

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



Title	Common Among States	Tennessee Curriculum Standards	Tennessee Curriculum Standards	Tennessee Curriculum Standards	Tennessee Curriculum Standards
Action Potential -	TN	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - 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CLE 3216.1.4. - Describe the enzyme-substrate relationship. 3216.1. - Checks for Understanding 3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells. 3216.1.3. - Describe the composition and function of enzymes.</p> <p>3216.1.4. - Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated. 3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell. CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different. GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique? 3216.6. - Checks for Understanding 3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis. 3216.6.5. - Describe how the nervous and endocrine systems coordinate various body functions. 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CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different. GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique? 3216.6. - Checks for Understanding 3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis. 3216.6.5. - Describe how the nervous and endocrine systems coordinate various body functions. TN.3255. - Ecology CS.3255.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century. GQ.3255.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry? CLE 3255.Inq. - Course Level Expectations CLE 3255.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories. 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<p>3255.Inq.12. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3255.Inq.13. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>TN.3251. - Human Anatomy and Physiology</p> <p>CS.3251.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3251.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3251.Inq. - Course Level Expectations</p> <p>CLE 3251.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3251.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3251.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3251.Inq.6. - 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<p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CLE 3251.3.2. - Describe the structure, function, and developmental aspects of neurons and their supporting glial cells.</p> <p>CLE 3251.3.3. - Investigate the physiology of electrochemical impulses and neural integration.</p> <p>3251.3. - Checks for Understanding</p> <p>3251.3.2. - Identify the structure and function of cranial nerves, neurons, neuroglia, and neuromuscular junctions.</p> <p>3251.3.3. - Use a graphic organizer to trace the pathways and biochemical changes associated with conduction of an electrochemical impulse.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p>	<p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CLE 3251.3.2. - 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What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p>	<p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CLE 3251.3.2. - Describe the structure, function, and developmental aspects of neurons and their supporting glial cells.</p> <p>CLE 3251.3.3. - Investigate the physiology of electrochemical impulses and neural integration.</p> <p>3251.3. - Checks for Understanding</p> <p>3251.3.2. - Identify the structure and function of cranial nerves, neurons, neuroglia, and neuromuscular junctions.</p> <p>3251.3.3. - Use a graphic organizer to trace the pathways and biochemical changes associated with conduction of an electrochemical impulse.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - 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Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - 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<p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - 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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>TN.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>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - 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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) - 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	<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.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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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>
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Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - 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Checks for Understanding</p> <p>3210.3.3. - Conduct experiments to investigate photosynthesis and cellular respiration.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.3. - Compare and contrast photosynthesis and cellular respiration in terms of energy transformation.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - 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Determine why a conclusion is free of bias.</p> <p>3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>3216.T/E. - Checks for Understanding</p> <p>3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p>	<p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>SPI 3210.1.8. - Compare and contrast active and passive transport.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.3. - Investigate the relationship between the processes of photosynthesis and cellular respiration.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.3. - Conduct experiments to investigate photosynthesis and cellular respiration.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.3. - Compare and contrast photosynthesis and cellular respiration in terms of energy transformation.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - 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The lymphatic system bathes the body in extracellular fluid and works with the cardiovascular system to provide immunity and regulate fat metabolism.</p> <p>GQ.3251.4. - How does the cardiovascular system transport substances that maintain homeostasis? What mechanisms are involved in staying healthy though the immune responses?</p> <p>CLE 3251.4. - Course Level Expectations</p> <p>CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure.</p> <p>3251.4. - Checks for Understanding</p> <p>3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs.</p> <p>CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance.</p> <p>GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? How does the urinary system maintain the homeostatic balance of internal fluids?</p> <p>CLE 3251.5. - Course Level Expectations</p> <p>CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption.</p> <p>3251.5. - Checks for Understanding</p> <p>3251.5.2. - Contrast mechanical and chemical digestion</p> <p>3251.5.4. - Identify the enzymes and biochemical reactions that facilitate digestion.</p> <p>3251.5.5. - Explain how the products of digestion are absorbed.</p>	<p>CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole.</p> <p>GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?</p> <p>CLE 3251.1. - Course Level Expectations</p> <p>CLE 3251.1.1. - Distinguish between anatomy and physiology.</p> <p>CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems.</p> <p>CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions.</p> <p>CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis.</p> <p>3251.1. - Checks for Understanding</p> <p>3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map.</p> <p>3251.1.3. - Use prepared slides to distinguish among different types of tissues.</p> <p>3251.1.4. - Classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration (3) transport, and (4) absorption and excretion.</p> <p>3251.1.5. - Identify the major organs and describe the functions of each body system.</p> <p>3251.1.7. - Apply correct terminology to reference anatomical orientation.</p> <p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CS.3251.4. - Transport: The cardiovascular system transports materials pumped by the heart through blood vessels to all parts of the body. 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How does the urinary system maintain the homeostatic balance of internal fluids?</p> <p>CLE 3251.5. - Course Level Expectations</p> <p>CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption.</p> <p>3251.5. - Checks for Understanding</p> <p>3251.5.2. - Contrast mechanical and chemical digestion</p> <p>3251.5.4. - Identify the enzymes and biochemical reactions that facilitate digestion.</p> <p>3251.5.5. - Explain how the products of digestion are absorbed.</p>	<p>CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole.</p> <p>GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?</p> <p>CLE 3251.1. - Course Level Expectations</p> <p>CLE 3251.1.1. - Distinguish between anatomy and physiology.</p> <p>CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems.</p> <p>CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions.</p> <p>CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis.</p> <p>3251.1. - Checks for Understanding</p> <p>3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map.</p> <p>3251.1.3. - Use prepared slides to distinguish among different types of tissues.</p> <p>3251.1.4. - Classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration (3) transport, and (4) absorption and excretion.</p> <p>3251.1.5. - Identify the major organs and describe the functions of each body system.</p> <p>3251.1.7. - Apply correct terminology to reference anatomical orientation.</p> <p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CS.3251.4. - Transport: The cardiovascular system transports materials pumped by the heart through blood vessels to all parts of the body. 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<p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.2. - Differentiate between variables and controls in an experiment and select appropriate variables for an experiment.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - 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<p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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> <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>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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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Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - 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<p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.4. - Describe the processes of cell growth and reproduction.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.4. - Identify positive tests for carbohydrates, lipids, and proteins.</p> <p>SPI 3210.1.6. - Determine the relationship between cell growth and cell reproduction.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p>	<p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.4. - Describe the processes of cell growth and reproduction.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>SPI 3210.1. - 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Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p>	<p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.4. - Describe the processes of cell growth and reproduction.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.4. - Identify positive tests for carbohydrates, lipids, and proteins.</p> <p>SPI 3210.1.6. - Determine the relationship between cell growth and cell reproduction.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p>	<p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.4. - Describe the processes of cell growth and reproduction.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.4. - Identify positive tests for carbohydrates, lipids, and proteins.</p> <p>SPI 3210.1.6. - Determine the relationship between cell growth and cell reproduction.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p>
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3216.Inq.8. - Defend a conclusion based on scientific evidence.	3216.Inq.8. - Defend a conclusion based on scientific evidence.	3216.Inq.8. - Defend a conclusion based on scientific evidence.	3216.Inq.8. - Defend a conclusion based on scientific evidence.
3216.Inq.9. - Determine why a conclusion is free of bias.	3216.Inq.9. - Determine why a conclusion is free of bias.	3216.Inq.9. - Determine why a conclusion is free of bias.	3216.Inq.9. - Determine why a conclusion is free of bias.
3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.	3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.	3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.	3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.
3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.	3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.	3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.	3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.
CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.
GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?	GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?	GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?	GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?
3216.T/E. - Checks for Understanding	3216.T/E. - Checks for Understanding	3216.T/E. - Checks for Understanding	3216.T/E. - Checks for Understanding
3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.	3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.	3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.	3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.
CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.	CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.	CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.	CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.
GQ.3216.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?	GQ.3216.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?	GQ.3216.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?	GQ.3216.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?
CLE 3216.Math. - Course Level Expectations	CLE 3216.Math. - Course Level Expectations	CLE 3216.Math. - Course Level Expectations	CLE 3216.Math. - Course Level Expectations
CLE 3216.Math.1. - Understand the mathematical principles associated with the science of biology.	CLE 3216.Math.1. - Understand the mathematical principles associated with the science of biology.	CLE 3216.Math.1. - Understand the mathematical principles associated with the science of biology.	CLE 3216.Math.1. - Understand the mathematical principles associated with the science of biology.
CLE 3216.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.	CLE 3216.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.	CLE 3216.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.	CLE 3216.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.
3216.Math. - Checks for Understanding	3216.Math. - Checks for Understanding	3216.Math. - Checks for Understanding	3216.Math. - Checks for Understanding
3216.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.	3216.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.	3216.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.	3216.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.
3216.Math.6. - Apply geometric properties, formulas, and relationships to interpret biological phenomena.	3216.Math.6. - Apply geometric properties, formulas, and relationships to interpret biological phenomena.	3216.Math.6. - Apply geometric properties, formulas, and relationships to interpret biological phenomena.	3216.Math.6. - Apply geometric properties, formulas, and relationships to interpret biological phenomena.
CS.3216.1. - Cells: All living things are made of cells that perform functions necessary for life.	CS.3216.1. - Cells: All living things are made of cells that perform functions necessary for life.	CS.3216.1. - Cells: All living things are made of cells that perform functions necessary for life.	CS.3216.1. - Cells: All living things are made of cells that perform functions necessary for life.
GQ.3216.1. - How are cells organized to carry on the processes of life?	GQ.3216.1. - How are cells organized to carry on the processes of life?	GQ.3216.1. - How are cells organized to carry on the processes of life?	GQ.3216.1. - How are cells organized to carry on the processes of life?
CLE 3216.1. - Course Level Expectations	CLE 3216.1. - Course Level Expectations	CLE 3216.1. - Course Level Expectations	CLE 3216.1. - Course Level Expectations
CLE 3216.1.1. - Compare the characteristics of prokaryotic and eukaryotic cells.	CLE 3216.1.1. - Compare the characteristics of prokaryotic and eukaryotic cells.	CLE 3216.1.1. - Compare the characteristics of prokaryotic and eukaryotic cells.	CLE 3216.1.1. - Compare the characteristics of prokaryotic and eukaryotic cells.
CLE 3216.1.3. - Explain how materials move into and out of cells.	CLE 3216.1.3. - Explain how materials move into and out of cells.	CLE 3216.1.3. - Explain how materials move into and out of cells.	CLE 3216.1.3. - Explain how materials move into and out of cells.
CLE 3216.1.5. - Investigate how proteins regulate the internal environment of a cell through communication and transport.	CLE 3216.1.5. - Investigate how proteins regulate the internal environment of a cell through communication and transport.	CLE 3216.1.5. - Investigate how proteins regulate the internal environment of a cell through communication and transport.	CLE 3216.1.5. - Investigate how proteins regulate the internal environment of a cell through communication and transport.
3216.1. - Checks for Understanding	3216.1. - Checks for Understanding	3216.1. - Checks for Understanding	3216.1. - Checks for Understanding
3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.	3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.	3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.	3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.
3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.	3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.	3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.	3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.
CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.	CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.	CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.	CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.
GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?	GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?	GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?	GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?
CLE 3216.3. - Course Level Expectations	CLE 3216.3. - Course Level Expectations	CLE 3216.3. - Course Level Expectations	CLE 3216.3. - Course Level Expectations
CLE 3216.3.4. - Examine how macromolecules are synthesized from simple precursor molecules.	CLE 3216.3.4. - Examine how macromolecules are synthesized from simple precursor molecules.	CLE 3216.3.4. - Examine how macromolecules are synthesized from simple precursor molecules.	CLE 3216.3.4. - Examine how macromolecules are synthesized from simple precursor molecules.
3216.3. - Checks for Understanding	3216.3. - Checks for Understanding	3216.3. - Checks for Understanding	3216.3. - Checks for Understanding
3216.3.8. - Build models of macromolecules from simple precursors.	3216.3.8. - Build models of macromolecules from simple precursors.	3216.3.8. - Build models of macromolecules from simple precursors.	3216.3.8. - Build models of macromolecules from simple precursors.
CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different.	CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different.	CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different.	CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different.
GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique?	GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique?	GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique?	GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique?
3216.6. - Checks for Understanding	3216.6. - Checks for Understanding	3216.6. - Checks for Understanding	3216.6. - Checks for Understanding
3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis.	3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis.	3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis.	3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis.
TN.3255. - Ecology	TN.3255. - Ecology	TN.3255. - Ecology	TN.3255. - Ecology

CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.	CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.
GQ.3251.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life? 3251.T/E. - Checks for Understanding 3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry. CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole. GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis? CLE 3251.1. - Course Level Expectations CLE 3251.1.1. - Distinguish between anatomy and physiology. CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems. CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions. CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis. 3251.1. - Checks for Understanding 3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map. 3251.1.4. - Classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration (3) transport, and (4) absorption and excretion. 3251.1.7. - Apply correct terminology to reference anatomical orientation. 3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis. 3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels. CS.3251.4. - Transport: The cardiovascular system transports materials pumped by the heart through blood vessels to all parts of the body. The lymphatic system bathes the body in extracellular fluid and works with the cardiovascular system to provide immunity and regulate fat metabolism. GQ.3251.4. - How does the cardiovascular system transport substances that maintain homeostasis? What mechanisms are involved in staying healthy though the immune responses?	GQ.3251.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life? 3251.T/E. - Checks for Understanding 3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry. CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole. GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis? CLE 3251.1. - Course Level Expectations CLE 3251.1.1. - Distinguish between anatomy and physiology. CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems. CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions. CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis. 3251.1. - Checks for Understanding 3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map. 3251.1.4. - Classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration (3) transport, and (4) absorption and excretion. 3251.1.7. - Apply correct terminology to reference anatomical orientation. 3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis. 3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels. CS.3251.4. - Transport: The cardiovascular system transports materials pumped by the heart through blood vessels to all parts of the body. The lymphatic system bathes the body in extracellular fluid and works with the cardiovascular system to provide immunity and regulate fat metabolism. GQ.3251.4. - How does the cardiovascular system transport substances that maintain homeostasis? What mechanisms are involved in staying healthy though the immune responses?	GQ.3251.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life? 3251.T/E. - Checks for Understanding 3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry. CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole. GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis? CLE 3251.1. - Course Level Expectations CLE 3251.1.1. - Distinguish between anatomy and physiology. CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems. CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions. 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GQ.3251.4. - How does the cardiovascular system transport substances that maintain homeostasis? What mechanisms are involved in staying healthy though the immune responses?
CLE 3251.4. - Course Level Expectations CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure. 3251.4. - Checks for Understanding 3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs. CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance. GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? How does the urinary system maintain the homeostatic balance of internal fluids? CLE 3251.5. - Course Level Expectations CLE 3251.5.1. - Identify organs of the digestive and urinary systems and describe their functions. CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption. 3251.5. - Checks for Understanding 3251.5.1. - Compare the structure and function of organs in the digestive system. 3251.5.3. - Trace a selected food through the alimentary canal. TN.3295. - Scientific Research CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.	CLE 3251.4. - Course Level Expectations CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure. 3251.4. - Checks for Understanding 3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs. CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance. GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? How does the urinary system maintain the homeostatic balance of internal fluids? CLE 3251.5. - Course Level Expectations CLE 3251.5.1. - Identify organs of the digestive and urinary systems and describe their functions. CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption. 3251.5. - Checks for Understanding 3251.5.1. - Compare the structure and function of organs in the digestive system. 3251.5.3. - Trace a selected food through the alimentary canal. TN.3295. - Scientific Research CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.	CLE 3251.4. - Course Level Expectations CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure. 3251.4. - Checks for Understanding 3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs. CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance. GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? How does the urinary system maintain the homeostatic balance of internal fluids? CLE 3251.5. - Course Level Expectations CLE 3251.5.1. - Identify organs of the digestive and urinary systems and describe their functions. CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption. 3251.5. - Checks for Understanding 3251.5.1. - Compare the structure and function of organs in the digestive system. 3251.5.3. - Trace a selected food through the alimentary canal. TN.3295. - Scientific Research CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.	CLE 3251.4. - Course Level Expectations CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure. 3251.4. - Checks for Understanding 3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs. CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance. GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? How does the urinary system maintain the homeostatic balance of internal fluids? CLE 3251.5. - Course Level Expectations CLE 3251.5.1. - Identify organs of the digestive and urinary systems and describe their functions. CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption. 3251.5. - Checks for Understanding 3251.5.1. - Compare the structure and function of organs in the digestive system. 3251.5.3. - Trace a selected food through the alimentary canal. TN.3295. - Scientific Research CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.

GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?
3295.1. - Checks for Understanding
3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.
CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.
GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.
3295.2.10. - Analyze questions using technology and mathematical models.
3295.2.12. - Write narrative descriptions of observed scientific phenomena.
CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.
GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?
CLE 3295.3. - Course Level Expectations
CLE 3295.3.1. - Formulate a working hypothesis to guide research.
3295.3. - Checks for Understanding
3295.3.1. - Develop a testable question for a scientific investigation.
3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.
3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.
CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.
GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?
CLE 3295.4. - Course Level Expectations
CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.
3295.4. - Checks for Understanding
3295.4.6. - State a conclusion in terms of the relationship between two or more variables.
3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.
3295.4.10. - Suggest alternative explanations for the same observations.
3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.
3295.4.12. - Develop alternative hypotheses.
3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.
3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.
CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.
GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?
CLE 3295.5. - Course Level Expectations
CLE 3295.5.2. - Communicate findings in order to extend the research base.
3295.5. - Checks for Understanding
3295.5.2. - Apply proper grammatical conventions to written communication.
3295.5.4. - Organize written communication with clarity and cohesion.

GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?
3295.1. - Checks for Understanding
3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.
CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.
GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.
3295.2.10. - Analyze questions using technology and mathematical models.
3295.2.12. - Write narrative descriptions of observed scientific phenomena.
CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.
GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?
CLE 3295.3. - Course Level Expectations
CLE 3295.3.1. - Formulate a working hypothesis to guide research.
3295.3. - Checks for Understanding
3295.3.1. - Develop a testable question for a scientific investigation.
3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.
3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.
CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.
GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?
CLE 3295.4. - Course Level Expectations
CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.
3295.4. - Checks for Understanding
3295.4.6. - State a conclusion in terms of the relationship between two or more variables.
3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.
3295.4.10. - Suggest alternative explanations for the same observations.
3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.
3295.4.12. - Develop alternative hypotheses.
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3295.5. - Checks for Understanding
3295.5.2. - Apply proper grammatical conventions to written communication.
3295.5.4. - Organize written communication with clarity and cohesion.

GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?
3295.1. - Checks for Understanding
3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.
CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.
GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.
3295.2.10. - Analyze questions using technology and mathematical models.
3295.2.12. - Write narrative descriptions of observed scientific phenomena.
CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.
GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?
CLE 3295.3. - Course Level Expectations
CLE 3295.3.1. - Formulate a working hypothesis to guide research.
3295.3. - Checks for Understanding
3295.3.1. - Develop a testable question for a scientific investigation.
3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.
3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.
CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.
GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?
CLE 3295.4. - Course Level Expectations
CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.
3295.4. - Checks for Understanding
3295.4.6. - State a conclusion in terms of the relationship between two or more variables.
3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.
3295.4.10. - Suggest alternative explanations for the same observations.
3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.
3295.4.12. - Develop alternative hypotheses.
3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.
3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.
CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.
GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?
CLE 3295.5. - Course Level Expectations
CLE 3295.5.2. - Communicate findings in order to extend the research base.
3295.5. - Checks for Understanding
3295.5.2. - Apply proper grammatical conventions to written communication.
3295.5.4. - Organize written communication with clarity and cohesion.

GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?
3295.1. - Checks for Understanding
3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.
CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.
GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.
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CLE 3295.3. - Course Level Expectations
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GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?
CLE 3295.4. - Course Level Expectations
CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.
3295.4. - Checks for Understanding
3295.4.6. - State a conclusion in terms of the relationship between two or more variables.
3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.
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3295.4.12. - Develop alternative hypotheses.
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3295.5. - Checks for Understanding
3295.5.2. - Apply proper grammatical conventions to written communication.
3295.5.4. - Organize written communication with clarity and cohesion.

<p>TN.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>TN.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>TN.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>TN.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>TN.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.11-12.9. - 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>TN.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> <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>TN.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.11-12.9. - 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>TN.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> <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>
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		<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.9-10.3(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(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(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>
Filtration -	TN	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - 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CLE 3216.1.3. - Explain how materials move into and out of cells. 3216.1. - Checks for Understanding 3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells. 3216.1.2. - Conduct an experiment or simulation to demonstrate the movement of molecules through diffusion, facilitated diffusion, and active transport. CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different. GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique? 3216.6. - Checks for Understanding 3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis. TN.3255. - Ecology CS.3255.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century. GQ.3255.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry? CLE 3255.Inq. - Course Level Expectations CLE 3255.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories. CLE 3255.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias. CLE 3255.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.

<p>CLE 3255.Inq.6. - Communicate and defend scientific findings.</p> <p>3255.Inq. - Checks for Understanding</p> <p>3255.Inq.1. - Develop a testable question for a scientific investigation.</p> <p>3255.Inq.2. - Develop an experimental design for testing a hypothesis.</p> <p>3255.Inq.3. - Select appropriate independent, dependent, or controlled variables for an experiment.</p> <p>3255.Inq.4. - Perform an experiment to test a prediction.</p> <p>3255.Inq.5. - Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p> <p>3255.Inq.8. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3255.Inq.9. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3255.Inq.10. - Suggest alternative explanations for the same observations.</p> <p>3255.Inq.12. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3255.Inq.13. - 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The lymphatic system bathes the body in extracellular fluid and works with the cardiovascular system to provide immunity and regulate fat metabolism.</p> <p>GQ.3251.4. - How does the cardiovascular system transport substances that maintain homeostasis? What mechanisms are involved in staying healthy though the immune responses?</p> <p>CLE 3251.4. - Course Level Expectations</p> <p>CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure.</p> <p>3251.4. - Checks for Understanding</p> <p>3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs.</p> <p>CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance.</p> <p>GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? 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The lymphatic system bathes the body in extracellular fluid and works with the cardiovascular system to provide immunity and regulate fat metabolism.</p> <p>GQ.3251.4. - How does the cardiovascular system transport substances that maintain homeostasis? What mechanisms are involved in staying healthy though the immune responses?</p> <p>CLE 3251.4. - Course Level Expectations</p> <p>CLE 3251.4.5. - Describe the physiological basis of circulation and blood pressure.</p> <p>3251.4. - Checks for Understanding</p> <p>3251.4.8. - Draw a diagram that traces the pathway of blood through the heart and lungs.</p> <p>CS.3251.5. - Absorption and Excretion: The digestive system takes in food and changes it to a usable form. The urinary system removes wastes and maintains osmotic balance.</p> <p>GQ.3251.5. - How does the digestive system convert food into the raw materials that build and fuel the body's cells? How does the urinary system maintain the homeostatic balance of internal fluids?</p> <p>CLE 3251.5. - Course Level Expectations</p> <p>CLE 3251.5.1. - Identify organs of the digestive and urinary systems and describe their functions.</p> <p>CLE 3251.5.2. - Investigate mechanisms of digestion and food absorption.</p> <p>3251.5. - Checks for Understanding</p> <p>3251.5.1. - Compare the structure and function of organs in the digestive system.</p> <p>3251.5.3. - Trace a selected food through the alimentary canal.</p> <p>3251.5.6. - Compare and contrast the male and female urinary systems.</p> <p>3251.5.9. - Describe the composition of urine.</p> <p>3251.5.11. - Discuss the importance of water and electrolyte balance.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p>
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<p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - 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What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - 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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>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>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>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>TN.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>TN.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>TN.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>TN.WHST.11-12. - 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. - Write arguments focused on discipline-specific content.</p>	<p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p>	<p>WHST.11-12.1. - 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(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.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(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.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(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.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(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.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(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(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(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.11-12.2. - 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(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(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(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(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(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(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.9-10.2(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(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. - (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(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.9-10.3(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>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - 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<p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3216.Inq.8. - Defend a conclusion based on scientific evidence.</p> <p>3216.Inq.9. - Determine why a conclusion is free of bias.</p> <p>3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>3216.T/E. - Checks for Understanding</p> <p>3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3216.Math. - 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3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.
CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole.
GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?
CLE 3251.1. - Course Level Expectations
CLE 3251.1.1. - Distinguish between anatomy and physiology.
CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems.
CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions.
CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis.
3251.1. - Checks for Understanding
3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map.
3251.1.3. - Use prepared slides to distinguish among different types of tissues.
3251.1.4. - Classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration (3) transport, and (4) absorption and excretion.
3251.1.5. - Identify the major organs and describe the functions of each body system.
3251.1.7. - Apply correct terminology to reference anatomical orientation.
3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.
3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.
CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.
GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?
CLE 3251.3. - Course Level Expectations
CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.
CLE 3251.3.2. - Describe the structure, function, and developmental aspects of neurons and their supporting glial cells.
CLE 3251.3.3. - Investigate the physiology of electrochemical impulses and neural integration.
3251.3. - Checks for Understanding
3251.3.2. - Identify the structure and function of cranial nerves, neurons, neuroglia, and neuromuscular junctions.
3251.3.3. - Use a graphic organizer to trace the pathways and biochemical changes associated with conduction of an electrochemical impulse.
TN.3295. - Scientific Research
CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.
GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?
3295.1. - Checks for Understanding
3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.
CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.
GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.

3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.
CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole.
GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?
CLE 3251.1. - Course Level Expectations
CLE 3251.1.1. - Distinguish between anatomy and physiology.
CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems.
CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions.
CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis.
3251.1. - Checks for Understanding
3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map.
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GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?
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GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
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GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?
3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.

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3295.2. - Checks for Understanding
3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.
3295.2.3. - Develop and refine a problem statement.

3295.2.10. - Analyze questions using technology and mathematical models.
3295.2.12. - Write narrative descriptions of observed scientific phenomena.
CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.
GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?
CLE 3295.3. - Course Level Expectations
CLE 3295.3.1. - Formulate a working hypothesis to guide research.
3295.3. - Checks for Understanding
3295.3.1. - Develop a testable question for a scientific investigation.
3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.
3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.
CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.
GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?
CLE 3295.4. - Course Level Expectations
CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.
3295.4. - Checks for Understanding
3295.4.6. - State a conclusion in terms of the relationship between two or more variables.
3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.
3295.4.10. - Suggest alternative explanations for the same observations.
3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.
3295.4.12. - Develop alternative hypotheses.
3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.
3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.
CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.
GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?
CLE 3295.5. - Course Level Expectations
CLE 3295.5.2. - Communicate findings in order to extend the research base.
3295.5. - Checks for Understanding
3295.5.2. - Apply proper grammatical conventions to written communication.
3295.5.4. - Organize written communication with clarity and cohesion.
TN.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.

3295.2.10. - Analyze questions using technology and mathematical models.
3295.2.12. - Write narrative descriptions of observed scientific phenomena.
CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.
GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?
CLE 3295.3. - Course Level Expectations
CLE 3295.3.1. - Formulate a working hypothesis to guide research.
3295.3. - Checks for Understanding
3295.3.1. - Develop a testable question for a scientific investigation.
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GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?
CLE 3295.3. - Course Level Expectations
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3295.3. - Checks for Understanding
3295.3.1. - Develop a testable question for a scientific investigation.
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3295.5. - Checks for Understanding
3295.5.2. - Apply proper grammatical conventions to written communication.
3295.5.4. - Organize written communication with clarity and cohesion.
TN.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.

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GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?
CLE 3295.4. - Course Level Expectations
CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.
3295.4. - Checks for Understanding
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<p>TN.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>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>TN.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>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>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>TN.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> <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>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>TN.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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Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - 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<p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - 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Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - 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<p>GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?</p> <p>CLE 3251.1. - Course Level Expectations</p> <p>CLE 3251.1.1. - Distinguish between anatomy and physiology.</p> <p>CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems.</p> <p>CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions.</p> <p>CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis.</p> <p>3251.1. - Checks for Understanding</p> <p>3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map.</p> <p>3251.1.3. - Use prepared slides to distinguish among different types of tissues.</p> <p>3251.1.4. - Classify organ systems of the body as either (1) protection, support, and movement, (2) regulation and integration (3) transport, and (4) absorption and excretion.</p> <p>3251.1.5. - Identify the major organs and describe the functions of each body system.</p> <p>3251.1.7. - Apply correct terminology to reference anatomical orientation.</p> <p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CLE 3251.3.2. - Describe the structure, function, and developmental aspects of neurons and their supporting glial cells.</p> <p>CLE 3251.3.3. - Investigate the physiology of electrochemical impulses and neural integration.</p> <p>3251.3. - Checks for Understanding</p> <p>3251.3.2. - Identify the structure and function of cranial nerves, neurons, neuroglia, and neuromuscular junctions.</p> <p>3251.3.3. - Use a graphic organizer to trace the pathways and biochemical changes associated with conduction of an electrochemical impulse.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p>	<p>GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?</p> <p>CLE 3251.1. - Course Level Expectations</p> <p>CLE 3251.1.1. - Distinguish between anatomy and physiology.</p> <p>CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems.</p> <p>CLE 3251.1.4. - Use correct anatomical terminology when discussing body structures, sections, and regions.</p> <p>CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis.</p> <p>3251.1. - Checks for Understanding</p> <p>3251.1.1. - Illustrate the interconnections between anatomy and physiology using a concept map.</p> <p>3251.1.3. - 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<p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question? CLE 3295.3. - Course Level Expectations CLE 3295.3.1. - Formulate a working hypothesis to guide research. 3295.3. - Checks for Understanding 3295.3.1. - Develop a testable question for a scientific investigation. 3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis. 3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis. CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving. GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions? CLE 3295.4. - Course Level Expectations CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations. 3295.4. - Checks for Understanding 3295.4.6. - State a conclusion in terms of the relationship between two or more variables. 3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion. 3295.4.10. - Suggest alternative explanations for the same observations. 3295.4.11. - Explain whether the data supports or contradicts the original hypothesis. 3295.4.12. - Develop alternative hypotheses. 3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence. 3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment. CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences. GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared? CLE 3295.5. - Course Level Expectations CLE 3295.5.2. - Communicate findings in order to extend the research base. 3295.5. - Checks for Understanding 3295.5.2. - Apply proper grammatical conventions to written communication. 3295.5.4. - Organize written communication with clarity and cohesion. TN.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. TN.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects WHST.9-10.1. - Write arguments focused on discipline-specific content.</p>	<p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question? CLE 3295.3. - Course Level Expectations CLE 3295.3.1. - Formulate a working hypothesis to guide research. 3295.3. - Checks for Understanding 3295.3.1. - Develop a testable question for a scientific investigation. 3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis. 3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis. CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving. GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions? 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<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(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.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.11-12.1. - 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>
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<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. - 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.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.11-12.1(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.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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Nitrogen Cycle -	TN	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - 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<p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.4. - Describe the events which occur during the major biogeochemical cycles.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.5. - Construct models of the carbon, oxygen, nitrogen, phosphorous, and water cycles.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.4. - Predict how changes in a biogeochemical cycle can affect an ecosystem.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3216.Inq.8. - Defend a conclusion based on scientific evidence.</p> <p>3216.Inq.9. - Determine why a conclusion is free of bias.</p> <p>3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p>	<p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.4. - Describe the events which occur during the major biogeochemical cycles.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.5. - Construct models of the carbon, oxygen, nitrogen, phosphorous, and water cycles.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.4. - Predict how changes in a biogeochemical cycle can affect an ecosystem.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3216.Inq.8. - Defend a conclusion based on scientific evidence.</p> <p>3216.Inq.9. - Determine why a conclusion is free of bias.</p> <p>3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p>	<p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.4. - Describe the events which occur during the major biogeochemical cycles.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.5. - Construct models of the carbon, oxygen, nitrogen, phosphorous, and water cycles.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.4. - Predict how changes in a biogeochemical cycle can affect an ecosystem.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3216.Inq. - Course Level Expectations</p> <p>CLE 3216.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3216.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3216.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3216.Inq.6. - Communicate and defend scientific findings.</p> <p>3216.Inq. - Checks for Understanding</p> <p>3216.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3216.Inq.5. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3216.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3216.Inq.8. - Defend a conclusion based on scientific evidence.</p> <p>3216.Inq.9. - Determine why a conclusion is free of bias.</p> <p>3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p>	<p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.4. - Describe the events which occur during the major biogeochemical cycles.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.5. - Construct models of the carbon, oxygen, nitrogen, phosphorous, and water cycles.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.4. - Predict how changes in a biogeochemical cycle can affect an ecosystem.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - 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GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life? 3216.T/E. - Checks for Understanding 3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry. CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings. GQ.3216.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics? CLE 3216.Math. - Course Level Expectations CLE 3216.Math.1. - Understand the mathematical principles associated with the science of biology. CLE 3216.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts. 3216.Math. - Checks for Understanding 3216.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results. 3216.Math.6. - Apply geometric properties, formulas, and relationships to interpret biological phenomena. CS.3216.1. - Cells: All living things are made of cells that perform functions necessary for life. GQ.3216.1. - How are cells organized to carry on the processes of life? CLE 3216.1. - Course Level Expectations CLE 3216.1.4. - Describe the enzyme-substrate relationship. 3216.1. - Checks for Understanding 3216.1.3. - Describe the composition and function of enzymes. 3216.1.4. - Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated. 3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell. CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere. GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere? CLE 3216.3. - Course Level Expectations CLE 3216.3.1. - Describe the role of biotic and abiotic factors in the cycling of matter in the ecosystem. 3216.3. - Checks for Understanding 3216.3.1. - Describe how water, carbon, oxygen, and nitrogen cycle between the biotic and abiotic elements of the environment. TN.3204. - Earth Science CS.3204.3. - Cycles in the Earth System: The earth system consists of interrelated subcycles that act over extended periods of geologic time. GQ.3204.3. - What are the subcycles of the earth system and how do they interact? 3204.3. - Checks for Understanding 3204.3.13. - Explain the oxygen/carbon dioxide, nitrogen, and carbon biogeochemical cycles. 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Suggest alternative explanations for the same observations.</p> <p>3255.Inq.12. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3255.Inq.13. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3255.3. - Communities: Communities are groups of interacting populations.</p> <p>GQ.3255.3. - How do populations interact to produce stable communities?</p> <p>CLE 3255.3. - Course Level Expectations</p> <p>CLE 3255.3.2. - Relate species interactions such as competition, predation and symbiosis to coevolution.</p> <p>CS.3255.4. - Ecosystems: An ecosystem is a community that interacts with the physical environment.</p> <p>GQ.3255.4. - How do ecosystems change over time?</p> <p>CLE 3255.4. - Course Level Expectations</p> <p>CLE 3255.4.2. - Describe how matter cycles through various biogeochemical cycles.</p> <p>3255.4. - Checks for Understanding</p> <p>3255.4.2. - Illustrate each of the following biogeochemical cycles: water, carbon, nitrogen, and phosphorus.</p> <p>3255.4.5. - Summarize how disturbance contributes to succession and ecosystem stability.</p> <p>TN.3260. - Environmental Science</p> <p>CS.3260.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3260.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3260.Inq. - Course Level Expectations</p> <p>CLE 3260.Inq.1. - Recognize that science is a progressive endeavor that reevaluates and extends what is already accepted.</p> <p>CS.3260.2. - The Living World: The global ecosystem involves interactions between biotic and abiotic factors.</p> <p>GQ.3260.2. - How do living things interact with each other and the abiotic components of the environment?</p> <p>CLE 3260.2. - Course Level Expectations</p> <p>CLE 3260.2.5. - Explain biogeochemical cycling in ecosystems.</p> <p>3260.2. - Checks for Understanding</p> <p>3260.2.9. - Draw and explain diagrams illustrating each of the following biogeochemical cycles: water, carbon, nitrogen and phosphorus.</p> <p>CS.3260.4. - Water and Land Resources: Humans use natural resources in a variety of ways.</p>	<p>CLE 3255.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3255.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3255.Inq.6. - Communicate and defend scientific findings.</p> <p>3255.Inq. - Checks for Understanding</p> <p>3255.Inq.1. - Develop a testable question for a scientific investigation.</p> <p>3255.Inq.2. - Develop an experimental design for testing a hypothesis.</p> <p>3255.Inq.3. - Select appropriate independent, dependent, or controlled variables for an experiment.</p> <p>3255.Inq.4. - Perform an experiment to test a prediction.</p> <p>3255.Inq.5. - Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p> <p>3255.Inq.8. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3255.Inq.9. - 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Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p> <p>3255.Inq.8. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3255.Inq.9. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3255.Inq.10. - Suggest alternative explanations for the same observations.</p> <p>3255.Inq.12. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3255.Inq.13. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3255.3. - Communities: Communities are groups of interacting populations.</p> <p>GQ.3255.3. - How do populations interact to produce stable communities?</p> <p>CLE 3255.3. - Course Level Expectations</p> <p>CLE 3255.3.2. - Relate species interactions such as competition, predation and symbiosis to coevolution.</p> <p>CS.3255.4. - Ecosystems: An ecosystem is a community that interacts with the physical environment.</p> <p>GQ.3255.4. - How do ecosystems change over time?</p> <p>CLE 3255.4. - Course Level Expectations</p> <p>CLE 3255.4.2. - Describe how matter cycles through various biogeochemical cycles.</p> <p>3255.4. - Checks for Understanding</p> <p>3255.4.2. - Illustrate each of the following biogeochemical cycles: water, carbon, nitrogen, and phosphorus.</p> <p>3255.4.5. - Summarize how disturbance contributes to succession and ecosystem stability.</p> <p>TN.3260. - Environmental Science</p> <p>CS.3260.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3260.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3260.Inq. - Course Level Expectations</p> <p>CLE 3260.Inq.1. - Recognize that science is a progressive endeavor that reevaluates and extends what is already accepted.</p> <p>CS.3260.2. - The Living World: The global ecosystem involves interactions between biotic and abiotic factors.</p> <p>GQ.3260.2. - How do living things interact with each other and the abiotic components of the environment?</p> <p>CLE 3260.2. - Course Level Expectations</p> <p>CLE 3260.2.5. - Explain biogeochemical cycling in ecosystems.</p> <p>3260.2. - Checks for Understanding</p> <p>3260.2.9. - Draw and explain diagrams illustrating each of the following biogeochemical cycles: water, carbon, nitrogen and phosphorus.</p> <p>CS.3260.4. - Water and Land Resources: Humans use natural resources in a variety of ways.</p>	<p>CLE 3255.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3255.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3255.Inq.6. - Communicate and defend scientific findings.</p> <p>3255.Inq. - Checks for Understanding</p> <p>3255.Inq.1. - Develop a testable question for a scientific investigation.</p> <p>3255.Inq.2. - Develop an experimental design for testing a hypothesis.</p> <p>3255.Inq.3. - Select appropriate independent, dependent, or controlled variables for an experiment.</p> <p>3255.Inq.4. - Perform an experiment to test a prediction.</p> <p>3255.Inq.5. - Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p> <p>3255.Inq.8. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3255.Inq.9. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3255.Inq.10. - Suggest alternative explanations for the same observations.</p> <p>3255.Inq.12. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3255.Inq.13. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3255.3. - 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CLE 3260.4. - Course Level Expectations
CLE 3260.4.4. - Evaluate the impact of human activities on natural resources.
CS.3260.6. - Waste Production and Pollution: Many human activities result in pollution.
GQ.3260.6. - How can we mimic nature to provide goods and services for the growing human population in ways that do not pollute the environment?
CLE 3260.6. - Course Level Expectations
CLE 3260.6.2. - Apply case studies to relate land, air, and water pollution to human health issues.
3260.6. - Checks for Understanding
3260.6.3. - Investigate a state or local environmental issue involving pollution of land, air or water.
3260.6.4. - Explore case studies of human health problems related to pollutants.
TN.3251. - Human Anatomy and Physiology
CS.3251.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.
GQ.3251.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?
CLE 3251.Inq. - Course Level Expectations
CLE 3251.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.
CLE 3251.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.
CLE 3251.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.
CLE 3251.Inq.6. - Communicate and defend scientific findings.
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3251.Inq.3. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.
3251.Inq.6. - Determine if data supports or contradicts a hypothesis or conclusion.
3251.Inq.8. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.
3251.Inq.10. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.
3251.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.
CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.

GQ.3251.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?
3251.T/E. - Checks for Understanding
3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.
TN.3295. - Scientific Research
CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.
GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?
3295.1. - Checks for Understanding
3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.
CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.

GQ.3260.4. - How can natural resources be sustainably managed for the benefit of all living things?
CLE 3260.4. - Course Level Expectations
CLE 3260.4.4. - Evaluate the impact of human activities on natural resources.
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CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.

<p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - 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Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>
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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>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>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>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>TN.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>TN.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>TN.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>TN.WHST.11-12. - 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. - Write arguments focused on discipline-specific content.</p>	<p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p>	<p>WHST.11-12.1. - 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(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.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(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.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(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.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(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.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(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(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(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.11-12.2. - 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(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(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(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(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(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(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.9-10.2(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(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. - (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(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.9-10.3(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(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.11-12.3. - (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>
Osmosis -	TN	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - 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How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p>

<p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.4. - Describe the processes of cell growth and reproduction.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.6. - Determine the relationship between cell growth and cell reproduction.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - 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CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis. 3251.1. - Checks for Understanding 3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis. 3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels. TN.3295. - Scientific Research CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research. GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research? 3295.1. - Checks for Understanding 3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information. CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems. GQ.3295.2. - What critical thinking skills are needed to answer researchable questions? 3295.2. - Checks for Understanding 3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation. 3295.2.3. - Develop and refine a problem statement. 3295.2.10. - Analyze questions using technology and mathematical models.</p>	<p>GQ.3251.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry? CLE 3251.Inq. - Course Level Expectations</p> <p>CLE 3251.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories. CLE 3251.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias. CLE 3251.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question. CLE 3251.Inq.6. - Communicate and defend scientific findings. 3251.Inq. - Checks for Understanding 3251.Inq.3. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others. 3251.Inq.6. - Determine if data supports or contradicts a hypothesis or conclusion. 3251.Inq.8. - Recognize, analyze, and evaluate alternative explanations for the same set of observations. 3251.Inq.10. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data. 3251.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence. CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3251.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life? 3251.T/E. - Checks for Understanding 3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry. CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole. GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis? CLE 3251.1. - Course Level Expectations CLE 3251.1.2. - Investigate the interrelationship between the structures and functions of the body systems. CLE 3251.1.5. - Describe the body mechanisms that maintain homeostasis. 3251.1. - Checks for Understanding 3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis. 3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels. TN.3295. - Scientific Research CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research. GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research? 3295.1. - Checks for Understanding 3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information. CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems. 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<p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - 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Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - 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By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p>
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<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. - 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>TN.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> <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>TN.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> <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.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(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(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.9-10.2. - 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. - 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.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.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.3(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(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.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.11-12.3(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>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3210.Inq. - Course Level Expectations</p> <p>CLE 3210.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3210.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3210.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3210.Inq.6. - Communicate and defend scientific findings.</p> <p>3210.Inq. - Checks for Understanding</p> <p>3210.Inq.2. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3210.Inq.4. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3210.Inq.6. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3210.Inq.8. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>SPI 3210 Inq. - State Performance Indicators</p> <p>SPI 3210 Inq.5. - Defend a conclusion based on scientific evidence.</p> <p>SPI 3210 Inq.6. - Determine why a conclusion is free of bias.</p> <p>SPI 3210 Inq.7. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3210.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3210.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>SPI 3210.T/E. - State Performance Indicators</p> <p>SPI 3210.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3210.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3210.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3210.Math. - Course Level Expectations</p> <p>CLE 3210.Math.1. - Understand the mathematical principles associated with the science of biology.</p> <p>CLE 3210.Math.2. - Utilize appropriate mathematical equations and processes to understand biological concepts.</p> <p>3210.Math. - Checks for Understanding</p> <p>3210.Math.1. - Choose and construct appropriate graphical representations for a data set.</p> <p>3210.Math.2. - Analyze graphs to interpret biological events.</p>	<p>TN.3210. - Biology I</p> <p>CS.3210.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3210.Inq. - 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<p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>3210.Math.5. - Apply and interpret rates of change from graphical and numerical data.</p> <p>SPI 3210.Math. - State Performance Indicators</p> <p>SPI 3210.Math.1. - Interpret a graph that depicts a biological phenomenon.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>CS.3210.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3210.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>CLE 3210.2. - Course Level Expectations</p> <p>CLE 3210.2.3. - Predict how global climate change, human activity, geologic events, and the introduction of non-native species impact an ecosystem.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.3. - Investigate the relationship between the processes of photosynthesis and cellular respiration.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.3. - Conduct experiments to investigate photosynthesis and cellular respiration.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.3. - Compare and contrast photosynthesis and cellular respiration in terms of energy transformation.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p>	<p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>3210.Math.5. - Apply and interpret rates of change from graphical and numerical data.</p> <p>SPI 3210.Math. - State Performance Indicators</p> <p>SPI 3210.Math.1. - Interpret a graph that depicts a biological phenomenon.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>CS.3210.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3210.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>CLE 3210.2. - Course Level Expectations</p> <p>CLE 3210.2.3. - Predict how global climate change, human activity, geologic events, and the introduction of non-native species impact an ecosystem.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.3. - Investigate the relationship between the processes of photosynthesis and cellular respiration.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.3. - Conduct experiments to investigate photosynthesis and cellular respiration.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.3. - Compare and contrast photosynthesis and cellular respiration in terms of energy transformation.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p>	<p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>3210.Math.5. - Apply and interpret rates of change from graphical and numerical data.</p> <p>SPI 3210.Math. - State Performance Indicators</p> <p>SPI 3210.Math.1. - Interpret a graph that depicts a biological phenomenon.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>CS.3210.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3210.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>CLE 3210.2. - Course Level Expectations</p> <p>CLE 3210.2.3. - Predict how global climate change, human activity, geologic events, and the introduction of non-native species impact an ecosystem.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.3. - Investigate the relationship between the processes of photosynthesis and cellular respiration.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.3. - Conduct experiments to investigate photosynthesis and cellular respiration.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.3. - Compare and contrast photosynthesis and cellular respiration in terms of energy transformation.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p>	<p>3210.Math.4. - Select and apply an appropriate method to evaluate the reasonableness of results.</p> <p>3210.Math.5. - Apply and interpret rates of change from graphical and numerical data.</p> <p>SPI 3210.Math. - State Performance Indicators</p> <p>SPI 3210.Math.1. - Interpret a graph that depicts a biological phenomenon.</p> <p>CS.3210.1. - Cells: All living things are made of cells that perform functions necessary for life.</p> <p>GQ.3210.1. - How are cells organized to carry on the processes of life?</p> <p>CLE 3210. - Course Level Expectations</p> <p>CLE 3210.1.1. - Compare the structure and function of cellular organelles in both prokaryotic and eukaryotic cells.</p> <p>CLE 3210.1.2. - Distinguish among the structure and function of the four major organic macromolecules found in living things.</p> <p>CLE 3210.1.3. - Describe how enzymes regulate chemical reactions in the body.</p> <p>CLE 3210.1.5. - Compare different models to explain the movement of materials into and out of cells.</p> <p>3210.1. - Checks for Understanding</p> <p>3210.1.3. - Design a graphic organizer that compares proteins, carbohydrates, lipids, and nucleic acids.</p> <p>3210.1.4. - Conduct tests to detect the presence of proteins, carbohydrates, and lipids.</p> <p>3210.1.5. - Design a model that illustrates enzyme function.</p> <p>SPI 3210.1. - State Performance Indicators</p> <p>SPI 3210.1.3. - Distinguish among proteins, carbohydrates, lipids, and nucleic acids.</p> <p>SPI 3210.1.5. - Identify how enzymes control chemical reactions in the body.</p> <p>SPI 3210.1.7. - Predict the movement of water and other molecules across selectively permeable membranes.</p> <p>CS.3210.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3210.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>CLE 3210.2. - Course Level Expectations</p> <p>CLE 3210.2.3. - Predict how global climate change, human activity, geologic events, and the introduction of non-native species impact an ecosystem.</p> <p>CS.3210.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3210.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3210.3. - Course Level Expectations</p> <p>CLE 3210.3.3. - Investigate the relationship between the processes of photosynthesis and cellular respiration.</p> <p>3210.3. - Checks for Understanding</p> <p>3210.3.3. - Conduct experiments to investigate photosynthesis and cellular respiration.</p> <p>SPI 3210.3. - State Performance Indicators</p> <p>SPI 3210.3.3. - Compare and contrast photosynthesis and cellular respiration in terms of energy transformation.</p> <p>CS.3210.4. - Heredity: Organisms reproduce and transmit hereditary information.</p> <p>GQ.3210.4. - What are the principal mechanisms by which living things reproduce and transmit hereditary information from parents to offspring?</p> <p>CLE 3210.4. - Course Level Expectations</p> <p>CLE 3210.4.1. - Investigate how genetic information is encoded in nucleic acids.</p> <p>TN.3216. - Biology II</p> <p>CS.3216.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3216.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p>
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Defend a conclusion based on scientific evidence.</p> <p>3216.Inq.9. - Determine why a conclusion is free of bias.</p> <p>3216.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3216.Inq.12. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>CS.3216.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3216.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>3216.T/E. - Checks for Understanding</p> <p>3216.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3216.Math. - Mathematics: Science applies mathematics to investigate questions, solve problems, and communicate findings.</p> <p>GQ.3216.Math. - What mathematical skills and understandings are needed to successfully investigate biological topics?</p> <p>CLE 3216.Math. - 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<p>3216.1. - Checks for Understanding</p> <p>3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.</p> <p>3216.1.3. - Describe the composition and function of enzymes.</p> <p>3216.1.4. - Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated.</p> <p>3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.</p> <p>CS.3216.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3216.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>3216.2. - Checks for Understanding</p> <p>3216.2.1. - Analyze the ecological impact of a change in climate, human activity, introduction of non-native species, and changes in population size over time.</p> <p>CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3216.3. - Course Level Expectations</p> <p>CLE 3216.3.2. - Explain how sunlight is captured by plant cells and converted into usable energy.</p> <p>3216.3. - Checks for Understanding</p> <p>3216.3.4. - Develop a concept map or flow chart to compare the sequence of molecular events during photosynthesis and cellular respiration.</p> <p>3216.3.5. - Sequence the steps involved in sugar production during photosynthesis.</p> <p>CS.3216.7. - Botany: Plants are essential for life to exist.</p> <p>GQ.3216.7. - What conditions are needed for plants to grow and reproduce?</p> <p>CLE 3216.7. - Course Level Expectations</p> <p>CLE 3216.7.4. - Describe the difference between plants and fungi.</p> <p>3216.7. - Checks for Understanding</p> <p>3216.7.2. - Employ a dichotomous key to identify plants based on their structural characteristics.</p> <p>TN.3255. - Ecology</p> <p>CS.3255.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3255.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3255.Inq. - Course Level Expectations</p> <p>CLE 3255.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3255.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3255.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3255.Inq.6. - Communicate and defend scientific findings.</p> <p>3255.Inq. - Checks for Understanding</p> <p>3255.Inq.1. - Develop a testable question for a scientific investigation.</p> <p>3255.Inq.2. - Develop an experimental design for testing a hypothesis.</p> <p>3255.Inq.3. - Select appropriate independent, dependent, or controlled variables for an experiment.</p> <p>3255.Inq.4. - Perform an experiment to test a prediction.</p> <p>3255.Inq.5. - Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p>	<p>3216.1. - Checks for Understanding</p> <p>3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.</p> <p>3216.1.3. - Describe the composition and function of enzymes.</p> <p>3216.1.4. - Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated.</p> <p>3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.</p> <p>CS.3216.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3216.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>3216.2. - Checks for Understanding</p> <p>3216.2.1. - Analyze the ecological impact of a change in climate, human activity, introduction of non-native species, and changes in population size over time.</p> <p>CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3216.3. - Course Level Expectations</p> <p>CLE 3216.3.2. - Explain how sunlight is captured by plant cells and converted into usable energy.</p> <p>3216.3. - Checks for Understanding</p> <p>3216.3.4. - Develop a concept map or flow chart to compare the sequence of molecular events during photosynthesis and cellular respiration.</p> <p>3216.3.5. - Sequence the steps involved in sugar production during photosynthesis.</p> <p>CS.3216.7. - Botany: Plants are essential for life to exist.</p> <p>GQ.3216.7. - What conditions are needed for plants to grow and reproduce?</p> <p>CLE 3216.7. - Course Level Expectations</p> <p>CLE 3216.7.4. - Describe the difference between plants and fungi.</p> <p>3216.7. - Checks for Understanding</p> <p>3216.7.2. - Employ a dichotomous key to identify plants based on their structural characteristics.</p> <p>TN.3255. - Ecology</p> <p>CS.3255.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3255.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3255.Inq. - Course Level Expectations</p> <p>CLE 3255.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3255.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3255.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3255.Inq.6. - Communicate and defend scientific findings.</p> <p>3255.Inq. - Checks for Understanding</p> <p>3255.Inq.1. - Develop a testable question for a scientific investigation.</p> <p>3255.Inq.2. - Develop an experimental design for testing a hypothesis.</p> <p>3255.Inq.3. - Select appropriate independent, dependent, or controlled variables for an experiment.</p> <p>3255.Inq.4. - Perform an experiment to test a prediction.</p> <p>3255.Inq.5. - Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p>	<p>3216.1. - Checks for Understanding</p> <p>3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.</p> <p>3216.1.3. - Describe the composition and function of enzymes.</p> <p>3216.1.4. - Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated.</p> <p>3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.</p> <p>CS.3216.2. - Interdependence: All life is interdependent and interacts with the environment.</p> <p>GQ.3216.2. - How do living things interact with one another and with the non-living elements of their environment?</p> <p>3216.2. - Checks for Understanding</p> <p>3216.2.1. - Analyze the ecological impact of a change in climate, human activity, introduction of non-native species, and changes in population size over time.</p> <p>CS.3216.3. - Flow of Matter and Energy: Matter cycles and energy flows through the biosphere.</p> <p>GQ.3216.3. - What are the scientific explanations for how matter cycles and energy flows through the biosphere?</p> <p>CLE 3216.3. - Course Level Expectations</p> <p>CLE 3216.3.2. - Explain how sunlight is captured by plant cells and converted into usable energy.</p> <p>3216.3. - Checks for Understanding</p> <p>3216.3.4. - Develop a concept map or flow chart to compare the sequence of molecular events during photosynthesis and cellular respiration.</p> <p>3216.3.5. - Sequence the steps involved in sugar production during photosynthesis.</p> <p>CS.3216.7. - Botany: Plants are essential for life to exist.</p> <p>GQ.3216.7. - What conditions are needed for plants to grow and reproduce?</p> <p>CLE 3216.7. - Course Level Expectations</p> <p>CLE 3216.7.4. - Describe the difference between plants and fungi.</p> <p>3216.7. - Checks for Understanding</p> <p>3216.7.2. - Employ a dichotomous key to identify plants based on their structural characteristics.</p> <p>TN.3255. - Ecology</p> <p>CS.3255.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3255.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3255.Inq. - Course Level Expectations</p> <p>CLE 3255.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3255.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3255.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3255.Inq.6. - Communicate and defend scientific findings.</p> <p>3255.Inq. - Checks for Understanding</p> <p>3255.Inq.1. - Develop a testable question for a scientific investigation.</p> <p>3255.Inq.2. - Develop an experimental design for testing a hypothesis.</p> <p>3255.Inq.3. - Select appropriate independent, dependent, or controlled variables for an experiment.</p> <p>3255.Inq.4. - Perform an experiment to test a prediction.</p> <p>3255.Inq.5. - Gather, organize, and transform data from an experiment.</p> <p>3255.Inq.7. - Use knowledge and data-interpretation skills to support a conclusion.</p>	<p>3216.1. - Checks for Understanding</p> <p>3216.1.1. - Compare the organization and function of prokaryotic and eukaryotic cells.</p> <p>3216.1.3. - Describe the composition and function of enzymes.</p> <p>3216.1.4. - Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated.</p> <p>3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.</p> <p>CS.3216.2. - 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3255.Inq.9. - Compare the results of an experiment with what is already known about the topic under investigation.
3255.Inq.10. - Suggest alternative explanations for the same observations.
3255.Inq.12. - Formulate and revise scientific explanations and models using logic and evidence.
3255.Inq.13. - Develop a logical argument about cause-and-effect relationships in an experiment.
CS.3255.1. - Individuals: The individual organism is the basic unit of ecology.
GQ.3255.1. - What determines the survival of individuals in a population?
3255.1. - Checks for Understanding
3255.1.1. - Develop a visual aid to illustrate the major characteristics of the six kingdoms.
3255.1.5. - Distinguish between photosynthesis and chemosynthesis and describe organisms that occupy these niches in both terrestrial and aquatic habitats.
CS.3255.4. - Ecosystems: An ecosystem is a community that interacts with the physical environment.
GQ.3255.4. - How do ecosystems change over time?
3255.4. - Checks for Understanding
3255.4.5. - Summarize how disturbance contributes to succession and ecosystem stability.
TN.3260. - Environmental Science
CS.3260.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.
GQ.3260.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?
CLE 3260.Inq. - Course Level Expectations
CLE 3260.Inq.1. - Recognize that science is a progressive endeavor that reevaluates and extends what is already accepted.
CS.3260.4. - Water and Land Resources: Humans use natural resources in a variety of ways.
GQ.3260.4. - How can natural resources be sustainably managed for the benefit of all living things?
CLE 3260.4. - Course Level Expectations
CLE 3260.4.4. - Evaluate the impact of human activities on natural resources.
CS.3260.6. - Waste Production and Pollution: Many human activities result in pollution.
GQ.3260.6. - How can we mimic nature to provide goods and services for the growing human population in ways that do not pollute the environment?
CLE 3260.6. - Course Level Expectations
CLE 3260.6.2. - Apply case studies to relate land, air, and water pollution to human health issues.
3260.6. - Checks for Understanding
3260.6.3. - Investigate a state or local environmental issue involving pollution of land, air or water.
3260.6.4. - Explore case studies of human health problems related to pollutants.
CS.3260.7. - Global Change And Civic Responsibility: Human interaction with the local environment has global consequences.
GQ.3260.7. - How do the decisions of one generation create opportunities and impose limitations for future generations?
CLE 3260.7. - Course Level Expectations
CLE 3260.7.3. - Explain how human activity is related to ozone depletion and climate change.
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<p>3260.7.9. - Explain the trend in atmospheric CO2 levels indicated by ice core data and CO2 measurements recorded at Mauna Loa since 1958.</p> <p>TN.3251. - Human Anatomy and Physiology</p> <p>CS.3251.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3251.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3251.Inq. - Course Level Expectations</p> <p>CLE 3251.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3251.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3251.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3251.Inq.6. - Communicate and defend scientific findings.</p> <p>3251.Inq. - 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Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p>	<p>3260.7.9. - Explain the trend in atmospheric CO2 levels indicated by ice core data and CO2 measurements recorded at Mauna Loa since 1958.</p> <p>TN.3251. - Human Anatomy and Physiology</p> <p>CS.3251.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3251.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3251.Inq. - Course Level Expectations</p> <p>CLE 3251.Inq.2. - 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Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p>	<p>3260.7.9. - Explain the trend in atmospheric CO2 levels indicated by ice core data and CO2 measurements recorded at Mauna Loa since 1958.</p> <p>TN.3251. - Human Anatomy and Physiology</p> <p>CS.3251.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3251.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3251.Inq. - Course Level Expectations</p> <p>CLE 3251.Inq.2. - Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.</p> <p>CLE 3251.Inq.4. - Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.</p> <p>CLE 3251.Inq.5. - Compare experimental evidence and conclusions with those drawn by others about the same testable question.</p> <p>CLE 3251.Inq.6. - Communicate and defend scientific findings.</p> <p>3251.Inq. - Checks for Understanding</p> <p>3251.Inq.3. - Conduct scientific investigations that include testable questions, verifiable hypotheses, and appropriate variables to explore new phenomena or verify the experimental results of others.</p> <p>3251.Inq.6. - Determine if data supports or contradicts a hypothesis or conclusion.</p> <p>3251.Inq.8. - Recognize, analyze, and evaluate alternative explanations for the same set of observations.</p> <p>3251.Inq.10. - Compare conclusions that offer different, but acceptable explanations for the same set of experimental data.</p> <p>3251.Inq.11. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>CS.3251.T/E. - Technology and Engineering: Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.</p> <p>GQ.3251.T/E. - How do science concepts, engineering skills, and applications of technology improve the quality of life?</p> <p>3251.T/E. - Checks for Understanding</p> <p>3251.T/E.1. - Distinguish among tools and procedures best suited to conduct a specified scientific inquiry.</p> <p>CS.3251.1. - Anatomical Orientation: Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole.</p> <p>GQ.3251.1. - How is the body organized to function effectively and maintain homeostasis?</p> <p>3251.1. - Checks for Understanding</p> <p>3251.1.2. - Sequence the levels of structural organization from the molecular level through the organismic level.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p>
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<p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.2. - Differentiate between variables and controls in an experiment and select appropriate variables for an experiment.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p> <p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>3295.2.12. - 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Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.2. - Differentiate between variables and controls in an experiment and select appropriate variables for an experiment.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze,, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - 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<p>TN.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>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>TN.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>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>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>TN.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> <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>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>TN.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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Analyze the rate of reactions in which variables such as temperature, pH, and substrate and enzyme concentration are manipulated.</p> <p>3216.1.7. - Describe how carbohydrates, proteins, lipids, and nucleic acids function in the cell.</p> <p>CS.3216.6. - Comparative Anatomy and Physiology: All living organisms are both alike and different.</p> <p>GQ.3216.6. - In what ways are all living organisms similar and what makes a species unique?</p> <p>3216.6. - Checks for Understanding</p> <p>3216.6.1. - Describe how the activities of major body systems help to maintain homeostasis.</p> <p>3216.6.5. - Describe how the nervous and endocrine systems coordinate various body functions.</p> <p>TN.3255. - Ecology</p> <p>CS.3255.Inq. - Inquiry: Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.</p> <p>GQ.3255.Inq. - What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?</p> <p>CLE 3255.Inq. - Course Level Expectations</p> <p>CLE 3255.Inq.2. - 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Checks for Understanding</p> <p>3251.3.2. - Identify the structure and function of cranial nerves, neurons, neuroglia, and neuromuscular junctions.</p> <p>3251.3.3. - Use a graphic organizer to trace the pathways and biochemical changes associated with conduction of an electrochemical impulse.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p>	<p>3251.1.7. - Apply correct terminology to reference anatomical orientation.</p> <p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - Course Level Expectations</p> <p>CLE 3251.3.1. - Compare and contrast the anatomy and physiology of the central and peripheral nervous systems.</p> <p>CLE 3251.3.2. - Describe the structure, function, and developmental aspects of neurons and their supporting glial cells.</p> <p>CLE 3251.3.3. - Investigate the physiology of electrochemical impulses and neural integration.</p> <p>3251.3. - Checks for Understanding</p> <p>3251.3.2. - Identify the structure and function of cranial nerves, neurons, neuroglia, and neuromuscular junctions.</p> <p>3251.3.3. - Use a graphic organizer to trace the pathways and biochemical changes associated with conduction of an electrochemical impulse.</p> <p>TN.3295. - Scientific Research</p> <p>CS.3295.1. - Practice Ethics: Ethical practices must be adhered to during scientific research.</p> <p>GQ.3295.1. - What are the ethical practices that must be addressed while conducting scientific research?</p> <p>3295.1. - Checks for Understanding</p> <p>3295.1.8. - Create entries in a journal showing date, accurate observations, collection of data, and other pertinent information.</p> <p>CS.3295.2. - Thinking Critically: Critical thinking skills are essential for identifying and solving scientific problems.</p> <p>GQ.3295.2. - What critical thinking skills are needed to answer researchable questions?</p> <p>3295.2. - Checks for Understanding</p> <p>3295.2.1. - Compare the results of an experiment with what is already known about the topic under investigation.</p> <p>3295.2.3. - Develop and refine a problem statement.</p> <p>3295.2.10. - Analyze questions using technology and mathematical models.</p> <p>3295.2.12. - Write narrative descriptions of observed scientific phenomena.</p> <p>CS.3295.3. - Investigate: Investigative strategies are essential to answer a scientific question or solve a scientific problem.</p> <p>GQ.3295.3. - What strategies should be employed to solve a scientific problem or answer a scientific question?</p> <p>CLE 3295.3. - Course Level Expectations</p> <p>CLE 3295.3.1. - Formulate a working hypothesis to guide research.</p> <p>3295.3. - Checks for Understanding</p> <p>3295.3.1. - Develop a testable question for a scientific investigation.</p> <p>3295.3.3. - Develop an experimental design with proper application of controls and variables for testing a hypothesis.</p> <p>3295.3.10. - Modify or design an alternative experimental procedure to test a hypothesis.</p> <p>CS.3295.4. - Analyze and Evaluate Data: To synthesize, analyze, and evaluate data is a vital part of solving scientific problem solving.</p> <p>GQ.3295.4. - What problem solving skills are necessary to synthesize, analyze, and evaluate data in order to draw accurate conclusions?</p> <p>CLE 3295.4. - Course Level Expectations</p>	<p>3251.1.7. - Apply correct terminology to reference anatomical orientation.</p> <p>3251.1.8. - Provide examples of bodily mechanisms that serve to maintain homeostasis.</p> <p>3251.1.9. - Explain how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.</p> <p>CS.3251.3. - Integration and Regulation: The nervous and endocrine systems work in an integrative manner to maintain homeostasis and communicate with all other body systems.</p> <p>GQ.3251.3. - What external and internal bodily mechanisms are involved in communication, control, growth, and development?</p> <p>CLE 3251.3. - 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<p>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - Communicate findings in order to extend the research base.</p> <p>3295.5. - Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - 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Checks for Understanding</p> <p>3295.5.2. - Apply proper grammatical conventions to written communication.</p> <p>3295.5.4. - Organize written communication with clarity and cohesion.</p> <p>TN.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>TN.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>CLE 3295.4.3. - Draw conclusions based on data analysis and evaluations.</p> <p>3295.4. - Checks for Understanding</p> <p>3295.4.6. - State a conclusion in terms of the relationship between two or more variables.</p> <p>3295.4.9. - Apply knowledge and data-interpretation skills to support a conclusion.</p> <p>3295.4.10. - Suggest alternative explanations for the same observations.</p> <p>3295.4.11. - Explain whether the data supports or contradicts the original hypothesis.</p> <p>3295.4.12. - Develop alternative hypotheses.</p> <p>3295.4.13. - Formulate and revise scientific explanations and models using logic and evidence.</p> <p>3295.4.14. - Develop a logical argument about cause-and-effect relationships in an experiment.</p> <p>CS.3295.5. - Communicate Results: Results of scientific investigations should be shared in oral and written form to a variety of audiences.</p> <p>GQ.3295.5. - How and with whom should the methods and results of scientific investigations be shared?</p> <p>CLE 3295.5. - Course Level Expectations</p> <p>CLE 3295.5.2. - 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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>TN.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>
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	<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>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. - 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>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.11-12.1(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> <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. 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