Main Criteria: Cogent Education's Interactive Cases
Secondary Criteria: North Carolina Common Core State and Essential Standards
Subject: Science
Grades: 9, 10, 11, 12

Title	Common Among States	North Carolina Common Core State and Essential Standards	North Carolina Common Core State and Essential Standards	North Carolina Common Core State and Essential Standards	North Carolina Common Core State and Essential Standards
Action Potential -	NC	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system. OBio.4.1. - Understand how biological molecules are essential to the survival of living organisms NC.OA. - Occupational Course of Study - Applied Science OA7.1. - Understand the human body's basic needs and control systems. OA7.1.1. - Explain the primary functions of the major systems of the human body and the major organs within these systems. OA7.1.2. - Identify normal or desirable ranges for common health indicators (temperature, blood pressure, weight, cholesterol and blood glucose levels). NC.CC.9-10.RST. - Reading Standards for Literacy in Science and Technical Subjects 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. 9-10.RST.2. - Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. 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. 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		9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented. 9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 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. 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. 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. 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). 9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented. 9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 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. 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. 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. 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). 9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. 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		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.	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.	11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.	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.
		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.	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.	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.	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.
		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.	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.	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.	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.
		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).	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).	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.	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.
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		9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.3. - (See note; not applicable as a separate requirement)	11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.
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NC.CC.11-12.WHST. - Writing Standards for Literacy in Science and Technical Subjects 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. 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 and in a manner that anticipates the audience's knowledge level and concerns. 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. 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. 11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented. 11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 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. 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. 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. 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.

		9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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. 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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Membrane Potential -	NC	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system. OBio.4.1. - Understand how biological molecules are essential to the survival of living organisms NC.OA. - Occupational Course of Study - Applied Science OA7.1. - Understand the human body's basic needs and control systems. OA7.1.1. - Explain the primary functions of the major systems of the human body and the major organs within these systems. 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		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. 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		9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
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NC.CC.11-12.RST. - Reading Standards for Literacy in Science and Technical Subjects 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. 11-12.RST.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. 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. 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. NC.CC.11-12.WHST. - Writing Standards for Literacy in Science and Technical Subjects 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. 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. 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. 11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented. 11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 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. 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.

		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. 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). 9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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. 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). 9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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. 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. 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. 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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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. 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. 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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Osmosis -	NC	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system. NC.OA. - Occupational Course of Study - Applied Science OA7.1. - Understand the human body's basic needs and control systems. OA7.1.2. - Identify normal or desirable ranges for common health indicators (temperature, blood pressure, weight, cholesterol and blood glucose levels). OA7.1.3. - Classify health problems and symptoms in terms of whether they require or do not require medical attention. NC.CC.9-10.RST. - Reading Standards for Literacy in Science and Technical Subjects 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.	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system. NC.OA. - Occupational Course of Study - Applied Science OA7.1. - Understand the human body's basic needs and control systems. OA7.1.2. - Identify normal or desirable ranges for common health indicators (temperature, blood pressure, weight, cholesterol and blood glucose levels). OA7.1.3. - Classify health problems and symptoms in terms of whether they require or do not require medical attention. NC.CC.9-10.RST. - Reading Standards for Literacy in Science and Technical Subjects 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.	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system. NC.OA. - Occupational Course of Study - Applied Science OA7.1. - Understand the human body's basic needs and control systems. OA7.1.2. - Identify normal or desirable ranges for common health indicators (temperature, blood pressure, weight, cholesterol and blood glucose levels). OA7.1.3. - Classify health problems and symptoms in terms of whether they require or do not require medical attention. NC.CC.11-12.RST. - Reading Standards for Literacy in Science and Technical Subjects 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.	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system. NC.OA. - Occupational Course of Study - Applied Science OA7.1. - Understand the human body's basic needs and control systems. OA7.1.2. - Identify normal or desirable ranges for common health indicators (temperature, blood pressure, weight, cholesterol and blood glucose levels). OA7.1.3. - Classify health problems and symptoms in terms of whether they require or do not require medical attention. NC.CC.11-12.RST. - Reading Standards for Literacy in Science and Technical Subjects 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.

		9-10.RST.2. - Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. 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. NC.CC.9-10.WHST. - Writing Standards for Literacy in Science and Technical Subjects 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. 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. 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. 9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented. 9-10.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 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. 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. 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. 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).	9-10.RST.2. - Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. 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. 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		9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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. 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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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). 11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Photosynthesis -	NC	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.2.2. - Understand the impact of human activities on the environment (one generation affects the next). Bio.2.2.1. - Infer how human activities (including population growth, pollution, global warming, burning of fossil fuels, habitat destruction and introduction of nonnative species) may impact the environment. Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.1. - Compare the structures and functions of the major biological molecules (carbohydrates, proteins, lipids, and nucleic acids) as related to the survival of living organisms. Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. Bio.4.2. - Analyze the relationships between biochemical processes and energy use in the cell. Bio.4.2.1. - Analyze photosynthesis and cellular respiration in terms of how energy is stored, released, and transferred within and between these systems. NC.Chm. - Chemistry Chm.1.3. - Understand the physical and chemical properties of atoms based on their position in the Periodic Table. Chm.1.3.1. - Classify the components of a periodic table (period, group, metal, metalloid, nonmetal, transition). NC.EEn. - Earth/Environmental Science EEn.2.6. - Analyze patterns of global climate change over time. EEn.2.6.3. - Analyze the impacts that human activities have on global climate change (such as burning hydrocarbons, greenhouse effect, and deforestation).	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. 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Chm.1.3.1. - Classify the components of a periodic table (period, group, metal, metalloid, nonmetal, transition). NC.EEn. - Earth/Environmental Science EEn.2.6. - Analyze patterns of global climate change over time. EEn.2.6.3. - Analyze the impacts that human activities have on global climate change (such as burning hydrocarbons, greenhouse effect, and deforestation).

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The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	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. 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. 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. 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). 9-10.WHST.3. - (See note; not applicable as a separate requirement) 9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. 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Synaptic Transmission -	NC	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system.	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system.	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system.	NC.Bio. - Biology - Structure and Functions of Living Organisms Bio.1.2. - Analyze the cell as a living system. Bio.1.2.1. - Explain how homeostasis is maintained in the cell and within an organism in various environments (including: temperature and pH). Bio.4.1. - Understand how biological molecules are essential to the survival of living organisms Bio.4.1.3. - Explain how enzymes act as catalysts for biological reactions. NC.OBio. - Occupational Course of Study - Biology OBio.1.2. - Analyze the cell as a living system.

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		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.	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.	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.	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.
		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.	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.	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.	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.
		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).	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).	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.	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.
		9-10.WHST.3. - (See note; not applicable as a separate requirement)	9-10.WHST.3. - (See note; not applicable as a separate requirement)	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.	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).
		9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.	9-10.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.	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).	11-12.WHST.3. - (See note; not applicable as a separate requirement)
		9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.3. - (See note; not applicable as a separate requirement) 11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.3.a. - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

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