



Title	Common Among States	Mississippi Standards and Frameworks	Mississippi Standards and Frameworks	Mississippi Standards and Frameworks	Mississippi Standards and Frameworks
Action Potential -	MS	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)</p> <p>2.e.1. - Enzyme structure</p> <p>2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)</p> <p>BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.</p> <p>4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. 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<p>4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)</p> <p>4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)</p> <p>MS.BII. - Biology II</p> <p>BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)</p> <p>1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. 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(DOK 1)</p> <p>2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions</p> <p>2.d. - Categorize the relationship of the cell and its functions to the more complex levels of organization within the body. (DOK 2)</p> <p>2.d.1. - Anabolic and catabolic reactions within a human cell</p> <p>2.d.2. - Four major categories of tissues and their location, structure, and function</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. 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<p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>
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Cellular Respiration -	MS	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>2.d. - Compare and contrast the basic processes of photosynthesis and cellular respiration. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>2.d. - Compare and contrast the basic processes of photosynthesis and cellular respiration. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>2.d. - Compare and contrast the basic processes of photosynthesis and cellular respiration. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>2.d. - Compare and contrast the basic processes of photosynthesis and cellular respiration. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p>



<p>MS.HAP. - Human Anatomy &amp; Physiology  HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  2.c.3. - Major types of chemical reactions employed within the organ systems  2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions  HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.  3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)  3.k. - Identify and discuss the structures and functions of the organs of the digestive system and discuss their relationships to the interaction among the human body systems. (DOK 2)  3.k.2. - Roles of organs in the mechanical and chemical digestion of food and nutrient absorption  3.k.3. - Contents of the alimentary canal and how they are mixed and moved  3.k.4. - Enzymes and gland secretions as related to the absorption of digestion products  3.o. - Demonstrate an understanding of the structures and functions of the circulatory system and their role in maintaining homeostasis. (DOK 2)  3.o.2. - Pulmonary and systemic circulation  MS.BR. - Biomedical Research  BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.  2.a.2. - Biomedicine-related websites, including the Center for Disease  2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience  BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.  MS.ES. - Environmental Science  ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  MS.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.  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>MS.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.  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.</p>	<p>MS.HAP. - Human Anatomy &amp; Physiology  HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  2.c.3. - Major types of chemical reactions employed within the organ systems  2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions  HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.  3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)  3.k. - Identify and discuss the structures and functions of the organs of the digestive system and discuss their relationships to the interaction among the human body systems. (DOK 2)  3.k.2. - Roles of organs in the mechanical and chemical digestion of food and nutrient absorption  3.k.3. - Contents of the alimentary canal and how they are mixed and moved  3.k.4. - Enzymes and gland secretions as related to the absorption of digestion products  3.o. - Demonstrate an understanding of the structures and functions of the circulatory system and their role in maintaining homeostasis. (DOK 2)  3.o.2. - Pulmonary and systemic circulation  MS.BR. - Biomedical Research  BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.  2.a.2. - Biomedicine-related websites, including the Center for Disease  2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience  BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.  MS.ES. - Environmental Science  ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  MS.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.  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>MS.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.  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.</p>	<p>MS.HAP. - Human Anatomy &amp; Physiology  HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  2.c.3. - Major types of chemical reactions employed within the organ systems  2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions  HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.  3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)  3.k. - Identify and discuss the structures and functions of the organs of the digestive system and discuss their relationships to the interaction among the human body systems. (DOK 2)  3.k.2. - Roles of organs in the mechanical and chemical digestion of food and nutrient absorption  3.k.3. - Contents of the alimentary canal and how they are mixed and moved  3.k.4. - Enzymes and gland secretions as related to the absorption of digestion products  3.o. - Demonstrate an understanding of the structures and functions of the circulatory system and their role in maintaining homeostasis. (DOK 2)  3.o.2. - Pulmonary and systemic circulation  MS.BR. - Biomedical Research  BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.  2.a.2. - Biomedicine-related websites, including the Center for Disease  2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience  BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.  MS.ES. - Environmental Science  ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  MS.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.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.  RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.  RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.  MS.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.</p>	<p>MS.HAP. - Human Anatomy &amp; Physiology  HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  2.c.3. - Major types of chemical reactions employed within the organ systems  2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions  HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.  3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. 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The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. 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Diffusion -	MS	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p>

<p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. 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(DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. (DOK 2)</p> <p>2.d.1. - Basic chemical composition of each group</p> <p>2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)</p> <p>2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group</p> <p>BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.</p> <p>4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.</p> <p>4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)</p> <p>4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)</p> <p>4.c.1. - Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions)</p> <p>MS.BII. - Biology II</p> <p>BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)</p> <p>1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)</p> <p>BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.</p> <p>2.b. - Summarize how cell regulation controls and coordinates cell growth and division. (DOK 2)</p> <p>MS.G. - Genetics</p>	<p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. 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(DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. 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(DOK 3)</p> <p>1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)</p> <p>BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.</p> <p>2.b. - Summarize how cell regulation controls and coordinates cell growth and division. (DOK 2)</p> <p>MS.G. - Genetics</p>	<p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. 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(DOK 2)</p> <p>2.d.1. - Basic chemical composition of each group</p> <p>2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)</p> <p>2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group</p> <p>BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.</p> <p>4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.</p> <p>4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)</p> <p>4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)</p> <p>4.c.1. - Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions)</p> <p>MS.BII. - Biology II</p> <p>BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)</p> <p>1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)</p> <p>BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.</p> <p>2.b. - Summarize how cell regulation controls and coordinates cell growth and division. (DOK 2)</p> <p>MS.G. - Genetics</p>	<p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. (DOK 2)</p> <p>2.d.1. - Basic chemical composition of each group</p> <p>2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)</p> <p>2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group</p> <p>BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.</p> <p>4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.</p> <p>4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)</p> <p>4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)</p> <p>4.c.1. - Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions)</p> <p>MS.BII. - Biology II</p> <p>BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. 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(DOK 2)</p> <p>3.k.1. - Major organs of the digestive system (e.g., alimentary canal and accessory structures)</p> <p>3.k.2. - Roles of organs in the mechanical and chemical digestion of food and nutrient absorption</p> <p>3.k.3. - Contents of the alimentary canal and how they are mixed and moved</p> <p>3.k.4. - Enzymes and gland secretions as related to the absorption of digestion products</p> <p>3.l. - Research common disorders or diseases of the digestive system and identify a diagnosis, based upon a given set of symptoms, for a specific disorder. (DOK 3)</p> <p>3.o. - Demonstrate an understanding of the structures and functions of the circulatory system and their role in maintaining homeostasis. 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(DOK 1)</p> <p>4.b.1. - Bonding families of hydrocarbons</p> <p>MS.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>MS.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.</p> <p>2.c.1. - Cell cycle and mitosis</p> <p>MS.MB. - Microbiology</p> <p>MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.B. - Botany</p> <p>B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.Z. - Zoology</p> <p>Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.MAS. - Marine &amp; Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>2.c.2. - Major groups of organic substances in the human body</p> <p>2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.k. - Identify and discuss the structures and functions of the organs of the digestive system and discuss their relationships to the interaction among the human body systems. 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	<p>WHST.9-10.1 - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(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 - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>MS.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.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. 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(DOK 2)</p> <p>2.d.2. - Four major categories of tissues and their location, structure, and function</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.k. - Identify and discuss the structures and functions of the organs of the digestive system and discuss their relationships to the interaction among the human body systems. (DOK 2)</p> <p>3.k.1. - Major organs of the digestive system (e.g., alimentary canal and accessory structures)</p> <p>3.k.2. - Roles of organs in the mechanical and chemical digestion of food and nutrient absorption</p> <p>3.k.3. - Contents of the alimentary canal and how they are mixed and moved</p> <p>3.k.4. - Enzymes and gland secretions as related to the absorption of digestion products</p> <p>3.l. - Research common disorders or diseases of the digestive system and identify a diagnosis, based upon a given set of symptoms, for a specific disorder. 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(DOK 1)</p> <p>3.t. - Research and describe the treatments of common urinary system disorders. (DOK 1)</p> <p>MS.BR. - Biomedical Research</p>
<p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.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>MS.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.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>MS.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.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>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.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>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>MS.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.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>MS.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.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
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<p>Membrane Potential - MS</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions    1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios    1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.    2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)    IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.    4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)  MS.BI. - Biology I    BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  2.e.1. - Enzyme structure  2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  MS.BII. - Biology II</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions    1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios    1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.    2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)    IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.    4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)  MS.BI. - Biology I    BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  2.e.1. - Enzyme structure  2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  MS.BII. - Biology II</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions    1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios    1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.    2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. 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(DOK 3)  BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  2.e.1. - Enzyme structure  2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  MS.BII. - Biology II</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions    1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios    1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.    2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)    IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.    4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)  MS.BI. - Biology I    BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  2.e.1. - Enzyme structure  2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  MS.BII. - Biology II</p>
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<p>BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)</p> <p>1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)</p> <p>BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.</p> <p>2.c. - Analyze and describe the function of enzymes in biochemical reactions. (DOK 2)</p> <p>2.c.1. - The impact of enzymatic reactions on biochemical processes</p> <p>2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)</p> <p>MS.G. - Genetics</p> <p>G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.MB. - Microbiology</p> <p>MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.B. - Botany</p> <p>B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.Z. - Zoology</p> <p>Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.MAS. - Marine &amp; Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>2.b. - Explain how specific mechanisms (e.g., feedback, transport, pH, temperature regulation, etc.) maintain homeostasis. 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The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. 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include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>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>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>MS.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; 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		WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	WHST.11-12.3. - (See note; not applicable as a separate requirement)  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. WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	WHST.11-12.3. - (See note; not applicable as a separate requirement)  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. WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
<b>Membrane Transport</b> -	MS	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)</p> <p>MS.Bi. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. (DOK 2)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. 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(DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. (DOK 2)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)</p> <p>MS.Bi. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. (DOK 2)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)</p> <p>MS.Bi. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. (DOK 2)</p>

2.d.1. - Basic chemical composition of each group	2.d.1. - Basic chemical composition of each group	2.d.1. - Basic chemical composition of each group	2.d.1. - Basic chemical composition of each group
2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)	2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)	2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)	2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)
2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group	2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group	2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group	2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group
2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)	2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)	2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)	2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)
2.e.1. - Enzyme structure	2.e.1. - Enzyme structure	2.e.1. - Enzyme structure	2.e.1. - Enzyme structure
2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)	2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)	2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)	2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)
BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.	BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.	BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.	BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.
4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.	4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.	4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.	4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.
4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)	4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)	4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)	4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)
4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)	4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)	4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)	4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)
MS.BII. - Biology II	MS.BII. - Biology II	MS.BII. - Biology II	MS.BII. - Biology II
BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)	1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)	1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)	1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)
1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)	1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)	1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)	1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)
BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.	BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.	BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.	BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.
2.c.1. - The impact of enzymatic reactions on biochemical processes	2.c.1. - The impact of enzymatic reactions on biochemical processes	2.c.1. - The impact of enzymatic reactions on biochemical processes	2.c.1. - The impact of enzymatic reactions on biochemical processes
2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)	2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)	2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)	2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)
MS.G. - Genetics	MS.G. - Genetics	MS.G. - Genetics	MS.G. - Genetics
G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.	G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.	G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.	G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.
2.b. - Describe how organic components are integral to biochemical processes. (DOK 2)	2.b. - Describe how organic components are integral to biochemical processes. (DOK 2)	2.b. - Describe how organic components are integral to biochemical processes. (DOK 2)	2.b. - Describe how organic components are integral to biochemical processes. (DOK 2)
MS.MB. - Microbiology	MS.MB. - Microbiology	MS.MB. - Microbiology	MS.MB. - Microbiology
MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
MS.B. - Botany	MS.B. - Botany	MS.B. - Botany	MS.B. - Botany
B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
MS.Z. - Zoology	MS.Z. - Zoology	MS.Z. - Zoology	MS.Z. - Zoology
Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
MS.MAS. - Marine & Aquatic Science	MS.MAS. - Marine & Aquatic Science	MS.MAS. - Marine & Aquatic Science	MS.MAS. - Marine & Aquatic Science
MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
MS.HAP. - Human Anatomy & Physiology	MS.HAP. - Human Anatomy & Physiology	MS.HAP. - Human Anatomy & Physiology	MS.HAP. - Human Anatomy & Physiology
HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.	HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.
HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.	HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.	HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.	HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.
2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions	2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions	2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions	2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions
HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.	HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.	HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.	HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.
3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)	3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)	3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)	3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)
3.g.1. - Four types of neurological cells and the functions of each	3.g.1. - Four types of neurological cells and the functions of each	3.g.1. - Four types of neurological cells and the functions of each	3.g.1. - Four types of neurological cells and the functions of each
3.g.2. - Conduction of a nerve impulse	3.g.2. - Conduction of a nerve impulse	3.g.2. - Conduction of a nerve impulse	3.g.2. - Conduction of a nerve impulse

<p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.) MS.BR. - Biomedical Research BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research. 2.a.2. - Biomedicine-related websites, including the Center for Disease 2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research. 4.b.1. - Bonding families of hydrocarbons MS.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.  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.  MS.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.  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>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.) MS.BR. - Biomedical Research BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research. 2.a.2. - Biomedicine-related websites, including the Center for Disease 2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research. 4.b.1. - Bonding families of hydrocarbons MS.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.  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.  MS.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.  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>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.) MS.BR. - Biomedical Research BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research. 2.a.2. - Biomedicine-related websites, including the Center for Disease 2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research. 4.b.1. - Bonding families of hydrocarbons MS.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.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. MS.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.  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>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.) MS.BR. - Biomedical Research BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. 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<p>3.b.2. - Predation, competition, symbiosis, mutualism, commensalism, parasitism, etc.</p> <p>3.d. - Predict the impact of human activities (e.g., recycling, pollution, overpopulation) on the environment. (DOK 3)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d. - Compare and contrast the structure, properties, and principal functions of carbohydrates, lipids, proteins, and nucleic acids in living organisms. 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(DOK 2)</p> <p>MS.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>MS.CC.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p>	<p>MS.Z. - Zoology</p> <p>Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>Z.3. - Life Science: Differentiate among animal life cycles, behaviors, adaptations, and relationships.</p> <p>3.b.1. - Division of labor within a group of animals</p> <p>MS.MAS. - Marine &amp; Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.</p> <p>4.b. - Apply formulas and properties in analyzing hydrocarbon families. 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(DOK 2)</p> <p>3.a.1. - Sources, uses, quality, and conservation of water</p> <p>3.a.2. - Renewable and nonrenewable resources</p> <p>3.a.3. - Effects of pollution (e.g., water, noise, air, etc.) on the ecosystem</p> <p>MS.GEO. - Geology</p> <p>GEO.2. - Earth and Space Science: Develop an understanding of plate tectonics and geochemical and ecological processes that affect Earth.</p> <p>2.f. - Develop a logical argument to explain how geochemical and ecological processes (e.g., rock, hydrologic, carbon, nitrogen) interact through time to cycle matter and energy, and how human activity alters the rates of these processes (e.g., fossil fuel formation and combustion, damming and channeling of rivers). (DOK 2)</p> <p>MS.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>MS.Z. - Zoology</p> <p>Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>Z.3. - Life Science: Differentiate among animal life cycles, behaviors, adaptations, and relationships.</p> <p>3.b.1. - Division of labor within a group of animals</p> <p>MS.MAS. - Marine &amp; Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.</p> <p>4.b. - Apply formulas and properties in analyzing hydrocarbon families. 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(DOK 2)</p> <p>3.a.1. - Sources, uses, quality, and conservation of water</p> <p>3.a.2. - Renewable and nonrenewable resources</p> <p>3.a.3. - Effects of pollution (e.g., water, noise, air, etc.) on the ecosystem</p> <p>MS.GEO. - Geology</p> <p>GEO.2. - Earth and Space Science: Develop an understanding of plate tectonics and geochemical and ecological processes that affect Earth.</p> <p>2.f. - Develop a logical argument to explain how geochemical and ecological processes (e.g., rock, hydrologic, carbon, nitrogen) interact through time to cycle matter and energy, and how human activity alters the rates of these processes (e.g., fossil fuel formation and combustion, damming and channeling of rivers). (DOK 2)</p> <p>MS.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>
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	<p>WHST.9-10.1 - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(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 - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>MS.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.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>MS.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.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
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<p>Osmosis -</p>	<p>MS</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions   1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios   1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.  4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)  MS.BI. - Biology I   BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  4.c.1. - Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions  MS.BII. - Biology II  BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)  BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  2.a. - Relate the structure and function of a selectively permeable membrane to its role in diffusion and osmosis. (DOK 2)  2.b. - Summarize how cell regulation controls and coordinates cell growth and division. (DOK 2)  MS.G. - Genetics  G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  2.c. - Differentiate among the processes by which plants and animals reproduce. (DOK 1)  2.c.1. - Cell cycle and mitosis  MS.MB. - Microbiology  MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  MS.B. - Botany</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions   1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios   1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.  4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)  MS.BI. - Biology I   BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  4.c.1. - Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions  MS.BII. - Biology II  BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. 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(DOK 1)  2.c.1. - Cell cycle and mitosis  MS.MB. - Microbiology  MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  MS.B. - Botany</p>	<p>MS.IB. - Introduction to Biology  IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions   1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios   1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.  4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)  MS.BI. - Biology I   BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  4.c.1. - Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions  MS.BII. - Biology II  BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)  BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  2.a. - Relate the structure and function of a selectively permeable membrane to its role in diffusion and osmosis. (DOK 2)  2.b. - Summarize how cell regulation controls and coordinates cell growth and division. (DOK 2)  MS.G. - Genetics  G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  2.c. - Differentiate among the processes by which plants and animals reproduce. (DOK 1)  2.c.1. - Cell cycle and mitosis  MS.MB. - Microbiology  MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  MS.B. - Botany</p>
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<p>B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.Z. - Zoology Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.MAS. - Marine &amp; Aquatic Science MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.HAP. - Human Anatomy &amp; Physiology HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body. 2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions MS.BR. - Biomedical Research BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research. 2.a.2. - Biomedicine-related websites, including the Center for Disease 2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience MS.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.  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.  MS.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.  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.</p>	<p>B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.Z. - Zoology Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.MAS. - Marine &amp; Aquatic Science MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. 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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. MS.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.  WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p>	<p>B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.Z. - Zoology Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. MS.MAS. - Marine &amp; Aquatic Science MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations. 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In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. 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>
Photosynthesis -	MS	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)</p> <p>1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)</p> <p>1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.d. - Interpret and generate graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs. (DOK 2)</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)</p> <p>IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p>

<p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>2.c. - Compare the composition and primary properties of carbohydrates, proteins, lipids, and nucleic acids and relate these to their functions in living organisms. (DOK 2)</p> <p>2.d. - Compare and contrast the basic processes of photosynthesis and cellular respiration. (DOK 2)</p> <p>IB.3. - Life Science: Investigate and explain how organisms interact with their environment.</p> <p>IB.3. - Life Science: Investigate and explain how organisms interact with their environment.</p> <p>3.d. - Predict the impact of human activities (e.g., recycling, pollution, overpopulation) on the environment. (DOK 3)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.c. - Describe how active, passive, and facilitated transports relate to the maintenance of homeostasis. (DOK 1)</p> <p>MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)</p> <p>BI.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.</p> <p>2.d.1. - Basic chemical composition of each group</p> <p>2.d.2. - Building components of each group (e.g., amino acids, monosaccharides, nucleotides, etc.)</p> <p>2.d.3. - Basic functions (e.g., energy, storage, cellular, heredity) of each group</p> <p>2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)</p> <p>2.e.1. - Enzyme structure</p> <p>2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)</p> <p>2.g. - Analyze and explain the biochemical process of photosynthesis and cellular respiration and draw conclusions about the roles of the reactant and products in each. (DOK 3)</p> <p>2.g.1. - Photosynthesis and respiration (reactants and products)</p> <p>2.g.2. - Light-dependent reactions and light-independent reactions in photosynthesis, including requirements and products of each</p> <p>BI.3. - Life Science: Investigate and evaluate the interaction between living organisms and their environment.</p> <p>3.a. - Compare and contrast the characteristics of the world's major biomes (e.g., deserts, tundra, taiga, grassland, temperate forest, tropical rainforest). (DOK 2)</p> <p>3.a.1. - Plant and animal species</p> <p>3.c. - Examine and evaluate the significance of natural events and human activities on major ecosystems (e.g., succession, population growth, technology, loss of genetic diversity, consumption of resources). (DOK 2)</p> <p>BI.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.</p> <p>4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.</p> <p>4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)</p> <p>4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)</p> <p>4.b. - Analyze and explain the biochemical process of photosynthesis and cellular respiration and draw conclusions about the roles of the reactant and products in each. 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(DOK 2)</p> <p>3.a.1. - Plant and animal species</p> <p>3.c. - Examine and evaluate the significance of natural events and human activities on major ecosystems (e.g., succession, population growth, technology, loss of genetic diversity, consumption of resources). 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6.a. - Draw conclusions about how organisms are classified into a hierarchy of groups and subgroups based on similarities that reflect their evolutionary relationships. (DOK 2)

6.a.1. - Characteristics of the six kingdoms  
MS.BII. - Biology II  
BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  
BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  
2.c.1. - The impact of enzymatic reactions on biochemical processes  
2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)  
2.d.4. - Oxidation and reduction reactions  
BII.4. - Life Science: Demonstrate an understanding of the factors that contribute to evolutionary theory and natural selection.  
4.i. - Analyze changes in an ecosystem resulting from natural causes (succession), changes in climate, human activity (pollution and recycling), or introduction of non-native species. (DOK 2)  
BII.5. - Life Science: Develop an understanding of organism classification.  
5.b. - Categorize organisms according to the characteristics that distinguish them as Bacteria, Archaea, or Eucarya. (DOK 1)  
5.b.4. - Nomenclature of various types of plants (e.g., Bryophyta, Tracheophyta, Gymnospermae, Angiospermae, Monocotyledonae, Dicotyledonae, vascular plants, nonvascular plants).  
MS.G. - Genetics  
G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  
2.b. - Describe how organic components are integral to biochemical processes. (DOK 2)  
MS.MB. - Microbiology  
MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MB.3. - Life Science: Explore and demonstrate an understanding of the classification of microorganisms.  
3.b. - Cite examples and compare the characteristics of prokaryotes, fungi, and protists. (DOK 2)  
MS.B. - Botany  
B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
B.2. - Life Science: Distinguish among the characteristics of botanical organization, structure, and function.  
B.4. - Live Science: Draw conclusions about the factors that affect the adaptation and survival of plants.  
MS.Z. - Zoology  
Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
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2.a.1. - Levels of organization of structures in animals (e.g., cells, tissues, organs, and systems)

<p>2.a.2. - Characteristics used to classify organisms (e.g., cell structure, biochemistry, anatomy, fossil record, and methods of reproduction)</p> <p>MS.MAS. - Marine &amp; Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>ES.2. - Earth and Space Science: Develop an understanding of the relationship of ecological factors that effect an ecosystem.</p> <p>ES.3. - Earth and Space Science: Discuss the impact of human activities on the environment, conservation activities, and efforts to maintain and restore ecosystems.</p> <p>3.a.2. - Renewable and nonrenewable resources</p> <p>3.a.3. - Effects of pollution (e.g., water, noise, air, etc.) on the ecosystem</p> <p>MS.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>MS.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>2.a.2. - Characteristics used to classify organisms (e.g., cell structure, biochemistry, anatomy, fossil record, and methods of reproduction)</p> <p>MS.MAS. - Marine &amp; Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>ES.2. - Earth and Space Science: Develop an understanding of the relationship of ecological factors that effect an ecosystem.</p> <p>ES.3. - Earth and Space Science: Discuss the impact of human activities on the environment, conservation activities, and efforts to maintain and restore ecosystems.</p> <p>3.a.2. - Renewable and nonrenewable resources</p> <p>3.a.3. - Effects of pollution (e.g., water, noise, air, etc.) on the ecosystem</p> <p>MS.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>MS.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>2.a.2. - Characteristics used to classify organisms (e.g., cell structure, biochemistry, anatomy, fossil record, and methods of reproduction)</p> <p>MS.MAS. - Marine &amp; 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Aquatic Science</p> <p>MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>MS.HAP. - Human Anatomy &amp; Physiology</p> <p>HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>BR.4. - Life Science: Investigate and describe the basic elements of genetics and molecular biology that are fundamental to modern biomedical research.</p> <p>MS.ES. - Environmental Science</p> <p>ES.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>ES.2. - Earth and Space Science: Develop an understanding of the relationship of ecological factors that effect an ecosystem.</p> <p>ES.3. - Earth and Space Science: Discuss the impact of human activities on the environment, conservation activities, and efforts to maintain and restore ecosystems.</p> <p>3.a.2. - Renewable and nonrenewable resources</p> <p>3.a.3. - Effects of pollution (e.g., water, noise, air, etc.) on the ecosystem</p> <p>MS.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>MS.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>
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	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. 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>
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<p>Synaptic Transmission - MS</p>	<p>MS.IB. - Introduction to Biology</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.b. - Identify questions that can be answered through scientific investigations. (DOK 3)  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)  MS.BI. - Biology I</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)  MS.BI. - Biology I</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. (DOK 2)</p> <p>IB.4. - Life Science: Investigate, compare, and contrast cell structures, functions, and methods of reproduction.</p> <p>4.b. - Describe and explain the relationships between structures and functions of major eukaryotic organelles (e.g., cell wall, cell membrane, chromosomes, mitochondrion, nucleus, chloroplast, vacuole, endoplasmic reticulum, ribosomes, centrioles, cytoplasm/cytosol, Golgi apparatus, vesicles, lysosomes, microtubules, microfilaments, cytoskeleton, nucleolus, nuclear membrane.) (DOK 2)  MS.BI. - Biology I</p> <p>BI.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p>	<p>MS.IB. - Introduction to Biology</p> <p>IB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  1.c. - Identify and apply components of scientific methods in classroom investigations. (DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. 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(DOK 3)  1.c.1. - Predicting, gathering data, drawing conclusions</p> <p>1.c.2. - Recording outcomes and organizing data from a variety of sources (e.g., scientific articles, magazines, student experiments, etc.)  1.c.3. - Critically analyzing current investigations/problems using periodicals and scientific scenarios</p> <p>1.g. - Communicate effectively to present and explain scientific results, using appropriate terminology and graphics. (DOK 3)  IB.2. - Physical Science: Investigate and summarize the chemical basis of life.</p> <p>2.a. - Compare and contrast atoms, ions, elements, molecules, and compounds in terms of the relationship of the bond types (e.g., ionic, covalent, and hydrogen bonds) to chemical activity and explain how this is relevant to biological activity. 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Bl.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  
Bl.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  
2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  
2.e.1. - Enzyme structure  
2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  
Bl.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  
4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  
4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  
4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  
MS.BII. - Biology II  
BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  
1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)  
BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  
2.c. - Analyze and describe the function of enzymes in biochemical reactions. (DOK 2)  
2.c.1. - The impact of enzymatic reactions on biochemical processes  
2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)  
MS.G. - Genetics  
G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  
MS.MB. - Microbiology  
MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.B. - Botany  
B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.Z. - Zoology  
Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.MAS. - Marine & Aquatic Science  
MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.HAP. - Human Anatomy & Physiology  
HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  
2.b. - Explain how specific mechanisms (e.g., feedback, transport, pH, temperature regulation, etc.) maintain homeostasis. (DOK 1)  
2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions

1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  
1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  
Bl.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  
2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  
2.e.1. - Enzyme structure  
2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  
Bl.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  
4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  
4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  
4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  
MS.BII. - Biology II  
BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  
1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)  
BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  
2.c. - Analyze and describe the function of enzymes in biochemical reactions. (DOK 2)  
2.c.1. - The impact of enzymatic reactions on biochemical processes  
2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)  
MS.G. - Genetics  
G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  
MS.MB. - Microbiology  
MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.B. - Botany  
B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.Z. - Zoology  
Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.MAS. - Marine & Aquatic Science  
MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.HAP. - Human Anatomy & Physiology  
HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  
2.b. - Explain how specific mechanisms (e.g., feedback, transport, pH, temperature regulation, etc.) maintain homeostasis. (DOK 1)  
2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions

1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  
1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  
Bl.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  
2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  
2.e.1. - Enzyme structure  
2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  
Bl.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  
4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  
4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  
4.a.2. - Components of mobility (e.g., cilia, flagella, pseudopodia)  
MS.BII. - Biology II  
BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  
1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)  
BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  
2.c. - Analyze and describe the function of enzymes in biochemical reactions. (DOK 2)  
2.c.1. - The impact of enzymatic reactions on biochemical processes  
2.c.2. - Factors that affect enzyme function (e.g., pH, concentration, temperature, etc.)  
MS.G. - Genetics  
G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  
MS.MB. - Microbiology  
MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.B. - Botany  
B.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.Z. - Zoology  
Z.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.MAS. - Marine & Aquatic Science  
MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.HAP. - Human Anatomy & Physiology  
HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  
2.b. - Explain how specific mechanisms (e.g., feedback, transport, pH, temperature regulation, etc.) maintain homeostasis. (DOK 1)  
2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions

1.b. - Formulate questions that can be answered through research and experimental design. (DOK 3)  
1.f. - Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)  
Bl.2. - Physical Science: Describe the biochemical basis of life and explain how energy flows within and between the living systems.  
2.e. - Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2)  
2.e.1. - Enzyme structure  
2.e.2. - Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)  
Bl.4. - Life Science: Analyze and explain the structures and function of the levels of biological organization.  
4.a. - Differentiate among plant and animal cells and eukaryotic and prokaryotic cells.  
4.a.1. - Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)  
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MS.BII. - Biology II  
BII.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
1.a. - Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)  
1.d. - Organize data to construct graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs), draw conclusions, and make inferences. (DOK 3)  
BII.2. - Life Science: Describe and contrast the structures, functions, and chemical processes of the cell.  
2.c. - Analyze and describe the function of enzymes in biochemical reactions. (DOK 2)  
2.c.1. - The impact of enzymatic reactions on biochemical processes  
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MS.G. - Genetics  
G.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
G.2. - Life Science: Analyze the structure and function of the cell and cellular organelles.  
MS.MB. - Microbiology  
MB.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
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MS.MAS. - Marine & Aquatic Science  
MAS.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
MS.HAP. - Human Anatomy & Physiology  
HAP.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.  
HAP.2. - Life Science: Demonstrate an understanding of the basic organization of the body.  
2.b. - Explain how specific mechanisms (e.g., feedback, transport, pH, temperature regulation, etc.) maintain homeostasis. (DOK 1)  
2.c.4. - Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions



<p>2.d. - Categorize the relationship of the cell and its functions to the more complex levels of organization within the body. (DOK 2)</p> <p>2.d.2. - Four major categories of tissues and their location, structure, and function</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.1. - Four types of neurological cells and the functions of each</p> <p>3.g.2. - Conduction of a nerve impulse</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>2.d. - Categorize the relationship of the cell and its functions to the more complex levels of organization within the body. (DOK 2)</p> <p>2.d.2. - Four major categories of tissues and their location, structure, and function</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.1. - Four types of neurological cells and the functions of each</p> <p>3.g.2. - Conduction of a nerve impulse</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>2.d. - Categorize the relationship of the cell and its functions to the more complex levels of organization within the body. (DOK 2)</p> <p>2.d.2. - Four major categories of tissues and their location, structure, and function</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.1. - Four types of neurological cells and the functions of each</p> <p>3.g.2. - Conduction of a nerve impulse</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>2.d. - Categorize the relationship of the cell and its functions to the more complex levels of organization within the body. (DOK 2)</p> <p>2.d.2. - Four major categories of tissues and their location, structure, and function</p> <p>HAP.3. - Life Science: Demonstrate an understanding of the structure, functions, and relationships of the body systems.</p> <p>3.g. - Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1)</p> <p>3.g.1. - Four types of neurological cells and the functions of each</p> <p>3.g.2. - Conduction of a nerve impulse</p> <p>3.g.4. - Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)</p> <p>MS.BR. - Biomedical Research</p> <p>BR.1. - Inquiry: Apply inquiry-based and problem-solving processes and skills to scientific investigations.</p> <p>BR.2. - Life Science: Demonstrate an understanding of the processes and resources used in biomedical research.</p> <p>2.a.2. - Biomedicine-related websites, including the Center for Disease</p> <p>2.a.3. - Control, the National Institute of Health, the Howard Hughes Medical Institute, and the Society for Neuroscience</p> <p>MS.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>MS.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>
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	<p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.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(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
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