

**Main Criteria:** Cogent Education's Interactive Cases  
**Secondary Criteria:** Massachusetts Curriculum Frameworks  
**Subject:** Science  
**Grades:** 9, 10, 11, 12



Title	Common Among States	Massachusetts Curriculum Frameworks	Massachusetts Curriculum Frameworks	Massachusetts Curriculum Frameworks	Massachusetts Curriculum Frameworks
Action Potential -	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p>

<p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>
--	--	---	---

		<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Cellular Respiration -	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p>

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

<p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p>	<p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p>
<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p>	<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p>
<p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p>
<p>WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1. - Write arguments focused on discipline-specific content.  WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p>	<p>WHST.11-12.1. - Write arguments focused on discipline-specific content.  WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p>
<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>
<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.  WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.  WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.  WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.  WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>
<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>
<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>WHST.11-12.2(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. WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>

		<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Diffusion -	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.1. - Recognize that biological organisms are composed primarily of very few elements. The six most common are C, H, N, O, P, S.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p> <p>B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.1. - Recognize that biological organisms are composed primarily of very few elements. The six most common are C, H, N, O, P, S.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p> <p>B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.1. - Recognize that biological organisms are composed primarily of very few elements. The six most common are C, H, N, O, P, S.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p> <p>B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.1. - Recognize that biological organisms are composed primarily of very few elements. The six most common are C, H, N, O, P, S.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.</p> <p>B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects

WHST.9-10.1. - Write arguments focused on discipline-specific content.

WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.

WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.

WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects

WHST.9-10.1. - Write arguments focused on discipline-specific content.

WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.

WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.

WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.9. - 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.

MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects

WHST.11-12.1. - Write arguments focused on discipline-specific content.

WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11-12.9. - 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.

MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects

WHST.11-12.1. - Write arguments focused on discipline-specific content.

WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

		<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Filtration -	MA	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p>	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p>	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p>	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p>



B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

B.4.1. - Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth.

B.4.2. - Explain how the circulatory system (heart, arteries, veins, capillaries, red blood cells) transports nutrients and oxygen to cells and removes cell wastes. Describe how the kidneys and the liver are closely associated with the circulatory system as they perform the excretory function of removing waste from the blood. Recognize that kidneys remove nitrogenous wastes, and the liver removes many toxic compounds from blood.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.1. - Present relationships between and among variables in appropriate forms.

B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS1. - Construct and use tables and graphs to interpret data sets.

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

<p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p>	<p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p>
<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p>	<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p>
<p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p>
<p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p>	<p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p>	<p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p>	<p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p>
<p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p>	<p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p>
<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>
<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>
<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.9-10.2(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. WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>
<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>
<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>
<p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>
<p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>

		<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Membrane Potential -	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism.</p> <p>Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p>

<p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>	<p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p>	<p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>
---	---	---	---

		<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Membrane Transport -	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p>

B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).

B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).

B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).

B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).

B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.

B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.

B.SIS. - Scientific Inquiry Skills Standards

B.SIS1. - Make observations, raise questions, and formulate hypotheses.

B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.

B.SIS2. - Design and conduct scientific investigations.

B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.

B.SIS2.5. - Employ appropriate methods for accurately and consistently

B.SIS2.5.c. - Collecting data or evidence in an organized way

B.SIS3. - Analyze and interpret results of scientific investigations.

B.SIS3.4. - Use mathematical operations to analyze and interpret data results.

B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.

B.SIS4. - Communicate and apply the results of scientific investigations.

B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.

B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.

B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.

B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.

B.MS. - Mathematical Skills

B.MS2. - Solve simple algebraic expressions.

MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects

- Key Ideas and Details

RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>
--	--	---	---

		<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
<b>Nitrogen Cycle -</b>	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.6. - Ecology: Ecology is the interaction among organisms and between organisms and their environment.</p> <p>B.6.4. - Explain how water, carbon, and nitrogen cycle between abiotic resources and organic matter in an ecosystem and how oxygen cycles through photosynthesis and respiration.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.6. - Ecology: Ecology is the interaction among organisms and between organisms and their environment.</p> <p>B.6.4. - Explain how water, carbon, and nitrogen cycle between abiotic resources and organic matter in an ecosystem and how oxygen cycles through photosynthesis and respiration.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.6. - Ecology: Ecology is the interaction among organisms and between organisms and their environment.</p> <p>B.6.4. - Explain how water, carbon, and nitrogen cycle between abiotic resources and organic matter in an ecosystem and how oxygen cycles through photosynthesis and respiration.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.6. - Ecology: Ecology is the interaction among organisms and between organisms and their environment.</p> <p>B.6.4. - Explain how water, carbon, and nitrogen cycle between abiotic resources and organic matter in an ecosystem and how oxygen cycles through photosynthesis and respiration.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p>



<p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>	<p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p>	<p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p>
<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>
<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>

		<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Osmosis -	MA	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>	<p>MA.B. - BIOLOGY</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>

<p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p>	<p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p>
---	---	---	---

		<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Photosynthesis -	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.2. - Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids).</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p>

<p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.1. - Present relationships between and among variables in appropriate forms.</p> <p>B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS1. - Construct and use tables and graphs to interpret data sets.</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p>	<p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.1. - Present relationships between and among variables in appropriate forms.</p> <p>B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS1. - Construct and use tables and graphs to interpret data sets.</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p>	<p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.1. - Present relationships between and among variables in appropriate forms.</p> <p>B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS1. - Construct and use tables and graphs to interpret data sets.</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p>	<p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.2.4. - Identify the reactants, products, and basic purposes of photosynthesis and cellular respiration. Explain the interrelated nature of photosynthesis and cellular respiration in the cells of photosynthetic organisms.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.1. - Present relationships between and among variables in appropriate forms.</p> <p>B.SIS3.2. - Represent data and relationships between and among variables in charts and graphs.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p> <p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.3. - Explain diagrams and charts that represent relationships of variables.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS1. - Construct and use tables and graphs to interpret data sets.</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p>
--	--	---	---

<p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p>	<p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p>	<p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p>	<p>RST.11-12.9. - 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>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p>	<p>RST.11-12.10. - 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>WHST.9-10.1. - Write arguments focused on discipline-specific content.          WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.          WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.          WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.9-10.1. - Write arguments focused on discipline-specific content.          WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.          WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.          WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects          WHST.11-12.1. - Write arguments focused on discipline-specific content.           WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.          WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.          WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.          WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects          WHST.11-12.1. - Write arguments focused on discipline-specific content.           WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.          WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.          WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.          WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>
<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>	<p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>
<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.          WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.          WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.          WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.          WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.           WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.           WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>
<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>	<p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p>
<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>	<p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>
<p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p>	<p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>	<p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p>
<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p>	<p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p>

		<p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
Synaptic Transmission	MA	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p>	<p>MA.B. - BIOLOGY</p> <p>B.1. - The Chemistry of Life: Chemical elements form organic molecules that interact to perform the basic functions of life.</p> <p>B.1.3. - Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, which have an effect on enzymes.</p> <p>B.2. - Cell Biology: Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction.</p> <p>B.2.1. - Relate cell parts/organelles (plasma membrane, nuclear envelope, nucleus, nucleolus, cytoplasm, mitochondrion, endoplasmic reticulum, Golgi apparatus, lysosome, ribosome, vacuole, cell wall, chloroplast, cytoskeleton, centriole, cilium, flagellum, pseudopod) to their functions. Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, facilitated diffusion, and active transport).</p> <p>B.4. - Anatomy and Physiology: There is a relationship between the organization of cells into tissues, and tissues into organs. The structure and function of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions.</p> <p>B.4.4. - Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication between different parts of the body and the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.</p> <p>B.4.7. - Recognize that communication between cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.</p> <p>B.4.8. - Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p> <p>B.SIS. - Scientific Inquiry Skills Standards</p> <p>B.SIS1. - Make observations, raise questions, and formulate hypotheses.</p> <p>B.SIS1.2. - Pose questions and form hypotheses based on personal observations, scientific articles, experiments, and knowledge.</p> <p>B.SIS2. - Design and conduct scientific investigations.</p> <p>B.SIS2.1. - Articulate and explain the major concepts being investigated and the purpose of an investigation.</p> <p>B.SIS2.5. - Employ appropriate methods for accurately and consistently</p> <p>B.SIS2.5.c. - Collecting data or evidence in an organized way</p> <p>B.SIS3. - Analyze and interpret results of scientific investigations.</p> <p>B.SIS3.4. - Use mathematical operations to analyze and interpret data results.</p>

<p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>	<p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>B.SIS3.6. - Use results of an experiment to develop a conclusion to an investigation that addresses the initial questions and supports or refutes the stated hypothesis.</p> <p>B.SIS4. - Communicate and apply the results of scientific investigations.</p> <p>B.SIS4.1. - Develop descriptions of and explanations for scientific concepts that were a focus of one or more investigations.</p> <p>B.SIS4.2. - Review information, explain statistical analysis, and summarize data collected and analyzed as the result of an investigation.</p> <p>B.SIS4.4. - Construct a reasoned argument and respond appropriately to critical comments and questions.</p> <p>B.SIS4.6. - Use and refine scientific models that simulate physical processes or phenomena.</p> <p>B.MS. - Mathematical Skills</p> <p>B.MS2. - Solve simple algebraic expressions.</p> <p>MA.CC.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>MA.CC.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>
--	--	--	--



	<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
--	--	--	---	---



Publisher content is reviewed and aligned to educational standards by EdGate's experienced and highly skilled subject experts giving the high quality results demanded by today's market.