENT DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY

3, 4	2.1.b	Use the basic operations on integers to solve problems. (7)
3, 4	2.1.a	Compare and order rational numbers (positive and negative integers, fractions, decimals) in real-life situations. (8)
	2.1.c	Apply ratios and proportions to solve problems. (8)
3	5.1	Select and apply appropriate formats (e.g., line plots, bar graphs, stem-and-leaf plots, scatter plots, histograms, circle graphs) to display collected data. (8)
3, 4	5.3	Determine how samples are chosen (random, limited, biased) to draw and support conclusions about generalizing a sample to a population (e.g., is the average height of a men’s college basketball team a good representative sample for height predictions?). (8)

Oklahoma Priority Academic Student Skills – Language Arts – Grades 6, 7, 8

Lesson	Standard	Description
2, 3, 4	3.2.a	Draw inferences and conclusions about text and support them with textual evidence and prior knowledge. (Reading)
2, 3, 4	3.3.a	Summarize and paraphrase information including the main idea and significant supporting details of a reading selection. (6 & 7 – Reading) Determine the main (or major) idea and how those ideas are supported with specific details. (8 – Reading)
2, 3, 4	3.3.b	Make generalizations based on information gleaned from text. (6 – Reading) Paraphrase and summarize text to recall, inform, or organize ideas. (8 – Reading)
All lessons	3.3.d	Support reasonable statements by reference to relevant aspects of text and examples. (7 – Reading)
All lessons	3.4.d	Problem/solution - offer observations, make connections, react, speculate, interpret, and raise questions in response to text. (8 – Reading)
3	5.1.b	Access information from a variety of primary and secondary sources to gather information for research topics. (6 & 7 - Reading)
2, 3, 4	1.2	Make generalizations based on information gleaned from text. (6 - Writing) Use details, examples, reasons, and evidence to develop an idea. (7 & 8 – Writing)
All lessons	1.4	Use precise word choices, including figurative language, that convey specific meaning and tone. (Writing)
All lessons	1.5	Use a variety of sentence structures, types, and lengths to contribute to fluency and interest. (Writing)
3	2.2.d	Write research reports that: organize and display information on charts, tables, maps, and graphs. (8 – Writing)
All lessons	2.7	Write for different purposes and audiences, adjusting tone, style, and voice as necessary to make writing interesting. (6 - Writing)

OKLAHOMA ALIGNMENT FOR NIH SUPPLEMENT DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY

All lessons	2.8	Write for different purposes and audiences, adjusting tone, style, and voice as necessary to make writing interesting. (7 & 8 - Writing)
All lessons	1.1	Identify the major ideas and supporting evidence in informative and persuasive messages. (Listening)
All lessons	1.2	Determine the purpose for listening (i.e., gaining information, solving problems; or for enjoying, appreciating, recalling, interpreting, applying, analyzing, evaluating, receiving directions, or learning concepts). (6 – Listening) Listen in order to identify and discuss topic, purpose, and perspective. (7 & 8 – Listening)
All lessons	2.1	Analyze purpose, audience, and occasion and consider this information in planning an effective presentation or response. (Listening)
All lessons	2.4	Use level-appropriate vocabulary in speech (e.g., metaphorical language, sensory details, or specialized vocabulary). (7 & 8 – Listening)

Oklahoma Priority Academic Student Skills – Health and Safety Literacy – Grades 5 - 8

Lesson	Standard	Description
3	1.1	Analyze how environment and personal health are interrelated.
3, 4	1.2	Describe how lifestyle, pathogens, family history, and other risk factors are related to the cause or prevention of disease and other health problems.
3	1.7	Describe the effects various diseases (e.g., cancer, diabetes) have on the body systems.
4	1.14	Identify individual and community responsibilities for protecting the environment and promoting community health and safety.
3, 4	2.1	Analyze situations requiring professional health services.
3, 4	6.3	Demonstrate the ability to apply a decision-making process to health and safety issues individually and collaboratively.
3, 4	7.4	Examine various methods for communicating health information and ideas.