

VIRGINIA ALIGNMENT FOR NIH SUPPLEMENT EMERGING AND RE-EMERGING INFECTIOUS DISEASES

EMERGING AND RE-EMERGING INFECTIOUS DISEASES

Virginia Biology Standards of Learning

Activity	Standard	Description
3	BIO.1.a	Plan and conduct investigations in which observations of living organisms are recorded in the lab and in the field.
2, 3	BIO.1.b	Plan and conduct investigations in which hypotheses are formulated based on direct observations and information from scientific literature.
3	BIO.1.c	Plan and conduct investigations in which variables are defined and investigations are designed to test hypotheses.
3, 4	BIO.1.d	Plan and conduct investigations in which graphing and arithmetic calculations are used as tools in data analysis.
2, 3, 4	BIO.1.e	Plan and conduct investigations in which conclusions are formed based on recorded quantitative and qualitative data.
3	BIO.1.h	Plan and conduct investigations in which chemicals and equipment are used in a safe manner.
2, 3, 4	BIO.1.j	Plan and conduct investigations in which research utilizes scientific literature.
3	BIO.1.k	Plan and conduct investigations in which differentiation is made between a scientific hypothesis and theory.
3, 4	BIO.1.l	Plan and conduct investigations in which alternative scientific explanations and models are recognized and analyzed.
2, 3, 4	BIO.1.m	Plan and conduct investigations in which a scientific viewpoint is constructed and defended (the nature of science).
3	BIO.2.a	Investigate and understand the history of scientific explanations of evidence supporting the cell theory.
2, 3	BIO.2.b	Investigate and understand the history of scientific explanations of the development of organisms through time (biological evolution).
2	BIO.2.c	Investigate and understand the history evidence supporting the germ theory of infectious disease.
	BIO.2.d	Investigate and understand the history of the development of the structural model of DNA.
2	BIO.2.e	Investigate and understand the history of the collaborative efforts of scientists, past and present.
3	BIO.4.a	Investigate and understand relationships between cell structure and function: characteristics of prokaryotic and eukaryotic cells.
3	BIO.5.c	Investigate and understand life functions of archaeobacteria, monerans (eubacteria), protists, fungi, plants, and animals including humans: analyses of their responses to the environment.
3	BIO.5.d	Investigate and understand life functions of archaeobacteria, monerans (eubacteria), protists, fungi, plants, and animals including humans: maintenance of homeostasis.
2, 3, 4	BIO.5.e	Investigate and understand life functions of archaeobacteria, monerans (eubacteria), protists, fungi, plants, and animals including humans: human health issues, human anatomy, body systems, and life functions.

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3, 4	BIO.5.f	Investigate and understand life functions of archaeobacteria, monerans (eubacteria), protists, fungi, plants, and animals including humans: how viruses compare with organisms.
3	BIO.6.e	Investigate and understand common mechanisms of inheritance and protein synthesis: genetic variation (mutation, recombination, deletions, additions to DNA).
2, 3, 4	BIO.8.b	Investigate and understand how populations change through time: how genetic variation, reproductive strategies, and environmental pressures impact the survival of populations.
2, 3	BIO.8.c	Investigate and understand how populations change through time: how natural selection leads to adaptations.
2, 3	BIO.8.d	Investigate and understand how populations change through time: emergence of new species.
2, 3	BIO.8.e	Investigate and understand how populations change through time: scientific explanations for biological evolution.

Virginia English Standards of Learning – Grades 9 & 10

Activity	Standard	Description
2, 3, 4, 5	9.4.a	Identify a position/argument to be confirmed, disproved, or modified.
All activities	9.4.c	Synthesize information from sources and apply it in written and oral presentations.
All activities	9.4.d	Identify questions not answered by a selected text.
All activities	9.4.e	Extend general and specialized vocabulary through speaking, reading, and writing.
All activities	9.4 .f	Read and follow instructions to complete an assigned project or task.
2, 3, 4, 5	9.6.a	Generate, gather, and organize ideas for writing.
2, 3, 4, 5	9.6.b	Plan and organize writing to address a specific audience and purpose.
2, 3, 4, 5	9.6.c	Communicate clearly the purpose of the writing.
2, 3, 4, 5	9.6.d	Write clear, varied sentences.
2, 3, 4, 5	9.6.e	Use specific vocabulary and information.
2, 3, 4, 5	9.6.f	Arrange paragraphs into a logical progression.
2, 3, 4, 5	10.1.a	Assume responsibility for specific group tasks.
2, 3, 4, 5	10.1.b	Participate in the preparation of an outline or summary of the group activity.
2, 3, 4, 5	10.1.c	Include all group members in oral presentation.
2, 3, 4, 5	10.1.d	Use grammatically correct language, including vocabulary appropriate to the topic, audience, and purpose.
2, 3, 4, 5	10.10.a	Use writing to interpret, analyze, and evaluate ideas: explain concepts contained in literature and other disciplines.

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2, 3, 4, 5	10.10.b	Use writing to interpret, analyze, and evaluate ideas: translate concepts into simpler or more easily understood terms.
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Virginia Mathematics Standards of Learning - Secondary

Activity	Standard	Description
2, 3, 4, 5	A.5	Create and use tabular, symbolic, graphical, verbal, and physical representations to analyze a given set of data for the existence of a pattern, determine the domain and range of relations, and identify the relations that are functions.
3, 4	AII.2	Add, subtract, multiply, divide, and simplify rational expressions, including complex fractions.
3, 4	PS.1	Analyze graphical displays of data, including dotplots, stemplots, and histograms, to identify and describe patterns and departures from patterns, using central tendency, spread, clusters, gaps, and outliers. Appropriate technology will be used to create graphical displays.
3	PS.8	Describe the methods of data collection in a census, sample survey, experiment, and observational study and identify an appropriate method of solution for a given problem setting.
3	PS.12	The student will identify and describe two or more events as complementary, dependent, independent, and/or mutually exclusive.

Virginia Health Standards of Learning – Grades 9 & 10

Activity	Standard	Description
3, 4	9.1.d	Apply health knowledge and skills to the development and analysis of personal goals to achieve and maintain long-term health and well-being including maintenance of health habits that promote personal wellness.
3, 4, 5	9.2	Analyze and evaluate the relationship among healthy behaviors, disease prevention and control, and comprehensive wellness.
All activities	9.4.b	Use various sources of information to evaluate global health issues including the benefits of information provided by recognized sources such as state and local health departments, the Food and Drug Administration (FDA), the National Institutes of Health (NIH), the World Health Organization (WHO), and the Centers for Disease Control and Prevention (CDC).
2, 4	10.2.f	Analyze, synthesize, and evaluate the protective factors related to achieving and maintaining a sound mind and healthy body throughout life including the effects of an individual’s environment.
4	10.2.g	Analyze, synthesize, and evaluate the protective factors related to achieving and maintaining a sound mind and healthy body throughout life including family health habits and behaviors as they relate to health promotion.

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4	10.4.a	Synthesize and evaluate available health information, products, and services for the value and potential impact on his/her well-being throughout life including marketing and advertising techniques to promote health.
3, 4, 5	10.4.b	Synthesize and evaluate available health information, products, and services for the value and potential impact on his/her well-being throughout life including the use of current technological tools to analyze health products and services.
3, 4, 5	10.4.c	Synthesize and evaluate available health information, products, and services for the value and potential impact on his/her well-being throughout life including involvement of local, state, and federal agencies in health-related issues.
1, 3, 4, 5	10.4.d	Synthesize and evaluate available health information, products, and services for the value and potential impact on his/her well-being throughout life including the impact of technology on the health status of individuals, families, communities, and the world.