

| THE SCIENCE OF ENERGY BALANCE: CALORIE INTAKE AND PHYSICAL ACTIVITY | | |
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| Alaska Science PSGLE: Grades 6 – 8 | | |
| Grade 6 | | |
| Lesson | PSGLE | Descriptor |
| All lessons | [6] SA1.1 | Asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating. |
| 1, 4 | [6] SA1.2 | Collaborating to design and conduct simple repeatable investigations. |
| All lessons | [6] SA2.1 | Identifying and differentiating fact from opinion. |
| All lessons | [6] SB2.1 | Recognizing that energy can exist in many forms (i.e., heat, light, chemical, electrical, mechanical). |
| All lessons | [6] SC3.1 | Recognizing that organisms can cause physical and chemical changes (e.g., digestion, growth, respiration, photosynthesis) to matter and recognizing the importance of energy transfer in these changes. |
| 3, 5 | [6] SE1.1 | Recognizing that technology cannot always provide successful solutions for problems or fulfill every human need. |
| 1, 3, 4 | [6] SE2.2 | Comparing the student's work to the work of peers in order to identify multiple paths that can be used to investigate a question or problem. |
| Grade 7 | | |
| All lessons | [7] SA1.1 | Asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating. |
| 1, 4 | [7] 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. |
| All lessons | [7] SA2.1 | Identifying and evaluating the sources used to support scientific statements. |
| All lessons | [7] SB2.1 | Explaining that energy (i.e., heat, light, chemical, electrical, mechanical) can change form. |
| All lessons | [7] SC2.3 | Identifying and describing the functions of human organs (i.e., heart, lungs, brain). |
| 1, 4 | [7] SE2.2 | Comparing the student's work to the work of peers in order to identify multiple paths that can be used to investigate a question or problem. |
| 2 | [7] SG3.1 | Revising a personal idea when presented with experimental/observational data inconsistent with that personal idea (e.g., the rates of falling bodies of different masses). |
| Grade 8 | | |
| All lessons | [8] SA1.1 | Asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating. |
| 1, 4 | [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. |

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| 1, 2, 3, 4 | [8] SA2.1 | Recognizing and analyzing differing scientific explanations and models. |
| All lessons | [8] SB2.1 | Identifying the initial source and resulting change in forms of energy in common phenomena (e.g., sun to tree to wood to stove to cabin heat). |
| 3, 4 | [8] SC2.2 | Explaining that most organisms utilize inherited and learned behaviors to meet the basic requirements of life. |
| 1, 4 | [8] SE2.2 | Comparing the student's work to the work of peers in order to identify multiple paths that can be used to investigate and evaluate potential solutions to a question or problem. |
| 2 | [8] SG3.1 | Revising a personal idea when presented with experimental/observational data inconsistent with that personal idea (e.g., the rates of falling bodies of different masses). |

Alaska Mathematics PSGLE: Grades 6 – 8

Grade 6

| Lesson | PSGLE | Descriptor |
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| 2, 3, 4 | [6] N-1 | Reading, writing, ordering, or counting fractions (proper or mixed numbers), decimals, percents (whole number), or integers. |
| 2 | [6] MEA-2 | Identifying equivalent measures within systems: English length (inches, feet, yards, miles), weight (ounces, pounds), volume (fluid ounces, cups, pints, quarts, gallons), Metric length (millimeters, centimeters, meters, kilometers) and volume (milliliters, liters). |
| 2 | [6] MEA-6 | Converting and using equivalent measurements within the same system. |
| 2, 3 | [6] E&C-1 | Identifying or using [a variety of L] strategies (e.g., truncating, rounding to compatible numbers) to estimate the results of addition, subtraction or multiplication from thousandths to millions or simple division. |
| 2 | [6] E&C-3 | Adding or subtracting whole numbers, fractions with unlike denominators to 12, or decimals to the hundredths place. |
| All lessons | [6] E&C-4 | Multiplying whole numbers by two- or three-digit numbers, dividing three-digit numbers by one or two-digit numbers, or multiplying or dividing decimals that represent money by whole numbers, or multiplying or dividing proper fractions. |
| All lessons | [6] F&R-5 | Solving for an unknown represented by a letter, (addition, subtraction, multiplication, or division) (e.g., $3 \cdot n = 15$, $n - 5 = 12$). |
| All lessons | [6] S&P-1 | [Designing an investigation and collecting L], organizing, or displaying, using appropriate scale for data displays (tables, bar graphs, line graphs, or circle graphs), data in real-world problems (e.g., social studies, friends, or school), with whole numbers up to 100. |
| All lessons | [6] S&P-2 | Using information from a variety of displays (tables, bar graphs, line graphs, circle graphs, or Venn diagrams). |
| All lessons | [6] PS-1 | Selecting, modifying, and applying appropriate problem solving strategies (e.g., graphing, Venn diagrams, tables, lists, working backwards, guess and check, or extend a pattern) and verifying results. |
| All lessons | [6] PS-2 | Evaluating and interpreting solutions to problems. |
| All lessons | [6] PS-3 | Representing problems using mathematical language including concrete, pictorial, and/or symbolic representation; or using appropriate vocabulary, symbols, and technology to explain mathematical solutions. |

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| All lessons | [6] PS-4 | Using informal deductive reasoning in concrete contexts; or justifying answers and mathematical strategies using examples. |
| All lessons | 6] PS-5 | Using real-world contexts such as social studies, friends, school and community. |
| Grade 7 | | |
| All lessons | [7] N-4 | Identifying or representing equivalents of numbers. |
| All lessons | [7] N-5 | Using models, explanations, number lines, real-life situations, describing or illustrating the effects of arithmetic operations on rational numbers (fractions, decimals). |
| 2 | [7] E&C-3 | Adding or subtracting fractions or mixed numbers with unlike denominators, or decimals to the thousandths place. |
| All lessons | [7] F&R-3 | Describing in words how a change in one variable in a formula affects the remaining variables. |
| All lessons | [7] F&R-5 | Evaluating algebraic expressions. |
| All lessons | [7] S&P-1 | Collecting, displaying, organizing, or explaining the classification of data in real-world problems (e.g., science or humanities, peers or community), using circle graphs, frequency distributions, stem and leaf, [or scatter plots L] with appropriate scale. |
| 4, 5 | [7] S&P-2 | Using information from a variety of displays (e.g., as found in graphical displays in newspapers and magazines). |
| 1, 4 | [7] S&P-6 | Designing and conducting a simulation to study a problem and communicate the results. |
| All lessons | [7] PS-1 | Selecting, modifying, and applying a variety of problem-solving strategies (e.g., working backwards, drawing a picture, Venn diagrams and verifying the results). |
| All lessons | [7] PS-2 | Evaluating, interpreting, and justifying solutions to problems. |
| All lessons | [7] PS-3 | Representing mathematical problems numerically, graphically, and/or symbolically; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions. |
| All lessons | [7] PS-5 | Using real-world contexts such as science, humanities, peers, and community. |
| Grade 8 | | |
| All lessons | [8] N-4 | Identifying, describing, or illustrating equivalent representations. |
| All lessons | [8] N-6 | Using models, explanations, number lines, real-life situations, describing or illustrating the effects of arithmetic operations on rational numbers (percents). |
| 2 | [8] MEA-1 | Converting measurements within the same system (English or metric). |
| All lessons | [8] E&C-1 | [Applying and assessing the appropriateness of a variety of estimation strategies L]. |
| All lessons | [8] E&C-2 | Adding, subtracting, multiplying or dividing integers or positive rational numbers. |
| 2, 4 | [8] E&C-4 | Accurately solve problems (including real-world situations) involving converting between equivalent fractions, decimals, or percents. |
| All lessons | 8] E&C-5 | Accurately solve problems (including real-world situations) involving ratio and proportion. |
| All lessons | [8] F&R-3 | Describing in words how a change in one variable in a formula affects the remaining variables. |
| 1, 4 | [8] S&P-1 | [Designing, collecting L], organizing, displaying, or explaining the classification of data in real-world problems (e.g., |

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| | | science or humanities, peers or community), using histograms, scatter plots, or box and whisker plots with appropriate scale [or with technology L]. |
| 4, 5 | [8] S&P-2 | Using information from a variety of displays or analyzing the validity of statistical conclusions found in the media. |
| All lessons | [8] PS-1 | Selecting, modifying, and applying a variety of problem-solving strategies (e.g., inductive and deductive reasoning, Venn diagrams, making a simpler problem) and verifying the results. |
| All lessons | [8] PS-3 | Representing mathematical problems numerically, graphically, and/or symbolically, translating among these alternative representations; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions. |
| All lessons | [8] PS-4 | Generalizing from patterns of observations (inductive reasoning) about mathematical problems and testing using a logical verification (deductive reasoning); or justifying and defending the validity of mathematical strategies and solutions using examples and counterexamples. |
| All lessons | [8] PS-5 | Using real-world contexts such as science, humanities, peers, community, and careers. |

Alaska Reading PSGLE: Grades 6 – 8

Grade 6

| Lesson | PSGLE | Descriptor |
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| All lessons | [6] 2.1.1 | Demonstrating knowledge of word structure (root words, prefixes, suffixes, abbreviations) and language structure through reading words in text (word order, grammar). |
| All lessons | [6] 2.1.2 | Determining the meaning of unfamiliar words using knowledge of word families, phonetics, context and visual cues, structural elements (contractions, compound words, root words, prefixes, suffixes, plurals). |
| All lessons | [6] 2.1.3 | Obtaining information using text features including pictures, illustrations, text structure (e.g., bolded or italicized text, graphs, charts, headings, or subheadings). |
| All lessons | [6] 2.2.1 | Locating information explicitly stated in narrative and informational text to answer literal-comprehension questions. |
| All lessons | [6] 2.2.4 | Drawing conclusions based on information presented explicitly in the text (e.g., cause and effect, character motivation, predictions). |
| All lessons | [6] 2.4.1 | Restating and summarizing main ideas or events in correct sequence after reading a text (e.g., paraphrasing, constructing a topic outline, using graphic organizers) or identifying accurate restatements and summaries of main ideas or events or generalizations of a text. |
| All lessons | [6] 2.5.1 | Identifying the main idea or central concept in various types of texts. |
| All lessons | [6] 2.5.2 | Locating information in narrative and informational text to answer questions related to main ideas or key details. |
| All lessons | [6] 2.5.3 | Locating references from the text that support understanding of a main idea. |
| All lessons | [6] 2.6.1 | Completing a task by following written, multi-step directions (e.g., basic science experiment). |
| All lessons | [6] 2.6.2 | Identifying the sequence of steps in multi-step directions. |
| All lessons | [6] 2.9.1 | Distinguishing fact from opinion in a text. |

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| All lessons | [6] 2.9.3 | Expressing own opinion about material read and supporting opinions with evidence from text. |
| Grades 7 & 8 | | |
| All lessons | [7] 3.1.1 [8] 3.1.1 | Determining meanings of unfamiliar words in context using knowledge of word structure, (prefixes/suffixes, base words, common roots, or word origins). |
| All lessons | [7] 3.1.2 [8] 3.1.2 | Determining meanings of unfamiliar words in context, including words from other languages that have been adopted into English (e.g. déjà vu), using knowledge of language structure including using context clues, prior knowledge, and other resources (e.g. dictionaries, glossaries, thesauruses). |
| All lessons | [7] 3.1.4 [8] 3.1.4 | Determining the meaning of words in context, including content-specific vocabulary, words with multiple meanings, or precise vocabulary (e.g., vague vs. ambiguous). |
| All lessons | [7] 3.3.1 [8] 3.3.1 | Restating and summarizing main ideas or events, in correct sequence, after reading a text (e.g., paraphrasing, constructing a topic outline, charting or mapping main ideas or events) or identifies accurate restatements and summaries of main ideas or events or generalizations of a text. |
| All lessons | [7] 3.3.2 [8] 3.3.2 | Connecting information within a text by making inferences and/or drawing conclusions across texts or other summarized information. |
| All lessons | [7] 3.3.3 [8] 3.3.3 | Connecting new information or ideas to prior knowledge and experience by citing or explaining relevant examples or concepts (e.g., cells get energy from glucose just as cars get energy from gas). |
| All lessons | [7] 3.4.1 [8] 3.4.1 | Identifying or explaining the main ideas in various types of texts (. i.e., recognizing or developing appropriate titles, generalizations, assertions). |
| All lessons | [7] 3.4.2 [8] 3.4.2 | Locating information in narrative and informative text to answer questions related to main ideas or key details. |
| All lessons | [7] 3.4.4 [8] 3.4.4 | Explaining connections among main ideas/concepts (text to self, text to text, text to world). |
| All lessons | [7] 3.5.1 [8] 3.5.1 | Completing a task by following written, multi-step directions (e.g., answer a multi-faceted text question). |
| All lessons | [7] 3.5.2 [8] 3.5.2 | Identifying the sequence of steps in a list of directions (e.g., what is the first step, what is the second step). |
| Alaska Writing PSGLE: Grades 6 – 8 | | |
| Grade 6 | | |
| Lesson | PSGLE | Descriptor |
| 1, 3, 4, 5 | [6] 2.1.1 | Writing a story or composition of at least two paragraphs with a topic sentence (which may include a lead or hook), maintaining a focused idea and including supporting details. |
| 1, 3, 4, 5 | [6] 2.1.2 | Using paragraph form: indents or uses paragraph breaks, and places paragraph breaks appropriately. |
| 1, 3, 4, 5 | [6] 2.1.3 | Organizing and sequencing ideas logically to establish clear relationships within and between paragraphs (e.g., using |

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| | | transition words or phrases that reveal order or chronology, comparison/contrast). |
| 1, 3, 4, 5 | [6] 2.1.4 | Writing a concluding statement. |
| All lessons | [6] 2.2.2 | Writing in a variety of nonfiction forms using appropriate information and structure (i.e., step-by-step directions, descriptions, observations, or report writing). |
| All lessons | [6] 2.2.4 | Using diagrams, charts or illustrations with captions or labels in research projects or extended reports. |
| All lessons | [6] 2.3.2 | Identifying and/or correcting mistakes in spelling (e.g., grade-appropriate, high-frequency words, homophones, and contractions). |
| All lessons | [6] 2.3.3 | Identifying and/or correcting mistakes in punctuation (i.e., quotation marks for dialogue, commas in dates, salutations and closings in letters, and commas in a series) and capitalization. |
| All lessons | [6] 2.3.4 | Identifying and/or correcting mistakes in usage (i.e., subject/verb agreement, verb tense, sentence fragments and run-on sentences, possessives, and pronouns). |
| Grade 7 | | |
| 1, 3, 4, 5 | [7] 3.1.1 | Writing a thesis statement that identifies the focus or controlling idea for the entire composition. |
| 1, 3, 4, 5 | [7] 3.1.2 | Writing in paragraphs that include relevant details and evidence that support the main idea of the paragraph and thesis statement. |
| 1, 3, 4, 5 | [7] 3.1.3 | Organizing ideas using appropriate structures (e.g., order by chronology, importance, comparison and contrast) to maintain the unity of the composition with a variety of transitional words and phrases. |
| 1, 3, 4, 5 | [7] 3.1.4 | Writing a conclusion that supports the thesis or summarizes the main ideas. |
| All lessons | [7] 3.3.2 | Applying rules of spelling (e.g., homophones, irregular plurals, and contractions). |
| All lessons | [7] 3.3.3 | Applying rules of punctuation (i.e., commas, quotation marks, and apostrophes). |
| All lessons | [7] 3.3.4 | Applying rules of capitalization (e.g., titles and proper nouns). |
| All lessons | [7] 3.3.5 | Applying rules of usage (i.e., verb tense, subject/verb agreement, possessives, pronouns, adjectives, adverbs, and sentence structure). |
| Grade 8 | | |
| 1, 3, 4, 5 | [8] 3.1.1 | Incorporating the thesis statement, which identifies the focus or controlling idea for the entire composition, into an introductory paragraph. |
| 1, 3, 4, 5 | [8] 3.1.2 | Writing in paragraphs that include relevant details and evidence that support the main idea of the paragraph and thesis statement. |
| 1, 3, 4, 5 | [8] 3.1.3 | Organizing ideas using appropriate structures (e.g., order by chronology, importance, comparison and contrast, classification and definition) to maintain the unity of the composition with a variety of transitional words and phrases. |
| 1, 3, 4, 5 | [8] 3.1.4 | Writing a concluding paragraph (e.g., restating the thesis and summarizing the main point). |
| All lessons | [8] 3.3.2 | Applying rules of spelling (e.g., homophones, irregular plurals, and contractions). |
| All lessons | [8] 3.3.3 | Applying rules of punctuation (i.e., commas, quotation marks, apostrophes, parentheses, and colons). |

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| All lessons | [8] 3.3.4 | Applying rules of capitalization (e.g., titles and proper nouns). |
| All lessons | [8] 3.3.5 | Applying rules of usage (i.e., verb tense, subject/verb agreement, possessives, pronouns, adjectives, adverbs, and sentence structure). |
| National Health Education Standards – Grades 6 – 8 Cited from National Health Education Standards, Pre K-12, American Cancer Society, 2 nd Edition, 2007 | | |
| Lesson | Standard | Performance Indicator |
| All lessons | 1.8.1 | Analyze the relationship between healthy behaviors and personal health. |
| 3 | 1.8.2 | Describe the interrelationship of emotional, intellectual, physical, and social health in adolescence. |
| All lessons | 1.8.3 | Analyze how the environment impacts personal health. |
| 3, 5 | 1.8.4 | Describe how family history can impact personal health. |
| 2, 3, 4, 5 | 1.8.5 | Describe ways to reduce or prevent injuries and other adolescent health problems. |
| 2, 3, 4, 5 | 1.8.7 | Describe the benefits and barriers to practicing healthy behaviors. |
| 2, 3, 4, 5 | 1.8.8 | Examine the likelihood of injury or illness if engaging in unhealthy behaviors. |
| 2, 3, 4, 5 | 1.8.9 | Examine the potential seriousness of injury or illness if engaging in unhealthy behaviors. |
| 2, 3, 5 | 2.8.1 | Examine how family influences the health of individuals. |
| 2, 3, 5 | 2.8.3 | Describe how peers influence healthy and unhealthy behaviors. |
| 2, 3, 5 | 2.8.5 | Analyze how messages from the media influence personal and family health. |
| 1, 2, 3, 5 | 2.8.8 | Explain the influence of personal values and beliefs on individual health practices and behaviors. |
| 2, 3, 4, 5 | 2.8.9 | Describe how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors. |
| 2, 3, 5 | 2.8.10 | Explain how school and public health policies can influence health promotion and disease prevention. |
| 2, 3, 4, 5 | 3.8.1 | Analyze the validity of health information, products, and services. |
| 2, 3, 5 | 3.8.4 | Describe situations that may require professional health services. |
| 2, 3, 4, 5 | 4.8.1 | Apply effective verbal and nonverbal communication skills to enhance health. |
| 2, 3, 5 | 5.8.1 | Identify circumstances that can help or hinder healthy decision-making. |
| 2, 3, 5 | 5.8.2 | Determine when health-related situations require the application of a thoughtful decision-making process. |
| 2, 3, 5 | 5.8.3 | Distinguish when individual or collaborative decision-making is appropriate. |
| 2, 3, 5 | 5.8.5 | Predict the potential short and long-term impact of each alternative on self and others. |
| 2, 3, 5 | 5.8.6 | Choose healthy alternatives over unhealthy alternatives when making a decision. |
| 1, 2, 3, 5 | 5.8.7 | Analyze the outcomes of a health-related decision. |
| 1, 2, 5 | 6.8.1 | Assess personal health practices. |
| 5 | 6.8.2 | Develop a goal to adopt, maintain, or improve a personal health practice. |

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| 5 | 6.8.3 | Apply strategies and skills needed to attain a personal health goal. |
| 2, 3, 5 | 6.8.4 | Describe how personal health goals can vary with changing abilities, priorities, and responsibilities. |
| 1, 2, 3, 5 | 7.8.1 | Explain the importance of assuming responsibility for personal health behaviors. |
| 2, 5 | 7.8.2 | Demonstrate healthy practices and behaviors that will maintain or improve the health of self and others. |
| 2, 5 | 7.8.3 | Demonstrate behaviors to avoid or reduce health risks to self and others. |
| All lessons | 8.8.1 | State a health enhancing position on a topic and support it with accurate information. |
| 2, 3, 5 | 8.8.2 | Demonstrate how to influence and support others to make positive health choices. |
| 2, 3, 5 | 8.8.4 | Identify ways that health messages and communication techniques can be altered for different audiences. |