

Main Criteria: Cogent Education's Interactive Cases
Secondary Criteria: North Dakota Content Standards
Subject: Science
Grades: 9, 10, 11, 12



Title	Common Among States	North Dakota Content Standards	North Dakota Content Standards	North Dakota Content Standards	North Dakota Content Standards
Action Potential -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus,</p> <p>9-10.4.2. - Structure and Function: Relate the functions of cells in multi-cellular organisms to their cell type (e.g., nerve cells, blood cells, guard cells)</p> <p>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>9-10.1.4. - Form and Function: Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)</p> <p>ND.2. - 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Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)</p> <p>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - Write arguments focused on discipline-specific content.</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.2. - Systems: Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>11-12.1.4. - Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)</p> <p>ND.2. - 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Students' narrative skills continue to grow in these grades. The Standards require that students be able to</p> <p>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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Cellular Respiration -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p>

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Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p>	<p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>9-10.1.4. - Form and Function: Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.5. - 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<p>9-10.4.12. - Matter and Energy in Living Systems: Compare and contrast photosynthesis and cellular respiration</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p> <p>9-10.4.12. - Matter and Energy in Living Systems: Compare and contrast photosynthesis and cellular respiration</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>11-12.WHST.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>11-12.WHST.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>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - 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		<p>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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The Standards require that students be able</p> <p>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.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>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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Diffusion -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>9-10.1.6. - Evolution and Equilibrium: Identify principles governing evolution and equilibrium within systems (e.g., cause and effect, positive and negative feedback)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>9-10.1.6. - Evolution and Equilibrium: Identify principles governing evolution and equilibrium within systems (e.g., cause and effect, positive and negative feedback)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p>

<p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.2.a. - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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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Filtration -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus,</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>9-10.1.4. - Form and Function: Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)</p> <p>ND.2. - 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<p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.2.a. - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>11-12.WHST.2.a. - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; 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Membrane Potential -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>9-10.4.2. - Structure and Function: Relate the functions of cells in multi-cellular organisms to their cell type (e.g., nerve cells, blood cells, guard cells)</p> <p>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - 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Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.2. - Systems: Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>11-12.1.4. - Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - 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Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p>

<p>9-10.RST.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>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>11-12.RST.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>11-12.RST.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>9-10.RST.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently. ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p>	<p>9-10.RST.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). 9-10.RST.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently. ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p>	<p>11-12.RST.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p>	<p>11-12.RST.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p>
<p>9-10.WHST.1. - Write arguments focused on discipline-specific content. 9-10.WHST.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>9-10.WHST.1. - Write arguments focused on discipline-specific content. 9-10.WHST.1. - Write arguments focused on discipline-specific content.</p>	<p>11-12.WHST.1. - Write arguments focused on discipline-specific content. 11-12.WHST.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>11-12.WHST.1. - Write arguments focused on discipline-specific content. 11-12.WHST.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>9-10.WHST.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>9-10.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.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>9-10.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>9-10.WHST.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>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p>
<p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>
<p>9-10.WHST.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>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>11-12.WHST.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>11-12.WHST.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>9-10.WHST.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>9-10.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.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>9-10.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.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>9-10.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able</p>	<p>9-10.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Membrane Transport -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus,</p> <p>9-10.4.2. - Structure and Function: Relate the functions of cells in multi-cellular organisms to their cell type (e.g., nerve cells, blood cells, guard cells)</p> <p>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>ND.1. - 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Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation</p> <p>11-12.2.8. - Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument</p> <p>ND.8. - History and Nature of Science: Students understand the history and nature of science.</p> <p>11-12.8.1. - Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)</p> <p>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.2. - Systems: Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>11-12.1.4. - Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation</p> <p>11-12.2.8. - Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument</p> <p>ND.8. - History and Nature of Science: Students understand the history and nature of science.</p> <p>11-12.8.1. - 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<p>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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Nitrogen Cycle -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.6. - Evolution and Equilibrium: Identify principles governing evolution and equilibrium within systems (e.g., cause and effect, positive and negative feedback)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.1. - Understandings About Scientific Inquiry: Explain how scientific investigations can result in new ideas</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p> <p>9-10.4.11. - Matter and Energy in Living Systems: Explain how matter and energy flow through living and nonliving</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.2. - Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell)</p> <p>9-10.1.4. - Form and Function: Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics)</p> <p>9-10.1.6. - Evolution and Equilibrium: Identify principles governing evolution and equilibrium within systems (e.g., cause and effect, positive and negative feedback)</p> <p>ND.2. - 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Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.4. - Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.1. - Understandings About Scientific Inquiry: Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation</p> <p>11-12.2.8. - Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument</p> <p>ND.8. - History and Nature of Science: Students understand the history and nature of science.</p> <p>11-12.8.1. - Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)</p> <p>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - 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<p>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>9-10.WHST.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>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Osmosis -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>9-10.WHST.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>ND.1. - 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Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation</p> <p>11-12.2.8. - Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument</p> <p>ND.8. - History and Nature of Science: Students understand the history and nature of science.</p> <p>11-12.8.1. - Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)</p> <p>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - Write arguments focused on discipline-specific content.</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - 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<p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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Photosynthesis -	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.1. - Understandings About Scientific Inquiry: Explain how scientific investigations can result in new ideas</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.5. - Abilities Necessary To Do Scientific Inquiry: Identify the independent and dependent variables, the control, and the constants when conducting an experiment</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>9-10.4.3. - Structure and Function: Explain the relationship between protein structure and function</p> <p>9-10.4.12. - Matter and Energy in Living Systems: Compare and contrast photosynthesis and cellular respiration</p> <p>ND.CC.9-10.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>9-10.RST.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>9-10.RST.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>9-10.RST.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>ND.CC.9-10.WHST. - 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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>9-10.RST.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>ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>9-10.WHST.1. - Write arguments focused on discipline-specific content.</p>	<p>11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.4. - Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.1. - Understandings About Scientific Inquiry: Explain how new knowledge and methods emerge from different types of investigations and public communication among scientists</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation</p> <p>11-12.2.8. - Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument</p> <p>ND.8. - History and Nature of Science: Students understand the history and nature of science.</p> <p>11-12.8.1. - Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)</p> <p>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - 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Synaptic Transmission - ND	ND	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>9-10.1.1. - Models: Explain how models can be used to illustrate scientific principles</p> <p>9-10.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population)</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.2. - Systems: Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)</p>	<p>ND.1. - Unifying Concepts: Students understand the unifying concepts and processes of science.</p> <p>11-12.1.1. - Models: Explain how scientists create and use Models to address scientific knowledge</p> <p>11-12.1.2. - Systems: Identify the structure, organization, and dynamics of components within a system (e.g., cells, tissues, organs, organ systems, reactants and products in chemical equilibrium)</p>

<p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>9-10.2.3. - Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations</p> <p>9-10.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation</p> <p>9-10.2.6. - Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation</p> <p>9-10.2.7. - Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations</p> <p>ND.4. - Life Science: Students understand the basic concepts and principles of life science.</p> <p>9-10.4.1. - Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)</p> <p>9-10.4.2. - Structure and Function: Relate the functions of cells in multi-cellular organisms to their cell type (e.g., nerve cells, blood cells, guard cells)</p> <p>9-10.4.3. - 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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>11-12.1.3. - Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems)</p> <p>11-12.1.4. - Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics)</p> <p>ND.2. - Science Inquiry: Students use the process of science inquiry.</p> <p>11-12.2.3. - Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis</p> <p>11-12.2.4. - Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data</p> <p>11-12.2.7. - Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation</p> <p>11-12.2.8. - Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument</p> <p>ND.8. - History and Nature of Science: Students understand the history and nature of science.</p> <p>11-12.8.1. - Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)</p> <p>ND.CC.11-12.RST. - Reading Standards for Information Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>11-12.RST.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>11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>11-12.RST.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>11-12.RST.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>ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects</p> <p>11-12.WHST.1. - Write arguments focused on discipline-specific content.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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 history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. 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>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.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>9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.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>11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. 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