

# 4-H Curriculum Connections to the Virginia Standards of Learning

## Animal Sciences, Veterinary Science 17631 The Normal Animal (Pub # 380-080)

- 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.
- 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.

- 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.
- Science 5.1 The student will plan and conduct investigations in which
- appropriate instruments are selected and used for making quantitative observations of length, mass, volume, and elapsed time;
  - rocks, minerals, and organisms are identified using a classification key;
  - data are collected, recorded, and reported using the appropriate graphical representation (graphs, charts, diagrams);
  - accurate measurements are made using basic tools (thermometer, meter stick, balance, graduated cylinder);
  - predictions are made using patterns and simple graphical data are extrapolated;
  - estimations of length, mass, and volume are made;
  - manipulated and responding variables are identified; and
  - an understanding of the nature of science is developed and reinforced.
- Science 5.5 The student will investigate and understand that organisms are made of cells and have distinguishing characteristics. Key concepts include
- basic cell structures and functions;
  - kingdoms of living things;
  - vascular and nonvascular plants; and

- vertebrates and invertebrates.

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.

Science 6.1 The student will plan and conduct investigations in which

- observations are made involving fine discrimination between similar objects and organisms;
- a classification system is developed based on multiple attributes;
- precise and approximate measures are recorded;
- scale models are used to estimate distance, volume, and quantity;
- hypotheses are stated in ways that identify the independent (manipulated) and dependent (responding) variables;
- a method is devised to test the validity of predictions and inferences;
- one variable is manipulated over time with many repeated trials;
- data are collected, recorded, analyzed, and reported using appropriate metric measurement;
- data are organized and communicated through graphical representation (graphs, charts, and diagrams);
- models are designed to explain a sequence; and
- an understanding of the nature of science is developed and reinforced.

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.2 The student will investigate and understand that all living things are composed of cells. Key concepts include
- cell structure and organelles (cell membrane, cell wall, cytoplasm, vacuole, mitochondrion, endoplasmic reticulum, nucleus, and chloroplast);
  - similarities and difference between plant and animal cells;
  - development of cell theory; and
  - cell division (mitosis and meiosis).
- 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.8 The student will investigate and understand that interactions exist among members of a population. Key concepts include:
- competition, cooperation, social hierarchy, territorial imperative; and
  - influence of behavior on a population.
- 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 webs;
  - the relationship of predators and prey;
  - competition and cooperation;
  - symbiotic relationships; and
  - niches.

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.

## 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).

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.

