

4-H Curriculum Connections to the Virginia Standards of Learning

Animal Sciences, Veterinary Science 17632 Animal Diseases (Pub # 380-082)

- English 4.3 The student will read fiction and nonfiction with fluency and accuracy.
- Use context to clarify meanings of unfamiliar words.
 - Explain words with multiple meanings.
 - Use knowledge of word origins; synonyms, antonyms, and homonyms; and multiple meanings of words.
 - Use word-reference materials including the glossary, dictionary, and thesaurus.
- English 4.5 The student will read and demonstrate comprehension of nonfiction.
- Use text organizers, such as type, headings, and graphics to predict and categorize information.
 - Formulate questions that might be answered in the selection.
 - Explain the author's purpose.
 - Make simple inferences, using information from texts.
 - Draw conclusions, using information from texts.
 - Summarize content of selection, identifying important ideas, and providing details for each important idea.
 - Describe relationship between content and previously learned concepts or skills.
 - Distinguish between cause and effect and between fact and opinion.
 - Identify new information gained from reading.
- English 4.6 The student will demonstrate comprehension of information resources to research a topic.
- Construct questions about a topic.
 - Collect information, using the resources of the media center, including online, print, and media resources.
 - Evaluate and synthesize information.
- Science 4.1 The student will plan and conduct investigations in which
- distinctions are made among observations, conclusions, inferences, and predictions;
 - data are displayed using bar and basic line graphs;
 - appropriate instruments are selected to measure linear distance, volume, mass, and temperature;
 - appropriate metric measures are used to collect, record, and report data;

- predictions are made based on data from picture graphs, bar graphs, and basic line graphs;
- hypotheses are formulated based on cause and effect relationships;
- variables that must be held constant in an experimental situation are defined; and
- numerical data that are contradictory or unusual in experimental results are recognized.

Science 4.5 The student will investigate and understand how plants and animals in an ecosystem interact with one another and the nonliving environment. Key concepts include

- behavioral and structural adaptations;
- organization of communities;
- flow of energy through food webs;
- habitats and niches;
- life cycles; and
- influence of human activity on ecosystems.

English 5.4 The student will read fiction and nonfiction with fluency and accuracy.

- Use context to clarify meaning of unfamiliar words.
- Use knowledge of root words, prefixes, and suffixes.
- Use dictionary, glossary, thesaurus, and other word-reference materials.

English 5.6 The student will demonstrate comprehension of nonfiction.

- Use text organizers such as type, headings, and graphics, to predict and categorize information.
- Identify structural patterns found in nonfiction.
- Locate information to support opinions, predictions, and conclusions.
- Identify cause-and-effect relationships.
- Identify compare-and-contrast relationships.
- Skim materials to develop a general overview of content and to locate specific information.
- Identify new information gained from reading.

English 5.8 The student will write for a variety of purposes: to describe, to inform, to entertain, and to explain.

- Choose planning strategies for various writing purposes.
- Organize information.
- Demonstrate awareness of intended audience.
- Use precise and descriptive vocabulary to create tone and voice.
- Vary sentence structure.
- Revise writing for clarity.
- Use available technology to access information.

English 6.3 The student will read and learn the meanings of unfamiliar words.

- Identify word origins, derivations, and inflections.
- Identify analogies and figurative language.
- Use context and sentence structure to determine meanings and differentiate among multiple meanings of words.
- Use word-reference materials.

English 6.5 The student will demonstrate comprehension of a variety of informational selections.

- Identify questions to be answered.
- Make, confirm, or revise predictions.
- Use context to determine meanings of unfamiliar words and technical vocabulary.
- Draw conclusions and make inferences based on explicit and implied information.
- Organize the main idea and details to form a summary.
- Compare and contrast information about one topic contained in different selections.
- Select informational sources appropriate for a given purpose.

English 7.6 The student will read and demonstrate comprehension of a variety of informational texts.

- Use knowledge of text structures to aid comprehension.
- Use knowledge of words and phrases that signal an author's organizational pattern to aid comprehension.
- Distinguish fact from opinion in newspaper, magazines, and other print media.
- Identify the source, viewpoint, and purpose of texts.
- Describe how word choice and language structure convey an author's viewpoint.
- Summarize what is read.
- Organize and synthesize information for use in written and oral presentations.

Life Science (LS):

LS.3 The student will investigate and understand that living things show patterns of cellular organization. Key concepts include

- cells, tissues, organs, and systems, and
- life functions and processes of cells, tissues, organs, and systems (respiration, removal of wastes, growth, reproduction, digestion, and cellular transport).

LS.4 The student will investigate and understand that the basic needs of organisms must be met in order to carry out life processes. Key concepts include

- plant needs (light and energy sources, water, gases, nutrients);
- animal needs (food, water, gases, shelter, space); and

- factors that influence life processes.

LS.7 The student will investigate and understand that organisms within an ecosystem are dependent on one another and on nonliving components of the environment. Key concepts include

- interactions resulting in a flow of energy and matter throughout the system;
- complex relationships within terrestrial, freshwater, and marine ecosystems;
- energy flow in food webs and energy pyramids; and
- the carbon, water, and nitrogen cycles.

LS.9 The student will investigate and understand interactions among populations in a biological community. Key concepts include

- the relationship among producers, consumers, and decomposers in food chains and food webs;
- the relationship of predators and prey;
- competition and cooperation;
- symbiotic relationships; and
- niches.

LS.13 The student will investigate and understand that organisms reproduce and transmit genetic information to new generations. Key concepts include

- the role of DNA;
- the function of genes and chromosomes;
- genotypes and phenotypes;
- factors affecting the expression of traits;
- characteristics that can and cannot be inherited;
- genetic engineering and its applications; and
- historical contributions and significance of discoveries related to genetics.

English 8.6 The student will read, comprehend, and analyze a variety of information sources.

- Draw on background knowledge and knowledge of text structure to understand selections.
- Analyze author's credentials, viewpoint, and impact.
- Analyze author's use of text structure and word choice.
- Analyze details for relevance and accuracy.
- Read and follow instructions to complete an assigned task.
- Summarize and critique text.
- Evaluate and synthesize information to apply in written and oral presentations.
- Draw conclusions based on explicit and implied information.
- Make inferences based on explicit and implied information.

English 8.7 The student will write in a variety of forms, including narrative, expository,

persuasive, and informational.

- Use prewriting strategies to generate and organize ideas.
- Organize details to elaborate the central idea.
- Select specific vocabulary and information.
- Revise writing for word choice, sentence variety, and transitions among paragraphs.
- Use available technology.

English 9.4 The student will read and analyze a variety of informational materials (manuals, textbooks, business letters, newspapers, brochures, reports, catalogs) and nonfiction materials including journals, essays, speeches, biographies, and autobiographies.

- Identify a position/argument to be confirmed, disproved or modified.
- Evaluate clarity and accuracy of information.
- Synthesize information from sources and apply it in written and oral presentations.
- Identify questions not answered by a selected text.
- Extend general and specialized vocabulary through speaking, reading, and writing.
- Read and follow instructions to complete an assigned project or task.

English 9.6 The student will develop narrative, expository, and informational writings to inform, explain, analyze, or entertain.

- Generate, gather, and organize ideas for writing.
- Plan and organize writing to address a specific audience and purpose.
- Communicate clearly the purpose of the writing.
- Write clear, varied sentences.
- Use specific vocabulary and information.
- Arrange paragraphs into a logical progression.
- Revise writing for clarity.
- Proofread and prepare final product for intended audience and purpose.

English 10.10 The student will use writing to interpret, analyze, and evaluate ideas.

- Explain concepts contained in literature and other disciplines.
- Translate concepts into simpler or more easily understood terms.

English 10.11 The student will collect, evaluate, organize and present information.

- Organize information from a variety of sources.
- Develop the central idea or focus.
- Verify the accuracy and usefulness of information.
- Credit sources for both quoted and paraphrased ideas.
- Present information in an appropriate format, such as an oral presentation, written report, or visual product.
- Use technology to access information, organize ideas, and develop writing.

Biology (BIO)

BIO.1 The student will plan and conduct investigations in which

- observations of living organisms are recorded in the lab and in the field;
- hypotheses are formulated based on direct observations and information from the scientific literature;
- variables are defined and investigations are designed to test hypotheses;
- graphing and arithmetic calculations are used as tools in data analysis;
- conclusions are formed based on recorded quantitative and qualitative data;
- sources of error inherent in experimental design are identified and discussed;
- validity of data is determined;
- chemicals and equipment are used in a safe manner;
- alternative scientific explanations and models are recognized and analyzed;
- appropriate technology, including computers, graphing calculators, and probeware, is used for gathering and analyzing data and communicating results;
- research utilizes scientific literature.
- differentiation is made between scientific hypothesis and theory; and
- a scientific viewpoint is constructed and defended (the nature of science).

BIO.5 The student will investigate and understand life functions of archaebacteria, monerans (eubacteria), protists, fungi, plants, and animals, including humans.

Key concepts include

- how their structures and functions vary between and within kingdoms;
- comparison of their metabolic activities;
- analyses of their responses to the environment;
- maintenance of homeostasis;
- human health issues, human anatomy, body systems, and life functions; and
- how viruses compare with organisms.

BIO.6 The student will investigate and understand common mechanisms of inheritance and protein synthesis. Key concepts include

- cell growth and division;
- gamete formation;
- cell specialization;
- prediction of inheritance of traits based on the Mendelian laws of heredity;
- genetic variation (recombination, mutation, deletions, additions to DNA);
- the structure, function, and replication of nucleic acids (DNA and RNA);
- use, limitations, and misuse of genetic information;
- events involved in the construction of proteins; and
- exploration of the impact of DNA technologies.

English 11.4 The student will read and analyze a variety of informational materials.

- Use information from texts to clarify or refine understanding of academic concepts.

- Read and follow directions to complete an application for college admission, a scholarship, or for employment.
- Apply concepts and use vocabulary in informational and technical materials to complete a task.
- Generalize ideas from selections to make predictions about other texts.
- Analyze information from a text to draw conclusions.