

ARIZONA ALIGNMENT FOR NIH SUPPLEMENT HUMAN GENETIC VARIATION

HUMAN GENETIC VARIATION		
Arizona Science Academic Standards: High School		
Activity	Standard	Performance Objective
2, 3	SCHS-S1C1-01	Evaluate scientific information for relevance to a given problem.
3	SCHS-S1C1-02	Develop questions from observations that transition into testable hypotheses.
3	SCHS-S1C1-03	Formulate a testable hypothesis.
3	SCHS-S1C1-04	Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).
3	SCHS-S1C2-01	Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.
3	SCHS-S1C2-02	Identify the resources needed to conduct an investigation.
3	SCHS-S1C2-03	Design an appropriate protocol (written plan of action) for testing a hypothesis: <ul style="list-style-type: none"> • Identify dependent and independent variables in a controlled investigation. • Determine an appropriate method for data collection (e.g., using balances, thermometers, microscopes, spectrophotometer, using qualitative changes). • Determine an appropriate method for recording data (e.g., notes, sketches, photographs, videos, journals (logs), charts, computers/calculators).
3	SCHS-S1C2-04	Conduct a scientific investigation that is based on a research design.
1, 3, 4	SCHS-S1C2-05	Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.
2, 3, 4	SCHS-S1C3-01	Interpret data that show a variety of possible relationships between variables, including: positive relationship, negative relationship, or no relationship.
2, 3	SCHS-S1C3-02	Evaluate whether investigational data support or do not support the proposed hypothesis.
3	SCHS-S1C3-03	Critique reports of scientific studies (e.g., published papers, student reports).
3	SCHS-S1C3-04	Evaluate the design of an investigation to identify possible sources of procedural error, including: sample size, trials, controls, and analyses.
3, 4	SCHS-S1C4-01	For a specific investigation, choose an appropriate method for communicating the results.
1	SCHS-S1C4-02	Produce graphs that communicate data.
1, 2, 3, 4	SCHS-S1C4-03	Communicate results clearly and logically.
All activities	SCHS-S1C4-04	Support conclusions with logical scientific arguments.
2, 3	SCHS-S2C1-03	Analyze how specific changes in science have affected society.
2, 3	SCHS-S2C2-02	Explain the process by which accepted ideas are challenged or extended by scientific innovation.

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2, 3	SCHS-S2C2-04	Describe how scientists continue to investigate and critically analyze aspects of theories.
All activities	SCHS-S3C2-03	Support a position on a science or technology issue.
1, 2	SCHS-S4C2-03	Explain how genotypic variation occurs and results in phenotypic diversity.
2	SCHS-S4C4-01	Identify the following components of natural selection, which can lead to speciation: potential for a species to increase its numbers, genetic variability and inheritance of offspring due to mutation and recombination of genes, finite supply of resources required for life, and selection by the environment of those offspring better able to survive and produce offspring.
1, 2	SCHS-S4C4-02	Explain how genotypic and phenotypic variation can result in adaptations that influence an organism's success in an environment.
2, 3	SCHS-S4C4-03	Describe how the continuing operation of natural selection underlies a population's ability to adapt to changes in the environment and leads to biodiversity and the origin of new species.

Arizona Mathematics Academic Standards: High School

Activity	Standard	Performance Objective
2, 3, 4	MHS-S1C2-01	Select the grade-level appropriate operation to solve word problems.
2, 3, 4	MHS-S1C2-02	Solve word problems using grade-level appropriate operations and numbers.
2, 3, 4	MHS-S1C2-05	Use grade level-appropriate mathematical terminology.
1, 3	MHS-S2C1-01	Formulate questions to collect data in contextual situations.
1, 3, 4	MHS-S2C1-02	Organize collected data into an appropriate graphical representation.
1, 3, 4	MHS-S2C1-03	Display data as lists, tables, matrices, and plots.
1, 2, 3, 4	MHS-S2C1-09	Draw inferences from charts, tables, graphs, plots, or data sets.
1, 3, 4	MHS-S2C1-11	Evaluate the reasonableness of conclusions drawn from data analysis.
3, 4	MHS-S2C2-06	Distinguish between independent and dependent events.
3	MHS-S3C2-07	Express the relationship between two variables using tables/matrices, equations, or graphs.
3	MHS-S3C2-09	Interpret the relationship between data suggested by tables/matrices, equations, or graphs.
3	MHS-S5C2-04	Analyze assertions related to a contextual situation by using principles of logic.

Arizona Language Arts Academic Standards: Grades 9 & 10

Reading

Activity	Standard	Performance Objective
All activities	R09-S1C4-02 R10-S1C4-02	Infer word meanings from context (e.g., definition, example, restatement, comparison/contrast, cause/effect).

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All activities	R09-S1C6-02 R10-S1C6-02	Generate clarifying questions in order to comprehend text.
All activities	R09-S1C6-04 R10-S1C6-04	Connect information and events in text to experience and to related text and sources.
All activities	R09-S3C1-02 R10-S3C1-02	Distinguish: facts from opinions (9) / supported inferences from unsupported inferences (10) in expository selections such as editorials, newspaper articles, essays, reviews, and critiques, providing supporting evidence from the text.
All activities	R09-S3C1-04 R10-S3C1-04	Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs, and/or timelines.
All activities	R09-S3C1-05 R10-S3C1-05	Interpret graphic sources of information (e.g., charts, maps, diagrams, illustrations, tables, timelines, graphs) to support ideas.
All activities	R10-S3C1-07	Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
All activities	R09-S3C1-08 R10-S3C1-08	Support conclusions drawn from ideas (9) and concepts (10) in expository text.
All activities	R09-S3C2-01 R10-S3C2-01	Synthesize information from multiple sources (e.g., texts, maps, illustrations, workplace documents, schematic diagrams) to solve a problem.
All activities	R09-S3C2-02 R10-S3C2-02	Synthesize information from multiple sources (e.g., texts, maps, illustrations, workplace documents, schematic diagrams) to draw conclusions.
3	R09-S3C2-03	Identify the objective(s) of functional text (e.g., warranties, product information, technical manuals, consumer publications, workplace documents).
Writing		
Activity	Standard	Performance Objective
All activities	W09-S1C1-02 W10-S1C1-02	Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade, to explain) of an intended writing piece.
All activities	W09-S1C1-03 W10-S1C1-03	Determine the intended audience of a writing piece.
All activities	W09-S1C5-01 W10-S1C5-01	Prepare writing that follows a format appropriate for the purpose (e.g., for display, sharing with others, submitting to a publication).
All activities	W09-S1C5-03 W10-S1C5-03	Write legibly.
All activities	W09-S2C1-01 W10-S2C1-01	Maintain a clear, narrow focus to support the topic.
All activities	W09-S2C1-02 W10-S2C1-02	Write with an identifiable purpose and for a specific audience.

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All activities	W09-S2C1-03 W10-S2C1-03	Provide sufficient, relevant, and carefully selected details for support.
2, 3, 4, 5	W09-S2C1-04 W10-S2C1-04	Demonstrate a thorough, balanced explanation of the topic.
All activities	W09-S2C1-05 W10-S2C1-05	Include ideas and details that show original perspective and insights.
All activities	W09-S2C2-01 W10-S2C2-01	Use a structure that fits the type of writing (e.g., letter format, narrative, play, essay).
All activities	W09-S2C3-01 W10-S2C3-01	Show awareness of the audience through word choice, style, and an appropriate connection with, or distance from, the audience.
All activities	W09-S2C3-03 W10-S2C3-03	Choose appropriate voice (e.g., formal, informal, academic discourse) for the application.
All activities	W09-S2C3-05 W10-S2C3-05	Use language appropriate to purpose, topic, and audience.
All activities	W09-S2C6-09 W10-S2C6-09	Spell words correctly.
All activities	W09-S2C6-011 W10-S2C6-011	Demonstrate control of grammar and usage in writing.
2, 5	W09-S3C2-01 W10-S3C2-01	Write an explanatory, multi-paragraph essay.

Arizona Comprehensive Health Education Academic Standards - High School

Activity	Standard	Performance Objective
4, 5	1CH-P3-01	Identify personal health behaviors that promote and/or detract from the functioning of body systems.
4, 5	1CH-P3-02	Predict the impact of personal health behaviors that promote and or detract from the functioning of body systems (to include sleep, nutrition, exercise, sexual and substance abuse).
4, 5	1CH-P3-04	Determine strategies to reduce health risk for more healthy behavior.
4, 5	1CH-P4-01	Describe how problem solving skills relate to the influence that family, peers and the community have on a person's health.
2, 4, 5	1CH-P10-01	Define and provide examples of acute, chronic, communicable, noncommunicable, degenerative, metabolic, hereditary and congenital diseases.
2, 4	1CH-P10-02	Describe how race, culture and hereditary factors impact disease susceptibility: a) List environmental influences that affect disease susceptibility; b) Describe the impact of fitness, diet, rest and other lifestyle issues related to disease.

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3, 4, 5	1CH-P10-03	Evaluate disease prevention and control practices (e.g., immunization, pollution control and smoking cessation): a) Identify methods of early recognition of health problems; b) Identify their responsibility as active participants in treatment and rehabilitation.
4	1CH-D3-01	Critique the personal histories of individuals, from adolescence through late life, in relation to the health choices they made and the impact on their health status.
5	1CH-D8-01	Review NIH (National Institute of Health), CDC (Centers for Disease Control and Prevention) or WHO (World Health Organization) research on a specific health issue and explain how the publication of the research changed public policy (e.g., HIV/AIDS, Breast Cancer, TB, Hepatitis B).
4	3CH-P1-01	Describe the role of individual responsibility for the individual's physical, social, spiritual and psychological growth and development (e.g., adequate nutrition, recreation and fitness, eating disorders, sexual involvement, and alcohol, tobacco and other drug use).
4, 5	3CH-P3-02	Identify the short-term and long-term consequences of responsible and risky/harmful behaviors.
All activities	5CH-P1-01	Demonstrate the ability to: send clear and direct messages, verbally and nonverbally, listen to others, receiving and understanding their communication, ask for clarification when needed, and respond verbally and nonverbally.
4	6CH-P1-01	Demonstrate at least one effective strategy for reducing the probability of involvement in a risk behavior.
5	6CH-P2-01	Prepare a discussion analyzing health issues that require a collaborative decision (e.g., communicable disease, violence, environmental issues, sexual involvement).
4, 5	6CH-P3-01	Demonstrate the impact (immediate and long-term) of health decisions on the individual (e.g., use of tobacco, alcohol and other drugs, sexual behavior, nutrition, exercise, sleep).
4, 5	7CH-P2-01	Present information about health issues (e.g., nutrition, eating disorders, exercise, athletic needs, the environment, disease control, human sexuality, substance abuse, mental health, stress management).