EMERGING AND RE-EMERGING INFECTIOUS DISEASES		
Ohio Academic Content Standards for Science - Grade 10		
Activity	**Standard**	**Description**
2, 3	**Life 1.b**	Explain that living cells are the basic unit of structure and function of all living things.
2, 3, 4	**Life 1.d**	Explain that living cells are different from viruses.
1, 2, 3, 4	**Life 6**	Explain that a unit of hereditary information is called a gene, and genes may occur in different forms called alleles (e.g., gene for pea plant height has two alleles, tall and short).
3, 4	**Life 7**	Describe that spontaneous changes in DNA are mutations, which are a source of genetic variation. When mutations occur in sex cells, they may be passed on to future generations; mutations that occur in body cells may affect the functioning of that cell or the organism in which that cell is found.
3	**Life 13**	Explain that the variation of organisms within a species increases the likelihood that at least some members of a species will survive under gradually changing environmental conditions.
3, 4	**Life 15**	Explain how living things interact with biotic and abiotic components of the environment (e.g., predation, competition, natural disasters and weather).
2, 3, 4	**Life 17**	Conclude that ecosystems tend to have cyclic fluctuations around a state of approximate equilibrium that can change when climate changes, when one or more new species appear as a result of immigration or when one or more species disappear.
2, 3, 4	**Life 18**	Describe ways that human activities can deliberately or inadvertently alter the equilibrium in ecosystems. Explain how changes in technology/biotechnology can cause significant changes, either positive or negative, in environmental quality and carrying capacity.
3, 4	**Life 20**	Recognize that a change in gene frequency (genetic composition) in a population over time is a foundation of biological evolution.
3, 4	**Life 21**	Explain that natural selection provides the following mechanism for evolution; undirected variation in inherited characteristics exist within every species. These characteristics may give individuals an advantage or disadvantage compared to others in surviving and reproducing. The advantaged offspring are more likely to survive and reproduce. Therefore, the proportion of individuals that have advantageous characteristics will increase. When an environment changes, the survival value of some inherited characteristics may change.
1, 2, 3	**Life 26**	Use historical examples to explain how new ideas are limited by the context in which they are conceived. These ideas are often rejected by the scientific establishment; sometimes spring from unexpected findings; and usually grow slowly through contributions from many different investigators (e.g., biological evolution, germ theory, biotechnology and discovering germs).
2, 3, 4, 5	**Life 27**	Describe advances in life sciences that have important long-lasting effects on science and society (e.g., biological evolution, germ theory, biotechnology and discovering germs).

2, 3, 4, 5	**Life 28**	Analyze and investigate emerging scientific issues (e.g., genetically modified food, stem cell research, genetic research and cloning).
2, 3, 4, 5	**Sci & Tech 1**	Cite examples of ways that scientific inquiry is driven by the desire to understand the natural world and how technology is driven by the need to meet human needs and solve human problems.
2, 3, 4, 5	**Sci & Tech 2**	Describe examples of scientific advances and emerging technologies and how they may impact society.
4	**Inquiry 1**	Research and apply appropriate safety precautions when designing and conducting scientific investigations (e.g. OSHA, MSDS, eyewash, goggles and ventilation).
1, 2, 3, 4	**Inquiry 2**	Present scientific findings using clear language, accurate data, appropriate graphs, tables, maps and available technology.
2, 3, 4	**Inquiry 3**	Use mathematical models to predict and analyze natural phenomena.
All activities	**Inquiry 4**	Draw conclusions from inquiries based on scientific knowledge and principles, the use of logic and evidence (data) from investigations.
All activities	**Inquiry 5**	Explain how new scientific data can cause any existing scientific explanation to be supported, revised or rejected.
2, 3, 4	**Ways of Knowing 1**	Discuss science as a dynamic body of knowledge that can lead to the development of entirely new disciplines.
2, 3, 4, 5	**Ways of Knowing 2**	Describe that scientists may disagree about explanations of phenomena, about interpretation of data or about the value of rival theories, but they do agree that questioning, response to criticism and open communication are integral to the process of science.
2, 3, 4, 5	**Ways of Knowing 3**	Recognize that science is a systematic method of continuing investigation, based on observation, hypothesis testing, measurement, experimentation, and theory building, which leads to more adequate explanations of natural phenomena.
3, 4, 5	**Ways of Knowing 4**	Recognize that ethical considerations limit what scientists can do.
4	**Ways of Knowing 5**	Recognize that research involving voluntary human subjects should be conducted only with the informed consent of the subjects and follow rigid guidelines and/or laws.
Ohio Academic Content Standards for English Language Arts – Grades 9 & 10		
Activity	**Standard**	**Description**
All activities	**Vocabulary 1**	Define unknown words through context clues and the author's use of comparison, contrast and cause and effect.
All activities	**Reading Process 1**	Apply reading comprehension strategies, including making predictions, comparing and contrasting, recalling and summarizing and making inferences and drawing conclusions.
All activities	**Reading Process 2**	Answer literal, inferential, evaluative and synthesizing questions to demonstrate comprehension of grade-appropriate print texts and electronic and visual media.
All activities	**Reading Applications 3**	Analyze (9) / Evaluate the effectiveness of (10) information found in maps, charts, tables, graphs, diagrams, cutaways and overlays.

All activities	**Writing Process 4**	Determine a purpose and audience and plan strategies (e.g., adapting focus, content structure and point of view) to address purpose and audience.
All activities	**Writing Process 6**	Organize writing to create a coherent whole with an effective and engaging introduction, body and conclusion, and a closing sentence that summarizes, extends or elaborates on points or ideas in the writing.
All activities	**Writing Process 7**	Use a variety of sentence structures and lengths (e.g., simple, compound and complex sentences; parallel or repetitive sentence structure).
4, 5	**Writing Process 17**	Prepare for publication (e.g., for display or for sharing with others) writing that follows a manuscript form appropriate for the purpose, which could include such techniques as electronic resources, principles of design (e.g., margins, tabs, spacing and columns) and graphics (e.g., drawings, charts and graphs) to enhance the final product.
All activities	**Writing Applications 4.b, 4.d**	Write informational essays or reports, including research that: provide a clear and accurate perspective on the subject and support the main ideas with facts, details, examples and explanations from sources.
5	**Writing Applications 5.a, 5.b. 5.c**	Write persuasive compositions that: establish and develop a controlling idea; support arguments with detailed evidence; and exclude irrelevant information.
All activities	**Writing Applications 6**	Produce informal writings (e.g., journals, notes and poems) for various purposes.
All activities	**Writing Conventions 1**	Use correct spelling conventions.
2, 3, 4	**Research 1**	Compose open-ended questions for research, assigned or personal interest, and modify questions as necessary during inquiry and investigation to narrow the focus or extend the investigation.
All activities	**Research 4**	Compile (9) / Evaluate (10) and systematically organize important information, and select appropriate sources to support central ideas, concepts and themes.
All activities	**Research 7**	Use a variety of communication techniques, including oral, visual, written or multimedia reports, to present information that supports a clear position about the topic or research question and to maintain an appropriate balance between researched information and original ideas.
All activities	**Communication 1**	Apply active listening strategies (e.g., monitoring message for clarity, selecting and organizing essential information, noting cues such as changes in pace) in a variety of settings.
All activities	**Communication 8.a, 8.b, 8.c, 8.d**	Deliver informational presentations (e.g., expository, research) that: demonstrate an understanding of the topic and present events or ideas in a logical sequence; support the controlling idea or thesis with well-chosen and relevant facts, details, examples, quotations, statistics, stories and anecdotes; include an effective introduction and conclusion and use a consistent organizational structure (e.g., cause-effect, compare-contrast, problem-solution); and use appropriate visual materials (e.g., diagrams, charts, illustrations) and available technology to enhance presentation.
Ohio Academic Content Standards for Mathematics – Grades 9 & 10		
Grade 9		

Activity	Standard	Description
2, 4	**Number, Number Sense and Operations 4**	Demonstrate fluency in computations using real numbers.
4	**Patterns, Functions and Algebra 3**	Describe problem situations (linear, quadratic and exponential) by using tabular, graphical and symbolic representations.
4	**Data Analysis and Probability 1**	Classify data as univariate (single variable) or bivariate (two variables) and as quantitative (measurement) or qualitative (categorical) data.
4	**Data Analysis and Probability 4**	Describe and compare various types of studies (survey, observation, experiment), and identify possible misuses of statistical data.
4	**Data Analysis and Probability 6**	Make inferences about relationships in bivariate data, and recognize the difference between evidence of relationship (correlation) and causation.
Grade 10		
Activity	**Standard**	**Description**
4	**Patterns, Functions and Algebra 10**	Solve real-world problems that can be modeled using linear, quadratic, exponential or square root functions.
2, 4	**Data Analysis and Probability 2**	Represent and analyze bivariate data using appropriate graphical displays (scatterplots, parallel box-and-whisker plots, histograms with more than one set of data, tables, charts, spreadsheets) with and without technology.
4	**Data Analysis and Probability 3**	Display bivariate data where at least one variable is categorical.
2, 4	**Data Analysis and Probability 6**	Interpret the relationship between two variables using multiple graphical displays and statistical measures; e.g., scatterplots, parallel box-and-whisker plots, and measures of center and spread.
National Health Education Standards – Grades 9 – 12: cited from pre-publication document of National Health Education Standards, Pre K-12, American Cancer Society, December 2005 – August 2006		
Activity	**Standard**	**Performance Indicator**
3, 4	**1.12.1**	Predict how healthy behaviors can impact health status.

2, 3, 4	**1.12.5**	Propose ways to reduce or prevent injuries and health problems.
3, 4	**1.12.7**	Compare and contrast the benefits and barriers to practicing a variety of healthy behaviors.
4	**1.12.8**	Analyze personal susceptibility to injury, illness, or death if engaging in unhealthy behaviors.
4	**1.12.9**	Analyze the potential severity of injury or illness if engaging in unhealthy behaviors.
4	**2.12.1**	Analyze how family influences the health of individuals.
4	**2.12.5**	Evaluate the effect of media on personal and family health.
3, 4	**2.12.8**	Analyze the influence of personal values and beliefs on individual health practices and behaviors.
2, 3	**2.12.9**	Analyze how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.
2, 3, 4, 5	**2.12.10**	Analyze how public health policies and government regulations can influence health promotion and disease.
2, 3, 4, 5	**3.12.1**	Evaluate the validity of health information, products, and services.
3, 4	**5.12.1**	Examine barriers that can hinder healthy decision-making.
3, 4	**5.12.2**	Determine the value of applying a thoughtful decision-making process in health related situations.
3	**5.12.3**	Justify when individual or collaborative decision-making is appropriate.
3, 4	**5.12.5**	Predict the potential short and long-term impact of each alternative on self and others.
3, 4	**5.12.6**	Defend the healthy choice when making decisions.
3, 4	**5.12.7**	Evaluate the effectiveness of health-related decisions.
2, 3, 4	**7.12.1**	Analyze the role of individual responsibility for enhancing health.
2, 3, 4	**7.12.3**	Demonstrate a variety of behaviors to avoid or reduce health risks to self and others.
3, 4, 5	**8.12.2**	Demonstrate how to influence and support others to make positive health choices.
2, 3, 4, 5	**8.12.4**	Adapt health messages and communication techniques to a specific target audience.