HOW YOUR BRAIN UNDERSTANDS WHAT YOUR EAR HEARS		
North Dakota Science Content Standards: Grades 6 – 8		
Grade 6		
Lesson	**Standard**	**Benchmark Expectations**
4	**6.1.1.**	Construct a model to represent concepts, features, or phenomena in the real world (e.g., solar system, earth's interior).
4	**6.1.2.**	Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems.).
4	**6.1.3.**	Explain the connection between cause and effect in a system.
3, 4, 5	**6.2.1.**	Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replicable).
3, 4, 5	**6.2.2.**	Select alternative methods of scientific investigations (e.g., library, internet, field work) to address different kinds of questions.
3, 5	**6.2.4.**	Use appropriate tools and techniques to gather and analyze data.
3, 4, 5	**6.2.5.**	Use data from scientific investigations to determine relationships and patterns.
All lessons	**6.3.3.**	Identify different forms of energy (e.g., chemical, mechanical, heat, sound).
1, 3	**6.3.5.**	Explain how vibrations create wavelike disturbances that spread out from the source.
4	**6.6.3.**	Explain the relationship between science and technology.
1, 3, 4, 5	**6.8.1.**	Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work).
4	**6.8.2.**	Identify scientific advances that have resulted in new ideas and further advance.
Grade 7		
4	**7.1.1.**	Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division).
4, 5	**7.1.2.**	Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems).
4	**7.1.4.**	Identify the relationship between form and function (e.g., wings, fins and feet).
3, 4, 5	**7.2.1.**	Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions).
4	**7.3.1.**	Explain how forms of energy can be transferred. (e.g., photosynthesis, metabolism, battery).
4, 5	**7.4.2.**	Identify levels of organization in living systems (e.g., cells, tissues, organs, organ systems, organisms, ecosystems).
4	**7.6.1.**	Identify ways in which technology has influenced the course of history and improved the quality of life.
3, 4	**7.6.3.**	Identify intended benefits and unintended consequences that result from the development and use of technologies.
3, 4, 5	**7.7.1**	Explain how science affects personal health (e.g., injury prevention, immunization, organ transplant, medical scanning

		devices).
4, 5	**7.7.2.**	Identify the factors (e.g., pollution, heredity, diet, virus, bacteria, parasite) that may result in disease.
1, 3, 4, 5	**7.8.1.**	Explain how science is influenced by human qualities (e.g., reasoning, insightfulness, creativity, life-long learning).
Grade 8		
3, 4, 5	**8.2.2.**	Use evidence to generate descriptions, explanations, predictions, and models.
3	**8.2.3.**	Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data.
3	**8.2.4.**	Design and conduct a scientific investigation (e.g., making systematic observations, making accurate measurements, identifying and controlling variables).
1, 3	**8.3.6.**	Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves.
4, 5	**8.7.1.**	Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).
1	**8.8.1**	Explain how many people from various cultures have made important contributions to the advancement of science and technology.
North Dakota Mathematics Content Standards: Grades 6 – 8		
Grade 6		
Lesson	**Standard**	**Benchmark Expectations**
3	**6.1.9.**	Use order of operations, i.e., multiplication, division, addition and subtraction, to simplify numeric expressions.
3, 5	**6.1.13.**	Use problem solving strategies to solve and verify the results of problems.
3, 5	**6.3.1.**	Collect and organize data, select and use an appropriate display, i.e., a frequency table, a line and bar graph.
3	**6.3.6.**	Make predictions based on trends identified in tables and graphs.
3	**6.5.1.**	Identify and describe patterns represented by tables, graphs, and sequences.
Grade 7		
Lesson	**Standard**	**Benchmark Expectations**
3	**7.1.1.**	Use ratios and proportions to represent relationships.
3, 5	**7.1.4.**	Use integers to represent and compare quantities.
3, 5	**7.1.5.**	Explain the effects of arithmetic operations on fractions, decimals, and integers.
3	**7.1.6.**	Use order of operations (i.e., parentheses and operations) to simplify numeric expressions.
3	**7.1.10.**	Use proportions to solve problems.
3	**7.3.1.**	Formulate a question; collect, organize, and display data using a bar, line, and circle graph.
3	**7.4.5.**	Solve problems involving scale factors, using ratio and proportion.

3	**7.5.1.**	Create tables and graphs to analyze and describe patterns.
Grade 8		
Lesson	**Standard**	**Benchmark Expectations**
3	**8.1.2.**	Solve real-world problems involving ratio, proportion, and percent.
3	**8.1.5.**	Apply operation properties to simplify computations and solve problems, i.e., commutative, associative, and distributive.
3	**8.1.6.**	Apply the order of operations to simplify numeric expressions and solve problems.
3, 5	**8.1.7.**	Add, subtract, multiply, and divide integers.
3, 5	**8.1.8.**	Select and use a computational technique (e.g., mental calculation, paper-and-pencil, technology) to solve problems.
3, 5	**8.1.9.**	Determine when an estimate is sufficient and an exact answer is needed in problem situations.
3	**8.3.7.**	Make inferences based on analysis of data and interpretation of graphs.
3	**8.5.2.**	Use variables, expressions, and equations to represent problem situations.
North Dakota ELA Content Standards: Grades 6 – 8		
Grade 6		
Lesson	**Standard**	**Benchmark Expectations**
2	**6.1.1.**	Pose relevant research questions.
2	**6.1.2.**	Use sources that are appropriate for the research purpose.
2	**6.1.4.**	Use information from several sources.
2	**6.1.5.**	Write a research report.
All lessons	**6.2.3.**	Use word recognition skills and vocabulary building strategies to determine the meaning of unfamiliar words and make sense of text e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words, context clues, and word reference aids – dictionary, glossary, thesaurus, base words.
All lessons	**6.2.5.**	Use prior knowledge and experiences to aid text comprehension.
All lessons	**6.2.6.**	Read to be informed, entertained, and persuaded.
2, 3, 4, 5	**6.3.1.**	Produce informative writing e.g., research-based report, instructions.
	6.3.3.	Produce persuasive writing e.g., opinion, essay, business letter.
2, 3, 4, 5	**6.3.5.**	Use strategies to write for different audiences and purposes.
2, 3, 4, 5	**6.3.7.**	Incorporate grade-level appropriate vocabulary in writing.
2, 3, 4, 5	**6.3.10.**	Edit for grammar, mechanics, usage, and spelling.
3, 5	**6.3.11.**	Incorporate visual aids into written work.
All lessons	**6.4.4.**	Summarize key ideas of a speaker.

All lessons	**6.4.5.**	Use appropriate volume and eye contact when speaking.
1, 3, 4, 5	**6.5.2.**	Use technology according to the district's appropriate use policy.
2, 3, 4, 5	**6.6.1.**	Use grade-appropriate conventions of sentence structure i.e., simple, compound sentences, fragments, run-ons and declarative, interrogative, imperative, exclamatory.
2, 3, 4, 5	**6.6.3**	Use grade-appropriate mechanics and usage i.e., Capitalization: I, Proper Nouns, Proper Adjectives, and in sentences; Punctuation; end marks, quotation marks in dialogue, comma in a compound sentence, items in series, apostrophe, Usage: homonyms, spelling strategies for grade appropriate conventions of spelling.
Grade 7		
2	**7.1.1.**	Generate and evaluate questions relevant to research topic.
2	**7.1.2.**	Use a variety of sources, such as a computer, catalogues, magazines, and newspapers, to access information.
2	**7.1.7.**	Write a research report using a thesis statement.
All lessons	**7.2.2.**	Use graphic organizers, summarizing, paraphrasing, and vocabulary building strategies, including context clues, to enhance understanding and aid comprehension of the meaning of texts.
All lessons	**7.2.4.**	Use prior knowledge and experiences to aid text comprehension.
All lessons	**7.2.5.**	Read to be informed, entertained, and persuaded.
All lessons	**7.2.11.**	Use vocabulary building skills and strategies e.g., synonyms/antonyms, prefixes/suffixes, analogies, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus, to determine the meaning of unfamiliar words and make sense of text.
2	**7.3.1.**	Produce research-based writing e.g., news article, book reports, essay.
2, 3, 4, 5	**7.3.4.**	Use strategies to write for different audiences and purposes e.g., informative, narrative, persuasive.
2, 3, 4, 5	**7.3.6.**	Incorporate grade-level appropriate vocabulary in writing.
2, 3, 4, 5	**7.3.9.**	Edit for grammar, mechanics, usage, and spelling.
3, 5	**7.3.10.**	Incorporate visual aids in publications.
All lessons	**7.4.4.**	Construct questions in response to a speaker.
1, 3, 4, 5	**7.5.3.**	Assess the relevancy and accuracy of information in media messages.
2, 3, 4, 5	**7.6.1.**	Use grade-appropriate conventions of grammar i.e., capitalization: dialogue, title of people and things; punctuation: commas, quotation marks, apostrophes, colons/business letters and in time, underlining/italicizing; usage: double negatives.
2, 3, 4, 5	**7.6.3.**	Use grade-appropriate mechanics and usage i.e., capitalization.
Grade 8		
2	**8.1.1.**	Use questions to narrow research topic.
2	**8.1.5.**	Write a research report using a thesis.

All lessons	**8.2.2.**	Use prior knowledge and experiences to aid text comprehension.
All lessons	**8.2.3.**	Use a variety of strategies to construct meaning from text e.g., vocabulary building strategies, skimming, paraphrasing, summarizing, brainstorming, discussing.
All lessons	**8.2.4.**	Read for a variety of purposes to develop lifetime reading skills and habits, e.g., for personal recreation, to model forms of writing.
All lessons	**8.2.9.**	Use vocabulary building skills and strategies e.g., synonyms/antonyms, prefixes/suffixes, multiple meaning words context clues, word reference aids – dictionary, glossary, thesaurus, to determine the meaning of unfamiliar words and make sense of text.
All lessons	**8.2.10.**	Build vocabulary e.g., Greek and Latin roots, dictionary information, content area terminology.
2, 3, 4, 5	**8.3.1.**	Compose informative writing, e.g., research, biographies, autobiographies, news articles, interviews.
2, 3, 4, 5	**8.3.5.**	Use language and format appropriate for intended audience and purpose.
2, 3, 4, 5	**8.3.7.**	Incorporate grade-level appropriate vocabulary in writing.
2	**8.3.8.**	Use organizational patterns e.g., introduction, body, conclusion or exposition/body/resolution.
2, 3, 4, 5	**8.3.11.**	Edit for grammar, mechanics, usage, and spelling.
3, 5	**8.3.12.**	Incorporate a variety of visual aids in publications.
All lessons	**8.4.3**.	Speak for different purposes e.g., group discussions, research presentations and demonstrations.
1, 3, 4, 5	**8.5.2.**	Access media (e.g., television, film, music, electronic databases, videos, DVDs, comics, visual and performing arts, newspapers, and periodicals) for a variety of purposes.
2, 3, 4, 5	**8.6.3.**	Use grade-appropriate mechanics and usage i.e., capitalization: publications and in letters; punctuation: commas, semi colons, colons, quotation marks, underlining, hyphens, apostrophes; usage: misplaced modifiers.
North Dakota Health Content Standards: Grades 6 – 8		
Grade 6		
Lesson	**Standard**	**Benchmark**
3, 5	**6.1.3.**	Explain how body systems are affected by health behaviors (e.g., the effect of physical activity on the cardiovascular system).
3, 4, 5	**6.2.3.**	Identify the causes and prevention of common diseases and other health problems (e.g., asthma, diabetes, obesity, allergies, sexually transmitted disease/infection [STD/STI], cardio-vascular disease).
3, 5	**6.2.4.**	Explain the relationship between healthy behaviors (e.g., riding bikes, skateboards, rollerblades) and health risks (with or without protective equipment).
3, 5	**6.3.1.**	Describe ways external factors (e.g., family, peers, culture, media, technology) affect health in positive and negative ways (e.g., advertisements that promote or discourage tobacco and alcohol use; effects of TV, the internet and video games on physical activity).
3, 5	**6.3.2.**	Explain how the environment can affect personal health (e.g., second-hand smoke, available health care.

3, 5	**6.5.2.**	Describe the consequences of decisions regarding health behaviors (e.g., tobacco, alcohol, drugs, nutrition and physical activity) for oneself and others.
4	**6.6.1.**	Identify situations that require professional health services (e.g., depression, eating disorders, drug or alcohol usage).
5	**6.7.2.**	Describe ways to convey (e.g., power point presentation, group projects, posters) health information and ideas to individuals and groups.
Grades 7 & 8		
3, 5	**7-8.2.3.**	Explain how personal values and beliefs influence individual health practices (e.g., nutrition, personal hygiene, abstinence) and behaviors.
4	**7-8.2.4.**	Describe ways in which family history can have an impact on personal health (e.g., hereditary diseases).
3, 4, 5	**7-8.2.6.**	Identify the symptoms and treatment of common diseases and other health problems (e.g., allergies, communicable/non-communicable).
5	**7-8.2.7.**	Explain ways in which school and public health policies can influence health promotion and disease prevention (e.g., tobacco and wellness policies).
3, 5	**7-8.3.1.**	Analyze how external factors (e.g., family, peers, culture, media, technology) affect physical, mental, and social health in positive and negative ways (e.g., the effect of advertising on food choices, peer influences on internet usage).
3, 5	**7-8.3.2.**	Identify ways that physical environment (e.g., natural and man-made disasters, pollutants) influences the health of individuals.
5	**7-8.7.1.**	Describe strategies (e.g., compromise, active listening, knowledge of facts, assertiveness) to influence and work cooperatively with others to advocate for healthy individuals, families, and communities.