

Main Criteria: Cogent Education's Interactive Cases
Secondary Criteria: Arizona Academic Standards
Subject: Science
Grades: 9, 10, 11, 12



Title	Common Among States	Arizona Academic Standards	Arizona Academic Standards	Arizona Academic Standards	Arizona Academic Standards
Action Potential -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; 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Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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). 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<p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.</p> <p>SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-01. - Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; 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The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. 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Diffusion -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>

<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C1-05. - Describe the purposes and processes of cellular reproduction.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p>	<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: Identify dependent and independent variables in a controlled investigation. 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(See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C1-05. - Describe the purposes and processes of cellular reproduction.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p>	<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: Identify dependent and independent variables in a controlled investigation. 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(See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C1-05. - Describe the purposes and processes of cellular reproduction.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>AZ.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p>	<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: Identify dependent and independent variables in a controlled investigation. 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(See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C1-05. - Describe the purposes and processes of cellular reproduction.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>AZ.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p>
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<p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>
<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>
<p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>	<p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>
<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>	<p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>
<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>
<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>
<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>
<p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p>	<p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p>	<p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>
<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p>
<p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p>	<p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p>
<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>

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Filtration -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; 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Membrane Potential -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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). 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(See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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Determine an appropriate method for recording data (e.g., notes, sketches, photographs, videos, journals (logs), charts, computers/calculators).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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(See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p>

<p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; 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Membrane Transport - AZ	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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<p>AZ.SCHS-S3. - Science in Personal and Social Perspectives SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem. SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology. SCHS-S3C2-03. - Support a position on a science or technology issue. AZ.SCHS-S4. - Life Science SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity. SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes. SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems. SCHS-S4C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems. AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently. AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented. WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>AZ.SCHS-S3. - Science in Personal and Social Perspectives SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem. 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AZ.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects WHST.11-12.1. - Write arguments focused on discipline-specific content. WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. 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The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Nitrogen Cycle -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p>

<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S2. - History and Nature of Science</p> <p>SCHS-S2C2. - Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.</p> <p>SCHS-S2C2-02. - Explain the process by which accepted ideas are challenged or extended by scientific innovation.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C1. - Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.</p> <p>SCHS-S3C1-02. - Describe the environmental effects of the following natural and/or human-caused hazards: Flooding; drought; earthquakes; fires; pollution; extreme weather.</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.</p> <p>SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.</p> <p>SCHS-S4C3. - Interdependence of Organisms: Analyze the relationships among various organisms and their environment.</p> <p>SCHS-S4C3-01. - Identify the relationships among organisms within populations, communities, ecosystems, and biomes.</p> <p>SCHS-S4C4. - Biological Evolution: Understand the scientific principles and processes involved in biological evolution.</p> <p>SCHS-S4C4-04. - Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p>	<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: Identify dependent and independent variables in a controlled investigation. 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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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S2. - History and Nature of Science</p> <p>SCHS-S2C2. - Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.</p> <p>SCHS-S2C2-02. - Explain the process by which accepted ideas are challenged or extended by scientific innovation.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C1. - Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.</p> <p>SCHS-S3C1-02. - Describe the environmental effects of the following natural and/or human-caused hazards: Flooding; drought; earthquakes; fires; pollution; extreme weather.</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.</p> <p>SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.</p> <p>SCHS-S4C3. - Interdependence of Organisms: Analyze the relationships among various organisms and their environment.</p> <p>SCHS-S4C3-01. - Identify the relationships among organisms within populations, communities, ecosystems, and biomes.</p> <p>SCHS-S4C4. - Biological Evolution: Understand the scientific principles and processes involved in biological evolution.</p> <p>SCHS-S4C4-04. - Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p>	<p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S2. - History and Nature of Science</p> <p>SCHS-S2C2. - Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.</p> <p>SCHS-S2C2-02. - Explain the process by which accepted ideas are challenged or extended by scientific innovation.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C1. - Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.</p> <p>SCHS-S3C1-02. - Describe the environmental effects of the following natural and/or human-caused hazards: Flooding; drought; earthquakes; fires; pollution; extreme weather.</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.</p> <p>SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.</p> <p>SCHS-S4C3. - Interdependence of Organisms: Analyze the relationships among various organisms and their environment.</p> <p>SCHS-S4C3-01. - Identify the relationships among organisms within populations, communities, ecosystems, and biomes.</p> <p>SCHS-S4C4. - Biological Evolution: Understand the scientific principles and processes involved in biological evolution.</p> <p>SCHS-S4C4-04. - Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p>
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<p>SCHS-S4C5-01. - Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>SCHS-S4C5-03. - Diagram the following biogeochemical cycles in an ecosystem: Water; carbon; nitrogen.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>SCHS-S4C5-01. - Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>SCHS-S4C5-03. - Diagram the following biogeochemical cycles in an ecosystem: Water; carbon; nitrogen.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>SCHS-S4C5-01. - Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p> <p>SCHS-S4C5-03. - Diagram the following biogeochemical cycles in an ecosystem: Water; carbon; nitrogen.</p> <p>AZ.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>
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Osmosis -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p>

<p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-03. - Explain the importance of water to cells.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C1-05. - Describe the purposes and processes of cellular reproduction.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-03. - Explain the importance of water to cells.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C1-05. - Describe the purposes and processes of cellular reproduction.</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. 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The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Photosynthesis -	AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p>

<p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S2. - History and Nature of Science</p> <p>SCHS-S2C2. - Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.</p> <p>SCHS-S2C2-02. - Explain the process by which accepted ideas are challenged or extended by scientific innovation.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C1. - Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.</p> <p>SCHS-S3C1-02. - Describe the environmental effects of the following natural and/or human-caused hazards: Flooding; drought; earthquakes; fires; pollution; extreme weather.</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-01. - Analyze the costs, benefits, and risks of various ways of dealing with the following needs or problems: various forms of alternative energy; storage of nuclear waste; abandoned mines; greenhouse gases; hazardous wastes.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-03. - Explain the importance of water to cells.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.</p> <p>SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.</p> <p>SCHS-S4C4. - Biological Evolution: Understand the scientific principles and processes involved in biological evolution.</p> <p>SCHS-S4C4-04. - Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-01. - Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p>	<p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. 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(See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p> <p>AZ.SCHS-S2. - History and Nature of Science</p> <p>SCHS-S2C2. - Nature of Scientific Knowledge: Understand how science is a process for generating knowledge.</p> <p>SCHS-S2C2-02. - Explain the process by which accepted ideas are challenged or extended by scientific innovation.</p> <p>AZ.SCHS-S3. - Science in Personal and Social Perspectives</p> <p>SCHS-S3C1. - Changes in Environments: Describe the interactions between human populations, natural hazards, and the environment.</p> <p>SCHS-S3C1-02. - Describe the environmental effects of the following natural and/or human-caused hazards: Flooding; drought; earthquakes; fires; pollution; extreme weather.</p> <p>SCHS-S3C2. - Science and Technology in Society: Develop viable solutions to a need or problem.</p> <p>SCHS-S3C2-01. - Analyze the costs, benefits, and risks of various ways of dealing with the following needs or problems: various forms of alternative energy; storage of nuclear waste; abandoned mines; greenhouse gases; hazardous wastes.</p> <p>SCHS-S3C2-02. - Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.</p> <p>SCHS-S3C2-03. - Support a position on a science or technology issue.</p> <p>AZ.SCHS-S4. - Life Science</p> <p>SCHS-S4C1. - The Cell: Understand the role of the cell and cellular processes.</p> <p>SCHS-S4C1-01. - Describe the role of energy in cellular growth, development, and repair.</p> <p>SCHS-S4C1-03. - Explain the importance of water to cells.</p> <p>SCHS-S4C1-04. - Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells: passive transport; active transport.</p> <p>SCHS-S4C2. - Molecular Basis of Heredity: Understand the molecular basis of heredity and resulting genetic diversity.</p> <p>SCHS-S4C2-01. - Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.</p> <p>SCHS-S4C4. - Biological Evolution: Understand the scientific principles and processes involved in biological evolution.</p> <p>SCHS-S4C4-04. - Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.</p> <p>SCHS-S4C5. - Matter, Energy, and Organization in Living Systems (Including Human Systems): Understand the organization of living systems, and the role of energy within those systems.</p> <p>SCHS-S4C5-01. - Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.</p> <p>SCHS-S4C5-02. - Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.</p>	<p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. 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<p>SCHS-54C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.SCHS-55. - Physical Science</p> <p>SCHS-55C5. - Interactions of Energy and Matter: Understand the interactions of energy and matter.</p> <p>SCHS-55C5-01. - Describe various ways in which matter and energy interact (e.g., photosynthesis, phase change).</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>SCHS-54C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.SCHS-55. - Physical Science</p> <p>SCHS-55C5. - Interactions of Energy and Matter: Understand the interactions of energy and matter.</p> <p>SCHS-55C5-01. - Describe various ways in which matter and energy interact (e.g., photosynthesis, phase change).</p> <p>AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>SCHS-54C5-05. - Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.</p> <p>AZ.SCHS-55. - Physical Science</p> <p>SCHS-55C5. - Interactions of Energy and Matter: Understand the interactions of energy and matter.</p> <p>SCHS-55C5-01. - Describe various ways in which matter and energy interact (e.g., photosynthesis, phase change).</p> <p>AZ.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; 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	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Synaptic Transmission - AZ	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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Evaluate appropriate resources.</p> <p>SCHS-S1C1-02. - Develop questions from observations that transition into testable hypotheses.</p> <p>SCHS-S1C1-03. - Formulate a testable hypothesis.</p> <p>SCHS-S1C1-04. - Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).</p> <p>SCHS-S1C2. - Scientific Testing (Investigating and Modeling): Design and conduct controlled investigations.</p> <p>SCHS-S1C2-03. - Design an appropriate protocol (written plan of action) for testing a hypothesis: 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).</p> <p>SCHS-S1C3. - Analysis, Conclusions, and Refinements: Evaluate experimental design, analyze data to explain results and propose further investigations. Design models.</p> <p>SCHS-S1C3-02. - Evaluate whether investigational data support or do not support the proposed hypothesis.</p> <p>SCHS-S1C4. - Communication: Communicate results of investigations.</p> <p>SCHS-S1C4-01. - For a specific investigation, choose an appropriate method for communicating the results. (See W09-S3C2-01 and W10-S3C3-01).</p> <p>SCHS-S1C4-03. - Communicate results clearly and logically. .</p> <p>SCHS-S1C4-04. - Support conclusions with logical scientific arguments.</p>	<p>AZ.SCHS-S1. - Inquiry Process</p> <p>SCHS-S1C1. - Observations, Questions, and Hypotheses: Formulate predictions, questions, or hypotheses based on observations. 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AZ.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently. AZ.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented. WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 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RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. AZ.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects WHST.11-12.1. - Write arguments focused on discipline-specific content. WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. 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