Main Criteria: Cogent Education's Interactive Cases Secondary Criteria: North Dakota Content Standards Subject: Science

Grades: 9, 10, 11, 12



		North Dakota Content Standards	North Dakota Content Standards	North Dakota Content Standards
ND	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying
	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
	·	l '	1	11-12.1.1 Models: Explain how scientists create and use
	illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
				11-12.1.2 Systems: Identify the structure, organization, ar
	within a system (e.g., interactions between living and	within a system (e.g., interactions between living and		dynamics of components within a system (e.g., cells, tissue
	nonliving components of an ecosystem, interaction between	nonliving components of an ecosystem, interaction between	organs, organ systems, reactants and products in chemical	organs, organ systems, reactants and products in chemical
	organelles of a cell)	organelles of a cell)	equilibrium)	equilibrium)
	9-10.1.3 Constancy and Change: Explain how a system can	9-10.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system of
	be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., balance of	be dynamic yet may remain in equilibrium (e.g., balance of
	rock cycle, population)	rock cycle, population)	forces, Le Chatelier's Principle, acid base systems)	forces, Le Chatelier's Principle, acid base systems)
	ND.2 Science Inquiry: Students use the process of science	9-10.1.4 Form and Function: Describe the relationship	11-12.1.4 Form and Function: Explain the relationship	11-12.1.4 Form and Function: Explain the relationship
	inquiry.		1 = 1	between form and function (e.g., atoms and ions, enzymes,
		specialization, simple machines, and plate tectonics)	aerodynamics)	aerodynamics)
	9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science
	questions and concepts that guide scientific investigations	inquiry.	inquiry.	inquiry.
	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use
	Formulate a testable hypothesis for a simple investigation	questions and concepts that guide scientific investigations	data from scientific investigations to accept or reject a	data from scientific investigations to accept or reject a
			hypothesis	hypothesis
	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
	and conduct a guided investigation	Formulate a testable hypothesis for a simple investigation	Formulate and revise explanations based upon scientific	Formulate and revise explanations based upon scientific
			knowledge and experimental data	knowledge and experimental data
	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Desi
	Maintain clear and accurate records of scientific investigations	and conduct a guided investigation	and conduct an independent investigation	and conduct an independent investigation
	ND.4 Life Science: Students understand the basic concepts	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
	and principles of life science.	Maintain clear and accurate records of scientific investigations	Communicate and defend a scientific argument	Communicate and defend a scientific argument
	9-10.4.1 Structure and Function: Relate cell function to cell	ND.4 Life Science: Students understand the basic concepts	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students understand
	structure (i.e., cell wall, cell membrane, nucleus,	and principles of life science.	the history and nature of science.	the history and nature of science.
	9-10.4.2 Structure and Function: Relate the functions of cells	9-10.4.1 Structure and Function: Relate cell function to cell	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
	in multi-cellular organisms to their cell type (e.g., nerve cells,	structure (i.e., cell wall, cell membrane, nucleus,	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.
	blood cells, guard cells)	mitochondria, chloroplast)	must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
			consistent with experimental and observational evidence	consistent with experimental and observational evidence
			about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems bei
			studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open to
			question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
	9-10.4.3 Structure and Function: Explain the relationship	9-10.4.2 Structure and Function: Relate the functions of cells	ND.CC.11-12.RST Reading Standards for Information Literacy	ND.CC.11-12.RST Reading Standards for Information Litera
	between protein structure and function	in multi-cellular organisms to their cell type (e.g., nerve cells,	in Science and Technical Subjects	in Science and Technical Subjects
		blood cells, guard cells)	,	,
	ND.CC.9-10.RST Reading Standards for Information Literacy	9-10.4.3 Structure and Function: Explain the relationship	- Key Ideas and Details	- Key Ideas and Details
	in Science and Technical Subjects	between protein structure and function		
	- Key Ideas and Details	ND.CC.9-10.RST Reading Standards for Information Literacy	11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
		in Science and Technical Subjects	analysis of science and technical texts, attending to important	
		·	distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
			inconsistencies in the account.	inconsistencies in the account.
	9-10.RST.1 Cite specific textual evidence to support analysis	- Key Ideas and Details	11-12.RST.5 Analyze how the text structures information or	11-12.RST.5 Analyze how the text structures information
	of science and technical texts, attending to the precise details	,	1	ideas into categories or hierarchies, demonstrating
				understanding of the information or ideas.
	I i	9-10.RST.1 Cite specific textual evidence to support analysis	T =	=
				(e.g., texts, experiments, simulations) into a coherent
				understanding of a process, phenomenon, or concept,
	(S.g., 13.3c) medali, research force, energy).	and the second of descriptions.		resolving conflicting information when possible.
	9-10.RST.10 By the end of grade 10, read and comprehend	9-10.RST.5 Analyze the structure of the relationships among		11-12.RST.10 By the end of grade 12, read and comprehe
		_ · · · · · · · · · · · · · · · · · · ·		science/technical texts in the grades 11-12 text complexity
				band independently and proficiently.
	-		= -	ND.CC.11-12.WHST Writing Standards for Literacy in
	mistory/pocial studies, Science, and Technical Subjects	1 , ,	mistory/social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects
	0.40 MUST 4. Wester consenses forward and it is 10.		14 42 MUICT 4 Maile annual female and a 10 10	14 42 WUST 4 Wester consenses forward a Print P
	_ · · · · · · · · · · · · · · · · · · ·		-	11-12.WHST.1 Write arguments focused on discipline-
	content.	History/Social Studies, Science, and Technical Subjects	specific content.	specific content.
		concepts and processes of science. 9-10.1.1 Models: Explain how models can be used to illustrate scientific principles 9-10.1.2 Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell) 9-10.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population) ND.2 Science Inquiry: Students use the process of science inquiry. 9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations 9-10.2.4 Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation 9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation 9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts and principles of life science. 9-10.4.1 Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, 9-10.4.2 Structure and Function: Relate the functions of cells in multi-cellular organisms to their cell type (e.g., nerve cells, blood cells, guard cells) 9-10.4.3 Structure and Function: Explain the relationship between protein structure and function ND.CC.9-10.RST Reading Standards for Information Literacy in Science and Technical Subjects - Key Ideas and Details 9-10.RST.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. 9-10.RST.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. 9-10.RST.1 Details the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity	ND. 1 Unifying Concepts: Students understand the unifying concepts and processes of Science. 9-10.1.1 Models: Explain how models can be used to illustrate scientific principles: 9-10.1.2 Systems: Describe the interaction of components within a system (e.g., interactions between information in the process of a cell) 9-10.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population) ND. 2 Science inquiry. Students use the process of science inquiry. 9-10.2.3 Abilities Necessary To Do Scientific inquiry: 9-10.2.4 Abilities Necessary To Do Scientific inquiry: 9-10.2.4 Abilities Necessary To Do Scientific inquiry: 9-10.2.7 Abilities Necessary To Do Scientific inquiry: 9-10.2.7 Abilities Necessary To Do Scientific inquiry: Maintain clear and accurate records of scientific investigations ND.4 Ufe Science: Students understand the basic concepts and principles of life science. 9-10.4.1 Structure and Function: Relate cell function to cell structure (e.g., cell wall, cell membrane, nucleus, 9-10.4.3 Structure and function: Relate cell function to cell structure (e.g., cell wall, cell membrane in cells in multi-cellular organisms to their cell type (e.g., nerve cells, blood cells, guard cells) ND.C.9-10.RST Reading Standards for Information Literacy in Science and technical lexts, attending to the precise details of explanations or descriptions. 9-10.RST.1 Cite specific textual evidence to support analysis of science and technical lexts, attending to the precise details of explanations or descriptions. 9-10.RST.1 Write arguments focused on discipline-specific line, including relationships among concepts in a text, including relationships among concepts in a	10.1 - Unblying Concepts Students understand the unblying concepts and processes of extreme. 3-10.1.1 - Models: Epidein from models can be used to illustrate accentific principles 3-10.1.2 - Systems. Describe the interaction of components continuous components can be component to an exception, interaction between organiles of a city. 3-10.1.2 - Systems describe the interaction of components can be continuous compone

	illustrate scientific principles il	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
	9-10.1.1 Models: Explain how models can be used to	9-10.1.1 Models: Explain how models can be used to	11-12.1.1 Models: Explain how scientists create and use	11-12.1.1 Models: Explain how scientists create and use
	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
ar Respiration -	ND ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying
		task, purpose, and audience.	task, purpose, and audience.	task, purpose, and audience.
		the development, organization, and style are appropriate to	the development, organization, and style are appropriate to	the development, organization, and style are appropriate to
	9	9-10.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which
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		they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.	they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.
		precise enough descriptions of the step-by-step procedures		precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others
			science and technical subjects, students must be able to write	
		their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In
		students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into
		and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,
		to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments
		in these grades. The Standards require that students be able	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able
	task, purpose, and audience.	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow
		separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and
		9-10.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a
	l :	the topic).	the topic).	the topic).
	technical subjects. Students' narrative skills continue to grow	presented (e.g., articulating implications or the significance of	provided (e.g., articulating implications or the significance of	provided (e.g., articulating implications or the significance of
	separate requirement for history, social studies, science, and	that follows from and supports the information or explanation	that follows from and supports the information or explanation	that follows from and supports the information or explanation
	9-10.WHST.3 Narrative writing is not applicable as a	9-10.WHST.2.f Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section
			and context as well as to the expertise of likely readers.	and context as well as to the expertise of likely readers.
	the topic).	concepts.	knowledgeable stance in a style that responds to the discipline	knowledgeable stance in a style that responds to the discipline
	presented (e.g., articulating implications or the significance of	cohesion, and clarify the relationships among ideas and	analogy to manage the complexity of the topic; convey a	analogy to manage the complexity of the topic; convey a
	that follows from and supports the information or explanation s	structures to link the major sections of the text, create	vocabulary and techniques such as metaphor, simile, and	vocabulary and techniques such as metaphor, simile, and
	9-10.WHST.2.f Provide a concluding statement or section 9	9-10.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.d Use precise language, domain-specific	11-12.WHST.2.d Use precise language, domain-specific
	concepts.	appropriate to the audience's knowledge of the topic.	and concepts.	and concepts.
	cohesion, and clarify the relationships among ideas and	details, quotations, or other information and examples	cohesion, and clarify the relationships among complex ideas	cohesion, and clarify the relationships among complex ideas
		relevant, and sufficient facts, extended definitions, concrete	structures to link the major sections of the text, create	structures to link the major sections of the text, create
		9-10.WHST.2.b Develop the topic with well-chosen,	11-12.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.c Use varied transitions and sentence
		comprehension.	topic.	topic.
	1	figures, tables), and multimedia when useful to aiding	examples appropriate to the audience's knowledge of the	examples appropriate to the audience's knowledge of the
		distinctions; include formatting (e.g., headings), graphics (e.g.,	concrete details, quotations, or other information and	concrete details, quotations, or other information and
		• •	the most significant and relevant facts, extended definitions,	the most significant and relevant facts, extended definitions,
		9-10.WHST.2.a Introduce a topic and organize ideas,	11-12.WHST.2.b Develop the topic thoroughly by selecting	11-12.WHST.2.b Develop the topic thoroughly by selecting
	9 10 W/HST 2 h - Douglan the tenic with well charry	9.10 WHST 2.a Introduce a tonic and exception idea-	11.12 W/UST 2 h - Davalan the tonis thereworkly by sala-time	11-12 W/UST 2 h - Dayalan the tanks the roughly by s-1ti
	comprehension.		asses,, and mainined when aseral to diding comprehension.	asses,, and maramedia when aseral to along comprehension.
	comprehension.		tables), and multimedia when useful to aiding comprehension.	
	figures, tables), and multimedia when useful to aiding	- F	include formatting (e.g., headings), graphics (e.g., figures,	include formatting (e.g., headings), graphics (e.g., figures,
		experiments, or technical processes.	builds on that which precedes it to create a unified whole;	builds on that which precedes it to create a unified whole;
	concepts, and information to make important connections and t		ideas, concepts, and information so that each new element	ideas, concepts, and information so that each new element
	9-10.WHST.2.a Introduce a topic and organize ideas, 9	9-10.WHST.2 Write informative/explanatory texts, including	11-12.WHST.2.a Introduce a topic and organize complex	11-12.WHST.2.a Introduce a topic and organize complex
	experiments, or technical processes.		procedures/ experiments, or technical processes.	procedures/ experiments, or technical processes.
		that follows from or supports the argument presented.	including the narration of historical events, scientific	including the narration of historical events, scientific
		9-10.WHST.1.e Provide a concluding statement or section	11-12.WHST.2 Write informative/explanatory texts,	11-12.WHST.2 Write informative/explanatory texts,
		and evidence, and between claim(s) and counterclaims.	44 42 MUST 2 - Maite information / and least a - 1	14 12 MUST 2 - Matha information (annihilation)
		relationships between claim(s) and reasons, between reasons		
	1 '' - ' 1		and control of supports the argument presented.	and to the first of supports the argument presented.
	_	major sections of the text, create cohesion, and clarify the	that follows from or supports the argument presented.	that follows from or supports the argument presented.
		9-10.WHST.1.c Use words, phrases, and clauses to link the	11-12.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.e Provide a concluding statement or section
		the audience's knowledge level and concerns.	and counterclaims.	and counterclaims.
		a discipline-appropriate form and in a manner that anticipates		reasons, between reasons and evidence, and between claim(s)
		strengths and limitations of both claim(s) and counterclaims in	cohesion, and clarify the relationships between claim(s) and	cohesion, and clarify the relationships between claim(s) and
		supplying data and evidence for each while pointing out the	varied syntax to link the major sections of the text, create	varied syntax to link the major sections of the text, create
	9-10.WHST.1.c Use words, phrases, and clauses to link the	9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	11-12.WHST.1.c Use words, phrases, and clauses as well as	11-12.WHST.1.c Use words, phrases, and clauses as well as
			level, concerns, values, and possible biases.	level, concerns, values, and possible biases.
	the audience's knowledge level and concerns.		appropriate form that anticipates the audience's knowledge	appropriate form that anticipates the audience's knowledge
	a discipline-appropriate form and in a manner that anticipates c	claim(s), counterclaims, reasons, and evidence.	limitations of both claim(s) and counterclaims in a discipline-	limitations of both claim(s) and counterclaims in a discipline-
		organization that establishes clear relationships among the	evidence for each while pointing out the strengths and	evidence for each while pointing out the strengths and
		claim(s) from alternate or opposing claims, and create an	and thoroughly, supplying the most relevant data and	and thoroughly, supplying the most relevant data and
		9-10.WHST.1.a Introduce precise claim(s), distinguish the	11-12.WHST.1.b Develop claim(s) and counterclaims fairly	11-12.WHST.1.b Develop claim(s) and counterclaims fairly
	0.40.40.40.5		counterclaims, reasons, and evidence.	counterclaims, reasons, and evidence.
	ciaiii(s), counterciaiiis, reasons, and evidence.			
	claim(s), counterclaims, reasons, and evidence.		organization that logically sequences the claim(s),	organization that logically sequences the claim(s),
	organization that establishes clear relationships among the		claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an
	claim(s) from alternate or opposing claims, and create an c	content.	establish the significance of the claim(s), distinguish the	establish the significance of the claim(s), distinguish the
		9-10.WHST.1 Write arguments focused on discipline-specific	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),

9-10.1.2 Systems: Describe the interaction of components	9-10.1.2 Systems: Describe the interaction of components		11-12.1.2 Systems: Identify the structure, organization, and
within a system (e.g., interactions between living and	within a system (e.g., interactions between living and	dynamics of components within a system (e.g., cells, tissues,	dynamics of components within a system (e.g., cells, tissues,
nonliving components of an ecosystem, interaction between	nonliving components of an ecosystem, interaction between	organs, organ systems, reactants and products in chemical	organs, organ systems, reactants and products in chemical
organelles of a cell)	organelles of a cell)	equilibrium)	equilibrium)
9-10.1.3 Constancy and Change: Explain how a system can	9-10.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can
be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., balance of	be dynamic yet may remain in equilibrium (e.g., balance of
rock cycle, population) ND.2 Science Inquiry: Students use the process of science	rock cycle, population) 9-10.1.4 Form and Function: Describe the relationship	forces, Le Chatelier's Principle, acid base systems) 11-12.1.4 Form and Function: Explain the relationship	forces, Le Chatelier's Principle, acid base systems) 11-12.1.4 Form and Function: Explain the relationship
inquiry.	between form and function (e.g., solids, liquids, gases, cell	between form and function (e.g., atoms and ions, enzymes,	between form and function (e.g., atoms and ions, enzymes,
inquiry.	specialization, simple machines, and plate tectonics)	aerodynamics)	aerodynamics)
9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science
questions and concepts that guide scientific investigations	inquiry.	inquiry.	inquiry.
9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use
Formulate a testable hypothesis for a simple investigation	questions and concepts that guide scientific investigations	data from scientific investigations to accept or reject a	data from scientific investigations to accept or reject a
Tormalate a testable hypothesis for a simple investigation	questions and concepts that galact scientific investigations	hypothesis	hypothesis
9-10.2.5 Abilities Necessary To Do Scientific Inquiry: Identify	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
the independent and dependent variables, the control, and	Formulate a testable hypothesis for a simple investigation	Formulate and revise explanations based upon scientific	Formulate and revise explanations based upon scientific
the constants when conducting an experiment		knowledge and experimental data	knowledge and experimental data
9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.5 Abilities Necessary To Do Scientific Inquiry: Identify	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design
and conduct a guided investigation	the independent and dependent variables, the control, and	and conduct an independent investigation	and conduct an independent investigation
	the constants when conducting an experiment		
9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
Maintain clear and accurate records of scientific investigations	and conduct a guided investigation	Communicate and defend a scientific argument	Communicate and defend a scientific argument
ND.4 Life Science: Students understand the basic concepts	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students understand
and principles of life science.	Maintain clear and accurate records of scientific investigations	the history and nature of science.	the history and nature of science.
9-10.4.3 Structure and Function: Explain the relationship	ND.4 Life Science: Students understand the basic concepts	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
between protein structure and function	and principles of life science.	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.g.,
		must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
		consistent with experimental and observational evidence	consistent with experimental and observational evidence
		about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems being
		studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open to
		question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
9-10.4.12 Matter and Energy in Living Systems: Compare	9-10.4.3 Structure and Function: Explain the relationship	ND.CC.11-12.RST Reading Standards for Information Literacy	ND.CC.11-12.RST Reading Standards for Information Literacy
and contrast photosynthesis and cellular respiration	between protein structure and function	in Science and Technical Subjects	in Science and Technical Subjects
	9-10.4.12 Matter and Energy in Living Systems: Compare	- Key Ideas and Details	- Key Ideas and Details
in Science and Technical Subjects	and contrast photosynthesis and cellular respiration	- Key lueas and Details	- Key lueas and Details
- Key Ideas and Details	ND.CC.9-10.RST Reading Standards for Information Literacy	11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
ney lacas and secons	in Science and Technical Subjects	analysis of science and technical texts, attending to important	analysis of science and technical texts, attending to important
	an sacrace and reconnect subjects	distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
		inconsistencies in the account.	inconsistencies in the account.
9-10.RST.1 Cite specific textual evidence to support analysis	- Key Ideas and Details	11-12.RST.5 Analyze how the text structures information or	11-12.RST.5 Analyze how the text structures information or
of science and technical texts, attending to the precise details		ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
of explanations or descriptions.		understanding of the information or ideas.	understanding of the information or ideas.
9-10.RST.5 Analyze the structure of the relationships among	9-10.RST.1 Cite specific textual evidence to support analysis	11-12.RST.9 Synthesize information from a range of sources	11-12.RST.9 Synthesize information from a range of sources
concepts in a text, including relationships among key terms	of science and technical texts, attending to the precise details	(e.g., texts, experiments, simulations) into a coherent	(e.g., texts, experiments, simulations) into a coherent
(e.g., force, friction, reaction force, energy).	of explanations or descriptions.	understanding of a process, phenomenon, or concept,	understanding of a process, phenomenon, or concept,
		resolving conflicting information when possible.	resolving conflicting information when possible.
9-10.RST.10 By the end of grade 10, read and comprehend	9-10.RST.5 Analyze the structure of the relationships among	11-12.RST.10 By the end of grade 12, read and comprehend	11-12.RST.10 By the end of grade 12, read and comprehend
science/technical texts in the grades 9-10 text complexity	concepts in a text, including relationships among key terms	science/technical texts in the grades 11-12 text complexity	science/technical texts in the grades 11-12 text complexity
band independently and proficiently.	(e.g., force, friction, reaction force, energy).	band independently and proficiently.	band independently and proficiently.
ND.CC.9-10.WHST Writing Standards for Literacy in	9-10.RST.10 By the end of grade 10, read and comprehend	ND.CC.11-12.WHST Writing Standards for Literacy in	ND.CC.11-12.WHST Writing Standards for Literacy in
History/Social Studies, Science, and Technical Subjects	science/technical texts in the grades 9-10 text complexity	History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects
	band independently and proficiently.		
9-10.WHST.1 Write arguments focused on discipline-specific	ND.CC.9-10.WHST Writing Standards for Literacy in	11-12.WHST.1 Write arguments focused on discipline-	11-12.WHST.1 Write arguments focused on discipline-
content.	History/Social Studies, Science, and Technical Subjects	specific content.	specific content.
9-10.WHST.1.a Introduce precise claim(s), distinguish the	9-10.WHST.1 Write arguments focused on discipline-specific		11-12.WHST.1.a Introduce precise, knowledgeable claim(s),
claim(s) from alternate or opposing claims, and create an	content.	establish the significance of the claim(s), distinguish the	establish the significance of the claim(s), distinguish the
organization that establishes clear relationships among the		claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an
claim(s), counterclaims, reasons, and evidence.		organization that logically sequences the claim(s),	organization that logically sequences the claim(s),
		counterclaims, reasons, and evidence.	counterclaims, reasons, and evidence.
9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	9-10.WHST.1.a Introduce precise claim(s), distinguish the	11-12.WHST.1.b Develop claim(s) and counterclaims fairly	11-12.WHST.1.b Develop claim(s) and counterclaims fairly
supplying data and evidence for each while pointing out the	claim(s) from alternate or opposing claims, and create an	and thoroughly, supplying the most relevant data and	and thoroughly, supplying the most relevant data and
strengths and limitations of both claim(s) and counterclaims in	· · · · · · · · · · · · · · · · · ·	evidence for each while pointing out the strengths and	evidence for each while pointing out the strengths and
a discipline-appropriate form and in a manner that anticipates	ciaim(s), counterclaims, reasons, and evidence.	limitations of both claim(s) and counterclaims in a discipline-	limitations of both claim(s) and counterclaims in a discipline-
the audience's knowledge level and concerns.		appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.	appropriate form that anticipates the audience's knowledge
			level, concerns, values, and possible biases.
		lievei, concerns, values, and possible blases.	lievel, concerns, values, and possible blases.

		9-10.WHST.1.c Use words, phrases, and clauses to link the	9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	11-12.WHST.1.c Use words, phrases, and clauses as well as	11-12.WHST.1.c Use words, phrases, and clauses as well as
		major sections of the text, create cohesion, and clarify the	supplying data and evidence for each while pointing out the	varied syntax to link the major sections of the text, create	varied syntax to link the major sections of the text, create
		relationships between claim(s) and reasons, between reasons	strengths and limitations of both claim(s) and counterclaims in	cohesion, and clarify the relationships between claim(s) and	cohesion, and clarify the relationships between claim(s) and
		and evidence, and between claim(s) and counterclaims.	a discipline-appropriate form and in a manner that anticipates	reasons, between reasons and evidence, and between claim(s)	reasons, between reasons and evidence, and between claim(s)
			the audience's knowledge level and concerns.	and counterclaims.	and counterclaims.
		-	9-10.WHST.1.c Use words, phrases, and clauses to link the	11-12.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.e Provide a concluding statement or section
		that follows from or supports the argument presented.	major sections of the text, create cohesion, and clarify the	that follows from or supports the argument presented.	that follows from or supports the argument presented.
			relationships between claim(s) and reasons, between reasons		
			and evidence, and between claim(s) and counterclaims.		
		9-10.WHST.2 Write informative/explanatory texts, including		11-12.WHST.2 Write informative/explanatory texts,	11-12.WHST.2 Write informative/explanatory texts,
			that follows from or supports the argument presented.	including the narration of historical events, scientific	including the narration of historical events, scientific
		experiments, or technical processes.	L	procedures/ experiments, or technical processes.	procedures/ experiments, or technical processes.
		1	9-10.WHST.2 Write informative/explanatory texts, including	·	11-12.WHST.2.a Introduce a topic and organize complex
		concepts, and information to make important connections and	1	ideas, concepts, and information so that each new element	ideas, concepts, and information so that each new element
		distinctions; include formatting (e.g., headings), graphics (e.g.,	experiments, or technical processes.	builds on that which precedes it to create a unified whole;	builds on that which precedes it to create a unified whole;
		figures, tables), and multimedia when useful to aiding comprehension.		include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.	include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
		comprehension.		tables), and multimedia when diserui to alding comprehension.	tables), and multimedia when userul to alding comprehension.
		9-10.WHST.2.b Develop the topic with well-chosen,	9-10.WHST.2.a Introduce a topic and organize ideas,	11-12.WHST.2.b Develop the topic thoroughly by selecting	11-12.WHST.2.b Develop the topic thoroughly by selecting
		1	concepts, and information to make important connections and		the most significant and relevant facts, extended definitions,
			distinctions; include formatting (e.g., headings), graphics (e.g.,	concrete details, quotations, or other information and	concrete details, quotations, or other information and
		appropriate to the audience's knowledge of the topic.	figures, tables), and multimedia when useful to aiding	examples appropriate to the audience's knowledge of the	examples appropriate to the audience's knowledge of the
			comprehension.	topic.	topic.
			9-10.WHST.2.b Develop the topic with well-chosen,	11-12.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.c Use varied transitions and sentence
		structures to link the major sections of the text, create	relevant, and sufficient facts, extended definitions, concrete	structures to link the major sections of the text, create	structures to link the major sections of the text, create
		cohesion, and clarify the relationships among ideas and	details, quotations, or other information and examples	cohesion, and clarify the relationships among complex ideas	cohesion, and clarify the relationships among complex ideas
		concepts.	appropriate to the audience's knowledge of the topic.	and concepts.	and concepts.
		9-10.WHST.2.f Provide a concluding statement or section	9-10.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.d Use precise language, domain-specific	11-12.WHST.2.d Use precise language, domain-specific
		that follows from and supports the information or explanation	structures to link the major sections of the text, create	vocabulary and techniques such as metaphor, simile, and	vocabulary and techniques such as metaphor, simile, and
		presented (e.g., articulating implications or the significance of	cohesion, and clarify the relationships among ideas and	analogy to manage the complexity of the topic; convey a	analogy to manage the complexity of the topic; convey a
		the topic).	concepts.	knowledgeable stance in a style that responds to the discipline	knowledgeable stance in a style that responds to the discipline
				and context as well as to the expertise of likely readers.	and context as well as to the expertise of likely readers.
		0.40 MUST 2. November 1. and and included	9-10.WHST.2.f Provide a concluding statement or section	44 42 MUICT 2 - Daniida - anadridina etatamant - anadri	44 42 MUST 2 - Descride
		, ··	that follows from and supports the information or explanation	11-12.WHST.2.e Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section
			1		that follows from and supports the information or explanation
		in these grades. The Standards require that students be able	presented (e.g., articulating implications or the significance of the topic).	the topic).	provided (e.g., articulating implications or the significance of the topic).
		1 -	9-10.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a
		-	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and
			technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow
		, , , , , , , , , , , , , , , , , , , ,	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able
			to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments
			and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,
			students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into
			their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In
			science and technical subjects, students must be able to write	science and technical subjects, students must be able to write	science and technical subjects, students must be able to write
			precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures
			they use in their investigations or technical work that others	they use in their investigations or technical work that others	they use in their investigations or technical work that others
			can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.
			9-10.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which
			the development, organization, and style are appropriate to task, purpose, and audience.	the development, organization, and style are appropriate to task, purpose, and audience.	the development, organization, and style are appropriate to task, purpose, and audience.
Diffusion -	ND	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying
		1	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
		9-10.1.1 Models: Explain how models can be used to	9-10.1.1 Models: Explain how models can be used to	11-12.1.1 Models: Explain how scientists create and use	11-12.1.1 Models: Explain how scientists create and use
		illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
		9-10.1.3 Constancy and Change: Explain how a system can	9-10.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can
		be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., balance of	be dynamic yet may remain in equilibrium (e.g., balance of
		rock cycle, population)	rock cycle, population)	forces, Le Chatelier's Principle, acid base systems)	forces, Le Chatelier's Principle, acid base systems)
		9-10.1.6 Evolution and Equilibrium: Identify principles	9-10.1.6 Evolution and Equilibrium: Identify principles	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science
			governing evolution and equilibrium within systems (e.g.,	inquiry.	inquiry.
			cause and effect, positive and negative feedback)		
		ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use
		inquiry.	inquiry.	data from scientific investigations to accept or reject a	data from scientific investigations to accept or reject a
				hypothesis	hypothesis
			9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify		11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
		questions and concepts that guide scientific investigations	questions and concepts that guide scientific investigations	Formulate and revise explanations based upon scientific knowledge and experimental data	Formulate and revise explanations based upon scientific
I	I	I	I	Ivinomicage and experimental data	knowledge and experimental data

0.40.2.4. Abilities Necessary To De Calashifia leaving	lo 40 2 4 Abilities Nessessi To De Calcabilia Islandia	las and an analysis of the second sec	44 42 2 7 Abiliain November To De Crimatific Institute Design
	1	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	
Formulate a testable hypothesis for a simple investigation	Formulate a testable hypothesis for a simple investigation	and conduct an independent investigation	and conduct an independent investigation
9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
and conduct a guided investigation	and conduct a guided investigation	Communicate and defend a scientific argument	Communicate and defend a scientific argument
9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students understand
viaintain clear and accurate records of scientific investigations	Maintain clear and accurate records of scientific investigations	the history and nature of science.	the history and nature of science.
ND.4 Life Science: Students understand the basic concepts	ND.4 Life Science: Students understand the basic concepts	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
and principles of life science.	and principles of life science.	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.g.,
		must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
		consistent with experimental and observational evidence	consistent with experimental and observational evidence
		about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems being
		studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)
		question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
9-10.4.1 Structure and Function: Relate cell function to cell	9-10.4.1 Structure and Function: Relate cell function to cell	ND.CC.11-12.RST Reading Standards for Information Literacy	ND.CC.11-12.RST Reading Standards for Information Literacy
structure (i.e., cell wall, cell membrane, nucleus,	structure (i.e., cell wall, cell membrane, nucleus,	in Science and Technical Subjects	in Science and Technical Subjects
mitochondria, chloroplast)	mitochondria, chloroplast)	Kanadana and Dataila	Kan Idaaa and Dataila
ND.CC.9-10.RST Reading Standards for Information Literacy	ND.CC.9-10.RST Reading Standards for Information Literacy	- Key Ideas and Details	- Key Ideas and Details
n Science and Technical Subjects	in Science and Technical Subjects	11 12 BCT 1 Cite specific textual evidence to support	11 12 DCT 1 Cita specific textual evidence to support
Key Ideas and Details	- Key Ideas and Details	11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
			analysis of science and technical texts, attending to important
		distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
0.40 BCT 4 Cita and Ci	0.10 DCT 1 City	inconsistencies in the account.	inconsistencies in the account.
	9-10.RST.1 Cite specific textual evidence to support analysis	11-12.RST.9 Synthesize information from a range of sources	11-12.RST.9 Synthesize information from a range of sources
of science and technical texts, attending to the precise details	of science and technical texts, attending to the precise details of explanations or descriptions.	(e.g., texts, experiments, simulations) into a coherent	(e.g., texts, experiments, simulations) into a coherent
of explanations or descriptions.	or explanations or descriptions.	understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	understanding of a process, phenomenon, or concept,
UD CC 0.10 WHST - Writing Standards for Literacy in	ND CC 0.10 WHST - Writing Standards for Literacy in	ND.CC.11-12.WHST Writing Standards for Literacy in	resolving conflicting information when possible.
ND.CC.9-10.WHST Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects	ND.CC.9-10.WHST Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects	ND.CC.11-12.WHST Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects
	9-10.WHST.1 Write arguments focused on discipline-specific	•	11-12.WHST.1 Write arguments focused on discipline-
content.	content.	specific content.	specific content.
9-10.WHST.1.a Introduce precise claim(s), distinguish the	9-10.WHST.1.a Introduce precise claim(s), distinguish the	•	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),
claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an	establish the significance of the claim(s), distinguish the	establish the significance of the claim(s), distinguish the
organization that establishes clear relationships among the	organization that establishes clear relationships among the	claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an
claim(s), counterclaims, reasons, and evidence.	claim(s), counterclaims, reasons, and evidence.	organization that logically sequences the claim(s),	organization that logically sequences the claim(s),
(-),		counterclaims, reasons, and evidence.	counterclaims, reasons, and evidence.
9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	11-12.WHST.1.b Develop claim(s) and counterclaims fairly	11-12.WHST.1.b Develop claim(s) and counterclaims fairly
supplying data and evidence for each while pointing out the	supplying data and evidence for each while pointing out the	and thoroughly, supplying the most relevant data and	and thoroughly, supplying the most relevant data and
strengths and limitations of both claim(s) and counterclaims in	strengths and limitations of both claim(s) and counterclaims in	evidence for each while pointing out the strengths and	evidence for each while pointing out the strengths and
a discipline-appropriate form and in a manner that anticipates	a discipline-appropriate form and in a manner that anticipates		limitations of both claim(s) and counterclaims in a discipline-
the audience's knowledge level and concerns.	the audience's knowledge level and concerns.	appropriate form that anticipates the audience's knowledge	appropriate form that anticipates the audience's knowledge
	_	level, concerns, values, and possible biases.	level, concerns, values, and possible biases.
9-10.WHST.1.c Use words, phrases, and clauses to link the	9-10.WHST.1.c Use words, phrases, and clauses to link the	11-12.WHST.1.c Use words, phrases, and clauses as well as	11-12.WHST.1.c Use words, phrases, and clauses as well as
major sections of the text, create cohesion, and clarify the	major sections of the text, create cohesion, and clarify the	varied syntax to link the major sections of the text, create	varied syntax to link the major sections of the text, create
elationships between claim(s) and reasons, between reasons	relationships between claim(s) and reasons, between reasons	cohesion, and clarify the relationships between claim(s) and	cohesion, and clarify the relationships between claim(s) and
and evidence, and between claim(s) and counterclaims.	and evidence, and between claim(s) and counterclaims.	reasons, between reasons and evidence, and between claim(s)	reasons, between reasons and evidence, and between claim(s)
		and counterclaims.	and counterclaims.
9-10.WHST.1.e Provide a concluding statement or section	9-10.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.e Provide a concluding statement or section
that follows from or supports the argument presented.	that follows from or supports the argument presented.	that follows from or supports the argument presented.	that follows from or supports the argument presented.
9-10.WHST.2 Write informative/explanatory texts, including	9-10.WHST.2 Write informative/explanatory texts, including	11-12.WHST.2 Write informative/explanatory texts,	11-12.WHST.2 Write informative/explanatory texts,
the narration of historical events, scientific procedures/	the narration of historical events, scientific procedures/	including the narration of historical events, scientific	including the narration of historical events, scientific
experiments, or technical processes.	experiments, or technical processes.	procedures/ experiments, or technical processes.	procedures/ experiments, or technical processes.
9-10.WHST.2.a Introduce a topic and organize ideas,	9-10.WHST.2.a Introduce a topic and organize ideas,	11-12.WHST.2.a Introduce a topic and organize complex	11-12.WHST.2.a Introduce a topic and organize complex
concepts, and information to make important connections and	concepts, and information to make important connections and	ideas, concepts, and information so that each new element	ideas, concepts, and information so that each new element
distinctions; include formatting (e.g., headings), graphics (e.g.,	distinctions; include formatting (e.g., headings), graphics (e.g.,	builds on that which precedes it to create a unified whole;	builds on that which precedes it to create a unified whole;
figures, tables), and multimedia when useful to aiding	figures, tables), and multimedia when useful to aiding	include formatting (e.g., headings), graphics (e.g., figures,	include formatting (e.g., headings), graphics (e.g., figures,
comprehension.	comprehension.	tables), and multimedia when useful to aiding comprehension.	tables), and multimedia when useful to aiding comprehension.
0.40 MINET 21 D. 1 . 1 . 1 . 1 . 1 . 1	9-10.WHST.2.b Develop the topic with well-chosen,	11-12.WHST.2.b Develop the topic thoroughly by selecting	11-12.WHST.2.b Develop the topic thoroughly by selecting
9-10.WHS1.2.b Develop the topic with Well-chosen,	relevant, and sufficient facts, extended definitions, concrete	the most significant and relevant facts, extended definitions,	the most significant and relevant facts, extended definitions,
		concrete details, quotations, or other information and	concrete details, quotations, or other information and
relevant, and sufficient facts, extended definitions, concrete	details, quotations, or other information and examples		
relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples	details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.	examples appropriate to the audience's knowledge of the	examples appropriate to the audience's knowledge of the
relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.		examples appropriate to the audience's knowledge of the topic. 11-12.WHST.2.c Use varied transitions and sentence	examples appropriate to the audience's knowledge of the topic. 11-12.WHST.2.c Use varied transitions and sentence
relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c Use varied transitions and sentence	appropriate to the audience's knowledge of the topic.	topic.	topic.
relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create	appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c Use varied transitions and sentence	topic. 11-12.WHST.2.c Use varied transitions and sentence	topic. 11-12.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create
9-10.WHST.2.b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.	appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create	topic. 11-12.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas	topic. 11-12.WHST.2.c Use varied transitions and sentence

			9-10.WHST.2.f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). 9-10.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.	11-12.WHST.2.d Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers. 11-12.WHST.2.e Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).	11-12.WHST.2.d Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers. 11-12.WHST.2.e Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).
		9-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to	11-12.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. 11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Filtration -	ND	ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 9-10.1.1 Models: Explain how models can be used to illustrate scientific principles 9-10.1.2 Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell) 9-10.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population) ND.2 Science Inquiry: Students use the process of science inquiry. 9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations 9-10.2.4 Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation	ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 9-10.1.1 Models: Explain how models can be used to illustrate scientific principles 9-10.1.2 Systems: Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell) 9-10.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population) 9-10.1.4 Form and Function: Describe the relationship between form and function (e.g., solids, liquids, gases, cell specialization, simple machines, and plate tectonics) ND.2 Science Inquiry: Students use the process of science inquiry. 9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations	task, purpose, and audience. ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 11-12.1.1 Models: Explain how scientists create and use Models to address scientific knowledge 11-12.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems) ND.2 Science Inquiry: Students use the process of science inquiry. 11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data 11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation	Lask, purpose, and autoence. ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 11-12.1.1 Models: Explain how scientists create and use Models to address scientific knowledge 11-12.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems) ND.2 Science Inquiry: Students use the process of science inquiry. 11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry: Formulate and revise explanations based upon scientific knowledge and experimental data 11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation
		and conduct a guided investigation 9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts and principles of life science.	Formulate a testable hypothesis for a simple investigation 9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation 9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	Communicate and defend a scientific argument ND.8 History and Nature of Science: Students understand the history and nature of science. 11-12.8.1 Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence)	11.12.2.8 Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument ND.8 History and Nature of Science: Students understand the history and nature of science: 11.12.8.1 Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to question and reexamination, respect rules of evidence) ND.CC.11-12.RST Reading Standards for Information Literacy in Science and Technical Subjects

ND.CC.9-10.RST Reading Standards for Information Literacy	9-10.4.1 Structure and Function: Relate cell function to cell	- Key Ideas and Details	- Key Ideas and Details
in Science and Technical Subjects	structure (i.e., cell wall, cell membrane, nucleus,	- Key ideas and Details	- Key ideas and Details
In science and recrinical subjects			
- Key Ideas and Details	mitochondria, chloroplast) ND.CC.9-10.RST Reading Standards for Information Literacy	11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
- key ideas and Details	in Science and Technical Subjects	analysis of science and technical texts, attending to important	analysis of science and technical texts, attending to important
	in science and recrimical subjects	distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
		inconsistencies in the account.	inconsistencies in the account.
9-10.RST.1 Cite specific textual evidence to support analysis	- Key Ideas and Details	11-12.RST.5 Analyze how the text structures information or	11-12.RST.5 Analyze how the text structures information or
of science and technical texts, attending to the precise details	Key lucus and Details	ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
of explanations or descriptions.		understanding of the information or ideas.	understanding of the information or ideas.
9-10.RST.5 Analyze the structure of the relationships among	9-10 RST 1 - Cite specific textual evidence to support analysis	11-12.RST.9 Synthesize information from a range of sources	11-12.RST.9 Synthesize information from a range of sources
concepts in a text, including relationships among key terms	of science and technical texts, attending to the precise details	(e.g., texts, experiments, simulations) into a coherent	(e.g., texts, experiments, simulations) into a coherent
(e.g., force, friction, reaction force, energy).	of explanations or descriptions.	understanding of a process, phenomenon, or concept,	understanding of a process, phenomenon, or concept,
(,,,,,,,		resolving conflicting information when possible.	resolving conflicting information when possible.
9-10.RST.10 By the end of grade 10, read and comprehend	9-10.RST.5 Analyze the structure of the relationships among	11-12.RST.10 By the end of grade 12, read and comprehend	11-12.RST.10 By the end of grade 12, read and comprehend
science/technical texts in the grades 9-10 text complexity	concepts in a text, including relationships among key terms	science/technical texts in the grades 11-12 text complexity	science/technical texts in the grades 11-12 text complexity
band independently and proficiently.	(e.g., force, friction, reaction force, energy).	band independently and proficiently.	band independently and proficiently.
ND.CC.9-10.WHST Writing Standards for Literacy in	9-10.RST.10 By the end of grade 10, read and comprehend	ND.CC.11-12.WHST Writing Standards for Literacy in	ND.CC.11-12.WHST Writing Standards for Literacy in
History/Social Studies, Science, and Technical Subjects	science/technical texts in the grades 9-10 text complexity	History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects
	band independently and proficiently.		
9-10.WHST.1 Write arguments focused on discipline-specific	ND.CC.9-10.WHST Writing Standards for Literacy in	11-12.WHST.1 Write arguments focused on discipline-	11-12.WHST.1 Write arguments focused on discipline-
content.	History/Social Studies, Science, and Technical Subjects	specific content.	specific content.
9-10.WHST.1.a Introduce precise claim(s), distinguish the	9-10.WHST.1 Write arguments focused on discipline-specific	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),
claim(s) from alternate or opposing claims, and create an	content.	establish the significance of the claim(s), distinguish the	establish the significance of the claim(s), distinguish the
organization that establishes clear relationships among the		claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an
claim(s), counterclaims, reasons, and evidence.		organization that logically sequences the claim(s),	organization that logically sequences the claim(s),
		counterclaims, reasons, and evidence.	counterclaims, reasons, and evidence.
9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	9-10.WHST.1.a Introduce precise claim(s), distinguish the	11-12.WHST.1.b Develop claim(s) and counterclaims fairly	11-12.WHST.1.b Develop claim(s) and counterclaims fairly
supplying data and evidence for each while pointing out the	claim(s) from alternate or opposing claims, and create an	and thoroughly, supplying the most relevant data and	and thoroughly, supplying the most relevant data and
strengths and limitations of both claim(s) and counterclaims in	organization that establishes clear relationships among the	evidence for each while pointing out the strengths and	evidence for each while pointing out the strengths and
a discipline-appropriate form and in a manner that anticipates	claim(s), counterclaims, reasons, and evidence.	limitations of both claim(s) and counterclaims in a discipline-	limitations of both claim(s) and counterclaims in a discipline-
the audience's knowledge level and concerns.		appropriate form that anticipates the audience's knowledge	appropriate form that anticipates the audience's knowledge
		level, concerns, values, and possible biases.	level, concerns, values, and possible biases.
9-10.WHST.1.c Use words, phrases, and clauses to link the	9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	11-12.WHST.1.c Use words, phrases, and clauses as well as	11-12.WHST.1.c Use words, phrases, and clauses as well as
major sections of the text, create cohesion, and clarify the	supplying data and evidence for each while pointing out the	varied syntax to link the major sections of the text, create	varied syntax to link the major sections of the text, create
relationships between claim(s) and reasons, between reasons	strengths and limitations of both claim(s) and counterclaims in	cohesion, and clarify the relationships between claim(s) and	cohesion, and clarify the relationships between claim(s) and
and evidence, and between claim(s) and counterclaims.	a discipline-appropriate form and in a manner that anticipates	reasons, between reasons and evidence, and between claim(s)	reasons, between reasons and evidence, and between claim(s)
	the audience's knowledge level and concerns.	and counterclaims.	and counterclaims.
=	9-10.WHST.1.c Use words, phrases, and clauses to link the	11-12.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.e Provide a concluding statement or section
that follows from or supports the argument presented.	major sections of the text, create cohesion, and clarify the	that follows from or supports the argument presented.	that follows from or supports the argument presented.
	relationships between claim(s) and reasons, between reasons		
lo 40 milet 2 milet 2 milet 1	and evidence, and between claim(s) and counterclaims.		
9-10.WHST.2 Write informative/explanatory texts, including	=	11-12.WHST.2 Write informative/explanatory texts,	11-12.WHST.2 Write informative/explanatory texts,
the narration of historical events, scientific procedures/	that follows from or supports the argument presented.	including the narration of historical events, scientific	including the narration of historical events, scientific
experiments, or technical processes. 9-10.WHST.2.a Introduce a topic and organize ideas,	9-10.WHST.2 Write informative/explanatory texts, including	procedures/ experiments, or technical processes.	procedures/ experiments, or technical processes. 11-12.WHST.2.a Introduce a topic and organize complex
concepts, and information to make important connections and		ideas, concepts, and information so that each new element	ideas, concepts, and information so that each new element
distinctions; include formatting (e.g., headings), graphics (e.g.,	experiments, or technical processes.	builds on that which precedes it to create a unified whole;	builds on that which precedes it to create a unified whole;
figures, tables), and multimedia when useful to aiding	experiments, or technical processes.	include formatting (e.g., headings), graphics (e.g., figures,	include formatting (e.g., headings), graphics (e.g., figures,
comprehension.		tables), and multimedia when useful to aiding comprehension.	tables), and multimedia when useful to aiding comprehension.
Comprehension.		tables), and multimedia when useful to alding comprehension.	tables), and multimedia when userdi to alding comprehension.
9-10.WHST.2.b Develop the topic with well-chosen,	9-10.WHST.2.a Introduce a topic and organize ideas,	11-12.WHST.2.b Develop the topic thoroughly by selecting	11-12.WHST.2.b Develop the topic thoroughly by selecting
relevant, and sufficient facts, extended definitions, concrete		the most significant and relevant facts, extended definitions,	the most significant and relevant facts, extended definitions,
details, quotations, or other information and examples	distinctions; include formatting (e.g., headings), graphics (e.g.,	concrete details, quotations, or other information and	concrete details, quotations, or other information and
appropriate to the audience's knowledge of the topic.	figures, tables), and multimedia when useful to aiding	examples appropriate to the audience's knowledge of the	examples appropriate to the audience's knowledge of the
	comprehension.	topic.	topic.
9-10.WHST.2.c Use varied transitions and sentence	9-10.WHST.2.b Develop the topic with well-chosen,	11-12.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.c Use varied transitions and sentence
structures to link the major sections of the text, create	relevant, and sufficient facts, extended definitions, concrete	structures to link the major sections of the text, create	structures to link the major sections of the text, create
cohesion, and clarify the relationships among ideas and	details, quotations, or other information and examples	cohesion, and clarify the relationships among complex ideas	cohesion, and clarify the relationships among complex ideas
concepts.	appropriate to the audience's knowledge of the topic.	and concepts.	and concepts.
9-10.WHST.2.f Provide a concluding statement or section	9-10.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.d Use precise language, domain-specific	11-12.WHST.2.d Use precise language, domain-specific
=	structures to link the major sections of the text, create	vocabulary and techniques such as metaphor, simile, and	vocabulary and techniques such as metaphor, simile, and
	cohesion, and clarify the relationships among ideas and	analogy to manage the complexity of the topic; convey a	analogy to manage the complexity of the topic; convey a
the topic).	concepts.	knowledgeable stance in a style that responds to the discipline	knowledgeable stance in a style that responds to the discipline
		and context as well as to the expertise of likely readers.	and context as well as to the expertise of likely readers.
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		9-10.WHST.3 Narrative writing is not applicable as a	9-10.WHST.2.f Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section
		separate requirement for history, social studies, science, and	that follows from and supports the information or explanation	that follows from and supports the information or explanation	that follows from and supports the information or explanation
		technical subjects. Students' narrative skills continue to grow	presented (e.g., articulating implications or the significance of	provided (e.g., articulating implications or the significance of	provided (e.g., articulating implications or the significance of
		in these grades. The Standards require that students be able	the topic).	the topic).	the topic).
		9-10.WHST.4 Produce clear and coherent writing in which	9-10.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a
		the development, organization, and style are appropriate to	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and
		task, purpose, and audience.	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow
		,,,,	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able
			to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments
			I		
			and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,
			students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into
			their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In
			science and technical subjects, students must be able to write	science and technical subjects, students must be able to write	science and technical subjects, students must be able to write
			precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures
			they use in their investigations or technical work that others	they use in their investigations or technical work that others	they use in their investigations or technical work that others
			can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.
			9-10.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which
			the development, organization, and style are appropriate to	the development, organization, and style are appropriate to	the development, organization, and style are appropriate to
			task, purpose, and audience.	task, purpose, and audience.	task, purpose, and audience.
Membrane Potential -	ND	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying
		concepts and processes of science.	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
		9-10.1.1 Models: Explain how models can be used to	9-10.1.1 Models: Explain how models can be used to	11-12.1.1 Models: Explain how scientists create and use	11-12.1.1 Models: Explain how scientists create and use
		·		1	· · · · · · · · · · · · · · · · · · ·
		illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
		9-10.1.2 Systems: Describe the interaction of components	9-10.1.2 Systems: Describe the interaction of components	11-12.1.2 Systems: Identify the structure, organization, and	11-12.1.2 Systems: Identify the structure, organization, and
		within a system (e.g., interactions between living and	within a system (e.g., interactions between living and	dynamics of components within a system (e.g., cells, tissues,	dynamics of components within a system (e.g., cells, tissues,
		nonliving components of an ecosystem, interaction between	nonliving components of an ecosystem, interaction between	organs, organ systems, reactants and products in chemical	organs, organ systems, reactants and products in chemical
		organelles of a cell)	organelles of a cell)	equilibrium)	equilibrium)
		9-10.1.3 Constancy and Change: Explain how a system can	9-10.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can
		be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., balance of	be dynamic yet may remain in equilibrium (e.g., balance of
		rock cycle, population)	rock cycle, population)	forces, Le Chatelier's Principle, acid base systems)	forces, Le Chatelier's Principle, acid base systems)
		ND.2 Science Inquiry: Students use the process of science	9-10.1.4 Form and Function: Describe the relationship	11-12.1.4 Form and Function: Explain the relationship	11-12.1.4 Form and Function: Explain the relationship
		inquiry.	between form and function (e.g., solids, liquids, gases, cell	between form and function (e.g., atoms and ions, enzymes,	between form and function (e.g., atoms and ions, enzymes,
			specialization, simple machines, and plate tectonics)	aerodynamics)	aerodynamics)
		9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science
		questions and concepts that guide scientific investigations			inquiry.
		T =	inquiry.	inquiry.	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use
		9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use	, , , , , , , , , , , , , , , , , , , ,
		Formulate a testable hypothesis for a simple investigation	questions and concepts that guide scientific investigations	data from scientific investigations to accept or reject a	data from scientific investigations to accept or reject a
				hypothesis	hypothesis
		9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
		and conduct a guided investigation	Formulate a testable hypothesis for a simple investigation	Formulate and revise explanations based upon scientific	Formulate and revise explanations based upon scientific
				knowledge and experimental data	knowledge and experimental data
		9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design
		Maintain clear and accurate records of scientific investigations	and conduct a guided investigation	and conduct an independent investigation	and conduct an independent investigation
		ND.4 Life Science: Students understand the basic concepts	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
		and principles of life science.	Maintain clear and accurate records of scientific investigations	l .	Communicate and defend a scientific argument
			.	.	
		9-10.4.1 Structure and Function: Relate cell function to cell	ND.4 Life Science: Students understand the basic concepts	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students understand
		structure (i.e., cell wall, cell membrane, nucleus,	and principles of life science.	the history and nature of science.	the history and nature of science.
		9-10.4.2 Structure and Function: Relate the functions of cells		11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
		in multi-cellular organisms to their cell type (e.g., nerve cells,	structure (i.e., cell wall, cell membrane, nucleus,	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.g.,
		blood cells, guard cells)	mitochondria, chloroplast)	must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
				consistent with experimental and observational evidence	consistent with experimental and observational evidence
				about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems being
				studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open to
				question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
		9-10.4.3 Structure and Function: Explain the relationship	9-10.4.2 Structure and Function: Relate the functions of cells	ND.CC.11-12.RST Reading Standards for Information Literacy	ND.CC.11-12.RST Reading Standards for Information Literacy
		between protein structure and function		in Science and Technical Subjects	in Science and Technical Subjects
			blood cells, guard cells)		
		,	9-10.4.3 Structure and Function: Explain the relationship	- Key Ideas and Details	- Key Ideas and Details
		in Science and Technical Subjects	between protein structure and function		
		- Key Ideas and Details	ND.CC.9-10.RST Reading Standards for Information Literacy	11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
			in Science and Technical Subjects	analysis of science and technical texts, attending to important	analysis of science and technical texts, attending to important
				distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
				inconsistencies in the account.	inconsistencies in the account.
		9-10.RST.1 Cite specific textual evidence to support analysis	- Key Ideas and Details	11-12.RST.5 Analyze how the text structures information or	11-12.RST.5 Analyze how the text structures information or
		of science and technical texts, attending to the precise details	,	ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
		of explanations or descriptions.		understanding of the information or ideas.	understanding of the information or ideas.

9-10.RST.5 Analyze the structure of the relationships	_
concepts in a text, including relationships among key to	erms
(e.g., force, friction, reaction force, energy).	
9-10.RST.10 By the end of grade 10, read and compre	hend
science/technical texts in the grades 9-10 text complex	ity
band independently and proficiently.	
ND.CC.9-10.WHST Writing Standards for Literacy in	
History/Social Studies, Science, and Technical Subjects	
9-10.WHST.1 Write arguments focused on discipline-	specific
content.	
9-10.WHST.1.a Introduce precise claim(s), distinguish	
claim(s) from alternate or opposing claims, and create	
organization that establishes clear relationships among	the
claim(s), counterclaims, reasons, and evidence.	
9-10.WHST.1.b Develop claim(s) and counterclaims for	airly,
supplying data and evidence for each while pointing ou	t the
strengths and limitations of both claim(s) and counterc	laims in
a discipline-appropriate form and in a manner that ant	cipates
the audience's knowledge level and concerns.	
9-10.WHST.1.c Use words, phrases, and clauses to lin	k the
major sections of the text, create cohesion, and clarify	the
relationships between claim(s) and reasons, between r	easons
and evidence, and between claim(s) and counterclaims	
9-10.WHST.1.e Provide a concluding statement or se	ction
that follows from or supports the argument presented.	
9-10.WHST.2 Write informative/explanatory texts, in	_
the narration of historical events, scientific procedures	/
experiments, or technical processes.	
9-10.WHST.2.a Introduce a topic and organize ideas,	
concepts, and information to make important connecti	
distinctions; include formatting (e.g., headings), graphi	cs (e.g.,
figures, tables), and multimedia when useful to aiding comprehension.	
comprehension.	
9-10.WHST.2.b Develop the topic with well-chosen,	
relevant, and sufficient facts, extended definitions, con	crete
details, quotations, or other information and examples	
appropriate to the audience's knowledge of the topic.	
9-10.WHST.2.c Use varied transitions and sentence	
structures to link the major sections of the text, create	
cohesion, and clarify the relationships among ideas and	i
concepts.	
9-10.WHST.2.f Provide a concluding statement or sec	
that follows from and supports the information or expl	anation

the topic).

9-10.WHST.3. - Narrative writing is not applicable as a

separate requirement for history, social studies, science, and

technical subjects. Students' narrative skills continue to grow

in these grades. The Standards require that students be able

RST.5 Analyze the structure of the relationships among	9-10.RST.1 Cite specific textual evidence to support analysis
epts in a text, including relationships among key terms force, friction, reaction force, energy).	of science and technical texts, attending to the precise details of explanations or descriptions.
RST.10 By the end of grade 10, read and comprehend ce/technical texts in the grades 9-10 text complexity independently and proficiently. C.9-10.WHST Writing Standards for Literacy in rry/Social Studies, Science, and Technical Subjects	9-10.RST.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). 9-10.RST.10 By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.
WHST.1 Write arguments focused on discipline-specific ent. WHST.1.a Introduce precise claim(s), distinguish the (s) from alternate or opposing claims, and create an nization that establishes clear relationships among the (s), counterclaims, reasons, and evidence.	ND.CC.9-10.WHST Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 9-10.WHST.1 Write arguments focused on discipline-specific content.
WHST.1.b Develop claim(s) and counterclaims fairly, lying data and evidence for each while pointing out the gths and limitations of both claim(s) and counterclaims in cipline-appropriate form and in a manner that anticipates udience's knowledge level and concerns.	9-10.WHST.1.a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
WHST.1.c Use words, phrases, and clauses to link the r sections of the text, create cohesion, and clarify the ionships between claim(s) and reasons, between reasons evidence, and between claim(s) and counterclaims.	9-10.WHST.1.b Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims ir a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.
WHST.1.e Provide a concluding statement or section follows from or supports the argument presented.	9-10.WHST.1.c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
WHST.2 Write informative/explanatory texts, including varration of historical events, scientific procedures/ riments, or technical processes.	9-10.WHST.1.e Provide a concluding statement or section that follows from or supports the argument presented.
WHST.2.a Introduce a topic and organize ideas, epts, and information to make important connections and actions; include formatting (e.g., headings), graphics (e.g., es, tables), and multimedia when useful to aiding orehension.	9-10.WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
WHST.2.b Develop the topic with well-chosen, ant, and sufficient facts, extended definitions, concrete Is, quotations, or other information and examples opriate to the audience's knowledge of the topic.	9-10.WHST.2.a Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
WHST.2.c Use varied transitions and sentence tures to link the major sections of the text, create sion, and clarify the relationships among ideas and epts.	9-10.WHST.2.b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

pic and organize ideas. when useful to aiding opic with well-chosen, ktended definitions, concrete ormation and examples appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create presented (e.g., articulating implications or the significance of cohesion, and clarify the relationships among ideas and 9-10.WHST.2.f. - Provide a concluding statement or section

the topic).

al evidence to support analysis 11-12.RST.9. - Synthesize information from a range of sources 11-12.RST.9. - Synthesize information from a range of sources attending to the precise details (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. ure of the relationships among | 11-12.RST.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity pand independently and proficiently. ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

specific content. rs focused on discipline-specific 11-12.WHST.1.a. - Introduce precise, knowledgeable claim(s). establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s). counterclaims, reasons, and evidence.

11-12.WHST.1. - Write arguments focused on discipline-

11-12.WHST.1.b. - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a disciplineappropriate form that anticipates the audience's knowledge evel, concerns, values, and possible biases.

11-12.WHST.1.c. - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create th claim(s) and counterclaims in cohesion, and clarify the relationships between claim(s) and nd in a manner that anticipates reasons, between reasons and evidence, and between claim(s) reasons, between reasons and evidence, and between claim(s) and counterclaims.

11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific nrocedures/ experiments, or technical processes ve/explanatory texts, including 11-12.WHST.2.a. - Introduce a topic and organize complex deas, 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. tables), and multimedia when useful to aiding comprehensior

11-12.WHST.2.b. - Develop the topic thoroughly by selecting ake important connections and the most significant and relevant facts, extended definitions, (e.g., headings), graphics (e.g., concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the 11-12.WHST.2.c. - Use varied transitions and sentence

structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

11-12.WHST.2.d. - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline knowledgeable stance in a style that responds to the discipling and context as well as to the expertise of likely readers.

11-12.WHST.2.e. - Provide a concluding statement or section that follows from and supports the information or explanation that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of provided (e.g., articulating implications or the significance of the topic)

(e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. 11-12.RST.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

11-12.WHST.1. - Write arguments focused on disciplinespecific content.

11-12.WHST.1.a. - Introduce precise, knowledgeable claim(s) establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s). counterclaims, reasons, and evidence. 11-12.WHST.1.b. - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a disciplineappropriate form that anticipates the audience's knowledge evel, concerns, values, and possible biases. 11-12.WHST.1.c. - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and and counterclaims. 11-12.WHST.1.e. - Provide a concluding statement or section

11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific nrocedures/ experiments or technical processes 11-12.WHST.2.a. - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures,

that follows from or supports the argument presented.

11-12.WHST.2.b. - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the

11-12.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

11-12.WHST.2.d. - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a and context as well as to the expertise of likely readers.

11-12.WHST.2.e. - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic)

		9-10.WHST.4 Produce clear and coherent writing in which	9-10.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a
		the development, organization, and style are appropriate to	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and
		task, purpose, and audience.	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow
			in these grades. The Standards require that students be able	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able
			to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments
			and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,
			students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into
			their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In
			science and technical subjects, students must be able to write	science and technical subjects, students must be able to write	science and technical subjects, students must be able to write
			precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures
			they use in their investigations or technical work that others	they use in their investigations or technical work that others	they use in their investigations or technical work that others
			can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.
			9-10.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which	11-12.WHST.4 Produce clear and coherent writing in which
			the development, organization, and style are appropriate to	the development, organization, and style are appropriate to	the development, organization, and style are appropriate to
			task, purpose, and audience.	task, purpose, and audience.	task, purpose, and audience.
lembrane Transport -	ND	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying
		concepts and processes of science.	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
		9-10.1.1 Models: Explain how models can be used to	9-10.1.1 Models: Explain how models can be used to	11-12.1.1 Models: Explain how scientists create and use	11-12.1.1 Models: Explain how scientists create and use
		illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
		9-10.1.2 Systems: Describe the interaction of components	9-10.1.2 Systems: Describe the interaction of components	11-12.1.2 Systems: Identify the structure, organization, and	11-12.1.2 Systems: Identify the structure, organization, and
		within a system (e.g., interactions between living and	within a system (e.g., interactions between living and	dynamics of components within a system (e.g., cells, tissues,	dynamics of components within a system (e.g., cells, tissues,
		nonliving components of an ecosystem, interaction between	nonliving components of an ecosystem, interaction between	organs, organ systems, reactants and products in chemical	organs, organ systems, reactants and products in chemical
		organelles of a cell)	organelles of a cell)	equilibrium)	equilibrium)
		9-10.1.3 Constancy and Change: Explain how a system can	9-10.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can	11-12.1.3 Constancy and Change: Explain how a system can
		be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., balance of	be dynamic yet may remain in equilibrium (e.g., balance of
		rock cycle, population)	rock cycle, population)	forces, Le Chatelier's Principle, acid base systems)	forces, Le Chatelier's Principle, acid base systems)
		ND.2 Science Inquiry: Students use the process of science	9-10.1.4 Form and Function: Describe the relationship	11-12.1.4 Form and Function: Explain the relationship	11-12.1.4 Form and Function: Explain the relationship
		inquiry.	between form and function (e.g., solids, liquids, gases, cell	between form and function (e.g., atoms and ions, enzymes,	between form and function (e.g., atoms and ions, enzymes,
			specialization, simple machines, and plate tectonics)	aerodynamics)	aerodynamics)
		9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify		ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science
		questions and concepts that guide scientific investigations	inquiry.	inquiry.	inquiry.
			9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use
			questions and concepts that guide scientific investigations	data from scientific investigations to accept or reject a hypothesis	data from scientific investigations to accept or reject a hypothesis
		9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
		and conduct a guided investigation	Formulate a testable hypothesis for a simple investigation	Formulate and revise explanations based upon scientific	Formulate and revise explanations based upon scientific
		and conduct a guided investigation	Formulate a testable hypothesis for a simple investigation		1
		0.10.2.7 Abilities Nessessan To De Scientific Inquiru	0 10 2 6 Abilities Necessary To Do Scientific Inquiry Design	knowledge and experimental data	knowledge and experimental data
			9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design
		Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	and conduct an independent investigation 11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	and conduct an independent investigation 11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
		·	Maintain clear and accurate records of scientific investigations	1	Communicate and defend a scientific argument
		and principles of me science.	The state of the second of the state of the	estimation and defend a scientific argument	communicate and desend a scientific digament
		9-10.4.1 Structure and Function: Relate cell function to cell	ND.4 Life Science: Students understand the basic concepts	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students understand
		structure (i.e., cell wall, cell membrane, nucleus,	and principles of life science.	the history and nature of science.	the history and nature of science.
		9-10.4.2 Structure and Function: Relate the functions of cells	9-10.4.1 Structure and Function: Relate cell function to cell	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
		in multi-cellular organisms to their cell type (e.g., nerve cells,	structure (i.e., cell wall, cell membrane, nucleus,	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.g.,
		blood cells, guard cells)	mitochondria, chloroplast)	must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
				consistent with experimental and observational evidence	consistent with experimental and observational evidence
				about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems being
				studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open to
				question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
		9-10.4.3 Structure and Function: Explain the relationship	9-10.4.2 Structure and Function: Relate the functions of cells	ND.CC.11-12.RST Reading Standards for Information Literacy	ND.CC.11-12.RST Reading Standards for Information Literacy
		I The state of the	in multi-cellular organisms to their cell type (e.g., nerve cells,	in Science and Technical Subjects	in Science and Technical Subjects
		,	blood cells, guard cells)		
		ND.CC.9-10.RST Reading Standards for Information Literacy	1	- Key Ideas and Details	- Key Ideas and Details
			between protein structure and function	,	,
		- Key Ideas and Details	ND.CC.9-10.RST Reading Standards for Information Literacy	11-12 RST 1 - Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
			in Science and Technical Subjects		analysis of science and technical texts, attending to important
			selence and recrimear subjects	distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
				1 - 1	
		0.10 PST 1 - Cita specific textual evidence to support	. Koy Ideas and Details	inconsistencies in the account.	inconsistencies in the account.
		9-10.RST.1 Cite specific textual evidence to support analysis	- Key Ideas and Details		11-12.RST.5 Analyze how the text structures information or
		of science and technical texts, attending to the precise details		ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
		of explanations or descriptions.	0.40.0074 69 96 11 11 11 11 11 11 11 11	understanding of the information or ideas.	understanding of the information or ideas.
			of science and technical texts, attending to the precise details		(e.g., texts, experiments, simulations) into a coherent
	1	(e.g., force, friction, reaction force, energy).	of explanations or descriptions.	understanding of a process, phenomenon, or concept,	understanding of a process, phenomenon, or concept,
				resolving conflicting information when possible.	resolving conflicting information when possible.

science/technical texts in the grades 9-10 text complexity band independently and proficiently.

ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

9-10.WHST.1.a. - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.

9-10.WHST.1.b. - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in organization that establishes clear relationships among the a discipline-appropriate form and in a manner that anticipates (claim(s), counterclaims, reasons, and evidence, the audience's knowledge level and concerns.

9-10.WHST.1.c. - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

the narration of historical events, scientific procedures/ experiments, or technical processes.

9-10.WHST.2.a. - Introduce a topic and organize ideas, concepts, and information to make important connections and the narration of historical events, scientific procedures/ distinctions; include formatting (e.g., headings), graphics (e.g., experiments, or technical processes. figures, tables), and multimedia when useful to aiding comprehension.

9-10.WHST.2.b. - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

9-10.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts

9-10.WHST.2.f. - Provide a concluding statement or section that follows from and supports the information or explanation structures to link the major sections of the text, create presented (e.g., articulating implications or the significance of cohesion, and clarify the relationships among ideas and the topic)

9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able 9-10.WHST.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience

9-10.RST, 10. - By the end of grade 10, read and comprehend 9-10.RST, 5. - Analyze the structure of the relationships among 11-12.RST, 10. - By the end of grade 12, read and comprehend 11-12.RST, 10. - By the end of grade 12, read and comprehend concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

9-10.RST.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.

9-10.WHST.1. - Write arguments focused on discipline-specific ND.CC.9-10.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 9-10.WHST.1. - Write arguments focused on discipline-specific 11-12.WHST.1.a. - Introduce precise, knowledgeable claim(s),

> 9-10.WHST.1.a. - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an

9-10.WHST.1.b. - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims a discipline-appropriate form and in a manner that anticipates reasons, between reasons and evidence, and between claim(s) reasons, between reasons and evidence, and between claim(s) the audience's knowledge level and concerns. 9-10.WHST.1.c. - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. 9-10.WHST.2. - Write informative/explanatory texts, including 9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

9-10.WHST.2.a. - Introduce a topic and organize ideas, concepts, and information to make important connections and the most significant and relevant facts, extended definitions. distinctions; include formatting (e.g., headings), graphics (e.g., concrete details, quotations, or other information and figures, tables), and multimedia when useful to aiding comprehension

9-10.WHST.2.b. - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. 9-10.WHST.2.c. - Use varied transitions and sentence concepts.

9-10.WHST.2.f. - Provide a concluding statement or section that follows from and supports the information or explanation that follows from and supports the information or explanation that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of provided (e.g., articulating implications or the significance of the topic).

9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate parrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

science/technical texts in the grades 11-12 text complexity band independently and proficiently.

ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

11-12.WHST.1. - Write arguments focused on disciplinespecific content

establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims reasons and evidence

11-12.WHST.1.b. - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a disciplineappropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

11-12.WHST.1.c. - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and and counterclaims.

11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 9-10.WHST.2. - Write informative/explanatory texts, including 11-12.WHST.2.a. - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

> 11-12.WHST.2.b. - Develop the topic thoroughly by selecting examples appropriate to the audience's knowledge of the

> 11-12.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

11-12.WHST.2.d. - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

11-12.WHST.2.e. - Provide a concluding statement or section. the topic).

11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow these grades. The Standards require that students be able to incorporate parrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write recise enough descriptions of the step-by-step procedures hey use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

science/technical texts in the grades 11-12 text complexity band independently and proficiently.

ND.CC.11-12.WHST. - Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

11-12.WHST.1. - Write arguments focused on disciplinenecific content

11-12.WHST.1.a. - Introduce precise, knowledgeable claim(s). establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims reasons and evidence

11-12.WHST.1.b. - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a disciplineappropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

11-12.WHST.1.c. - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and and counterclaims.

11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

11-12.WHST.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 11-12.WHST.2.a. - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension

11-12.WHST.2.b. - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions. concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the

11-12.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas

11-12.WHST.2.d. - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a and context as well as to the expertise of likely readers.

11-12.WHST.2.e. - Provide a concluding statement or section provided (e.g., articulating implications or the significance of the topic).

11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate parrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

			9-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to	11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to	11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to
			task, purpose, and audience.	task, purpose, and audience.	task, purpose, and audience.
litrogen Cycle -	ND		ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying
• ,			concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
		9-10.1.1 Models: Explain how models can be used to	9-10.1.1 Models: Explain how models can be used to	11-12.1.1 Models: Explain how scientists create and use	11-12.1.1 Models: Explain how scientists create and use
		illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
			9-10.1.2 Systems: Describe the interaction of components	11-12.1.4 Form and Function: Explain the relationship	11-12.1.4 Form and Function: Explain the relationship
			within a system (e.g., interactions between living and	between form and function (e.g., atoms and ions, enzymes,	between form and function (e.g., atoms and ions, enzymes,
		nonliving components of an ecosystem, interaction between	nonliving components of an ecosystem, interaction between	aerodynamics)	aerodynamics)
			organelles of a cell) 9-10.1.4 Form and Function: Describe the relationship	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science
			between form and function (e.g., solids, liquids, gases, cell	inquiry.	inquiry.
			specialization, simple machines, and plate tectonics)		
		ND.2 Science Inquiry: Students use the process of science	9-10.1.6 Evolution and Equilibrium: Identify principles	11-12.2.1 Understandings About Scientific Inquiry: Explain	11-12.2.1 Understandings About Scientific Inquiry: Explain
		inquiry.	governing evolution and equilibrium within systems (e.g.,	how new knowledge and methods emerge from different	how new knowledge and methods emerge from different
			cause and effect, positive and negative feedback)	types of investigations and public communication among	types of investigations and public communication among
		0.40.3.4. Understanding About CrimbiG- Incuire. Combrid	ND 2 Calculation Charles to the account of calculations	scientists	scientists
		9-10.2.1 Understandings About Scientific Inquiry: Explain how scientific investigations can result in new ideas	ND.2 Science Inquiry: Students use the process of science inquiry.	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a
		now scientific investigations can result in new ideas	inqui y.	hypothesis	hypothesis
	1	9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify	9-10.2.1 Understandings About Scientific Inquiry: Explain	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
	1	questions and concepts that guide scientific investigations	how scientific investigations can result in new ideas	Formulate and revise explanations based upon scientific	Formulate and revise explanations based upon scientific
	1			knowledge and experimental data	knowledge and experimental data
			9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify		
		Formulate a testable hypothesis for a simple investigation	questions and concepts that guide scientific investigations	and conduct an independent investigation	and conduct an independent investigation
		9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
		and conduct a guided investigation	Formulate a testable hypothesis for a simple investigation	Communicate and defend a scientific argument	Communicate and defend a scientific argument
		9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students understand
		Maintain clear and accurate records of scientific investigations	and conduct a guided investigation	the history and nature of science.	the history and nature of science.
			9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
		and principles of life science.	Maintain clear and accurate records of scientific investigations	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.g.,
				must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
				consistent with experimental and observational evidence	consistent with experimental and observational evidence
				about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to	about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to
				question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
			ND.4 Life Science: Students understand the basic concepts	-	ND.CC.11-12.RST Reading Standards for Information Literacy
			and principles of life science.	in Science and Technical Subjects	in Science and Technical Subjects
		9-10.4.11 Matter and Energy in Living Systems: Explain how		- Key Ideas and Details	- Key Ideas and Details
		matter and energy flow through living and nonliving ND.CC.9-10.RST Reading Standards for Information Literacy	between protein structure and function 9-10.4.11 Matter and Energy in Living Systems: Explain how	11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
		in Science and Technical Subjects	matter and energy flow through living and nonliving	analysis of science and technical texts, attending to important	
	1	,	components in an ecosystem (e.g., carbon cycle, water cycle,	distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
	1		nitrogen cycle)	inconsistencies in the account.	inconsistencies in the account.
	1	- Key Ideas and Details	ND.CC.9-10.RST Reading Standards for Information Literacy	11-12.RST.5 Analyze how the text structures information or	11-12.RST.5 Analyze how the text structures information or
			in Science and Technical Subjects	ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
	1	9-10.RST.1 Cite specific textual evidence to support analysis	- Key Ideas and Details	understanding of the information or ideas.	understanding of the information or ideas.
	1	of science and technical texts, attending to the precise details	r- Ney lueas and Details	11-12.RST.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent	11-12.RST.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent
	1	of explanations or descriptions.		understanding of a process, phenomenon, or concept,	understanding of a process, phenomenon, or concept,
	1	- F		resolving conflicting information when possible.	resolving conflicting information when possible.
		9-10.RST.5 Analyze the structure of the relationships among	9-10.RST.1 Cite specific textual evidence to support analysis		11-12.RST.10 By the end of grade 12, read and comprehend
	1		of science and technical texts, attending to the precise details	science/technical texts in the grades 11-12 text complexity	science/technical texts in the grades 11-12 text complexity
		1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =	of explanations or descriptions.	band independently and proficiently.	band independently and proficiently.
	1		9-10.RST.5 Analyze the structure of the relationships among		ND.CC.11-12.WHST Writing Standards for Literacy in
			concepts in a text, including relationships among key terms	History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects
	1		(e.g., force, friction, reaction force, energy). 9-10.RST.10 By the end of grade 10, read and comprehend	11-12.WHST.1 Write arguments focused on discipline-	11-12.WHST.1 Write arguments focused on discipline-
		,	science/technical texts in the grades 9-10 text complexity	specific content.	specific content.
	1		band independently and proficiently.	specific content.	Specific content.
		9-10.WHST.1 Write arguments focused on discipline-specific		11-12.WHST.1.a Introduce precise, knowledgeable claim(s),	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),
	1	-	History/Social Studies, Science, and Technical Subjects	establish the significance of the claim(s), distinguish the	establish the significance of the claim(s), distinguish the
	1			claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an
	1	1	İ	organization that logically sequences the claim(s),	organization that logically sequences the claim(s),
				counterclaims, reasons, and evidence.	organization that logically sequences the claim(s),

9-10.WHST.1.a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
9-10.WHST.1.b Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims i a discipline-appropriate form and in a manner that anticipate the audience's knowledge level and concerns. 9-10.WHST.1.c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
9-10.WHST.1.e Provide a concluding statement or section that follows from or supports the argument presented.
9-10.WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
9-10.WHST.2.a Introduce a topic and organize ideas, concepts, and information to make important connections an distinctions; include formatting (e.g., headings), graphics (e.g. figures, tables), and multimedia when useful to aiding

comprehension. 9-10.WHST.2.b. - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples

9-10.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.

appropriate to the audience's knowledge of the topic.

9-10.WHST.2.f. - Provide a concluding statement or section that follows from and supports the information or explanation structures to link the major sections of the text, create presented (e.g., articulating implications or the significance of cohesion, and clarify the relationships among ideas and the topic). 9-10.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and

technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

9-10.WHST.1. - Write arguments focused on discipline-specific 11-12.WHST.1.b. - Develop claim(s) and counterclaims fairly content

9-10.WHST.1.a. - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an aims in organization that establishes clear relationships among the cipates claim(s), counterclaims, reasons, and evidence.

9-10.WHST.1.b. - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. 9-10.WHST.1.c. - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons | procedures/ experiments, or technical processes. and evidence, and between claim(s) and counterclaims. cluding 9-10.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

9-10.WHST.2. - Write informative/explanatory texts, including ons and the narration of historical events, scientific procedures/ cs (e.g., experiments, or technical processes.

> 9-10.WHST.2.a. - Introduce a topic and organize ideas, concepts, and information to make important connections and structures to link the major sections of the text, create distinctions; include formatting (e.g., headings), graphics (e.g., cohesion, and clarify the relationships among complex ideas figures, tables), and multimedia when useful to aiding comprehension.

9-10.WHST.2.b. - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details quotations or other information and examples appropriate to the audience's knowledge of the topic.

9-10.WHST.2.c. - Use varied transitions and sentence

9-10.WHST.2.f. - Provide a concluding statement or section that follows from and supports the information or explanation separate requirement for history, social studies, science, and presented (e.g., articulating implications or the significance of technical subjects. Students' narrative skills continue to grow the topic).

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 disciplineappropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. 11-12.WHST.1.c. - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and and counterclaims

11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

11-12.WHST.2. - Write informative/explanatory texts. including the narration of historical events, scientific

11-12.WHST.2.a. - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. Itables), and multimedia when useful to aiding comprehension

11-12.WHST.2.b. - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions. concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the

11-12.WHST.2.c. - Use varied transitions and sentence and concents

11-12.WHST.2.d. - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a and context as well as to the expertise of likely readers.

11-12.WHST.2.e. - Provide a concluding statement or section. that follows from and supports the information or explanation that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of

11-12.WHST.3. - Narrative writing is not applicable as a n these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

11-12.WHST.1.b. - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a disciplineappropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

11-12.WHST.1.c. - Use words, phrases, and clauses as well as aried 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) reasons, between reasons and evidence, and between claim(s' and counterclaims.

> 11-12.WHST.1.e. - Provide a concluding statement or section that follows from or supports the argument presented.

11-12.WHST.2. - Write informative/explanatory texts. including the narration of historical events, scientific procedures/ experiments, or technical processes.

11-12.WHST.2.a. - Introduce a topic and organize complex deas, 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,

11-12.WHST.2.b. - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions. concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the

11-12.WHST.2.c. - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concents

11-12.WHST.2.d. - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

> 11-12.WHST.2.e. - Provide a concluding statement or section provided (e.g., articulating implications or the significance of

> 11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

		9-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	9-10.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In	11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
			science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.		
			9-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		
smosis -	ND	ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 9-10.1.1 Models: Explain how models can be used to illustrate scientific principles 9-10.1.3 Constancy and Change: Explain how a system can	ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 9-10.1.1 Models: Explain how models can be used to illustrate scientific principles 9-10.1.3 Constancy and Change: Explain how a system can	ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 11-12.1.1 Models: Explain how scientists create and use Models to address scientific knowledge 11-12.1.3 Constancy and Change: Explain how a system can	ND.1 Unifying Concepts: Students understand the unifying concepts and processes of science. 11-12.1.1 Models: Explain how scientists create and use Models to address scientific knowledge 11-12.1.3 Constancy and Change: Explain how a system can
		be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population) ND.2 Science Inquiry: Students use the process of science inquiry.	be dynamic yet may remain in equilibrium (e.g., water cycle, rock cycle, population) ND.2 Science Inquiry: Students use the process of science inquiry.	be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems) ND.2 Science Inquiry: Students use the process of science inquiry.	be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems) ND.2 Science Inquiry: Students use the process of science inquiry.
		questions and concepts that guide scientific investigations 9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify questions and concepts that guide scientific investigations 9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
		Formulate a testable hypothesis for a simple investigation 9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation	Formulate a testable hypothesis for a simple investigation 9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation	Formulate and revise explanations based upon scientific knowledge and experimental data 11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation	Formulate and revise explanations based upon scientific knowledge and experimental data 11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design and conduct an independent investigation
		9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry: Communicate and defend a scientific argument
		ND.4 Life Science: Students understand the basic concepts and principles of life science. 9-10.4.1 Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)	ND.4 Life Science: Students understand the basic concepts and principles of life science. 9-10.4.1 Structure and Function: Relate cell function to cell structure (i.e., cell wall, cell membrane, nucleus, mitochondria, chloroplast)	ND.8 History and Nature of Science: Students understand the history and nature of science 11-12.8.1 Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to	ND.8 History and Nature of Science: Students understand the history and nature of science. 11-12.8.1 Scientific Knowledge: Identify the criteria that scientific explanations must meet to be considered valid (e.g., must be based on consistent and repeatable data, be consistent with experimental and observational evidence about nature, make accurate predictions about systems being studied, be logical, report methods and results, be open to
		ND.CC.9-10.RST Reading Standards for Information Literacy	ND.CC.9-10.RST Reading Standards for Information Literacy	question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence) ND.CC.11-12.RST Reading Standards for Information Literacy
		in Science and Technical Subjects - Key Ideas and Details	in Science and Technical Subjects - Key Ideas and Details 9-10.RST.1 Cite specific textual evidence to support analysis	in Science and Technical Subjects - Key Ideas and Details	in Science and Technical Subjects - Key Ideas and Details 11-12.RST.1 Cite specific textual evidence to support
			of science and technical texts, attending to the precise details of explanations or descriptions.	I to the second	analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
		9-10.RST.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). 9-10.RST.10 By the end of grade 10, read and comprehend	9-10.RST.S Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). 9-10.RST.10 By the end of grade 10, read and comprehend	11-12.RST.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. 11-12.RST.9 Synthesize information from a range of sources	11-12.RST.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
		science/technical texts in the grades 9-10 text complexity band independently and proficiently.	science/technical texts in the grades 9-10 text complexity band independently and proficiently.	(e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	(e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
		ND.CC.9-10.WHST Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 9-10.WHST.1 Write arguments focused on discipline-specific	ND.CC.9-10.WHST Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 9-10.WHST.1 - Write arguments focused on discipline-specific	science/technical texts in the grades 11-12 text complexity band independently and proficiently.	11-12.RST.10 By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently. ND.CC.11-12.WHST Writing Standards for Literacy in
		content. 9-10.WHST.1.a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an	content. 9-10.WHST.1.a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an	History/Social Studies, Science, and Technical Subjects 11-12.WHST.1 Write arguments focused on discipline- specific content.	History/Social Studies, Science, and Technical Subjects 11-12.WHST.1 Write arguments focused on discipline- specific content.
		organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.	organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.		

	p-10.WHST.1.b Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in discipline-appropriate form and in a manner that anticipates he audience's knowledge level and concerns. p-10.WHST.1.c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. p-10.WHST.1.e Provide a concluding statement or section that follows from or supports the argument presented.	a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. 9-10.WHST.1.c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the	establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. 11-12.WHST.1.b Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. 11-12.WHST.1.c Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create	11-12.WHST.1.a Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. 11-12.WHST.1.b Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. 11-12.WHST.1.c Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and
	the narration of historical events, scientific procedures/ experiments, or technical processes. 9-10.WHST.2.a Introduce a topic and organize ideas,	9-10.WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. 9-10.WHST.2.a Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding	reasons, between reasons and evidence, and between claim(s) and counterclaims. 11-12.WHST.1.e Provide a concluding statement or section that follows from or supports the argument presented. 11-12.WHST.2 Write informative/explanatory texts,	reasons, between reasons and evidence, and between claim(s) and counterclaims. 11-12.WHST.1.e Provide a concluding statement or section that follows from or supports the argument presented. 11-12.WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
	regues, Laueis, and munificular when useful to aloning comprehension. 9-10.WHST.2.b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples suppropriate to the audience's knowledge of the topic.	regress, tables, and mutatiled a when useful to along comprehension. 9-10.WHST.2.b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.	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,	11-12.WHST.2.a Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
	p-10.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.	9-10.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.	concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the	11-12.WHST.2.b Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the
	p-10.WHST.2.f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of he topic). p-10.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and echnical subjects. Students' narrative skills continue to grow these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, tudents must be able to incorporate narrative accounts into heir analyses of individuals or events of historical import. In cicience and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures hey use in their investigations or technical work that others can replicate them and (possibly) reach the same results.		structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. 11-12.WHST.2.d Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a	topic. 11-12.WHST.2.c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. 11-12.WHST.2.d Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
ľ	p-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to ask, purpose, and audience.	9-10.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). 11-12.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write	11-12.WHST.2.e Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). 11-12.WHST.3 Narrative writing is not applicable as a separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

				11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	11-12.WHST.4 Produce clear and coherent writing in withe development, organization, and style are appropriate task, purpose, and audience.
hotosynthesis -	ND	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unify
		concepts and processes of science.	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
		9-10.1.1 Models: Explain how models can be used to	9-10.1.1 Models: Explain how models can be used to	11-12.1.1 Models: Explain how scientists create and use	11-12.1.1 Models: Explain how scientists create and us
		illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
		ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of science	11-12.1.4 Form and Function: Explain the relationship	11-12.1.4 Form and Function: Explain the relationship
		inquiry.	inquiry.	between form and function (e.g., atoms and ions, enzymes,	between form and function (e.g., atoms and ions, enzym
				aerodynamics)	aerodynamics)
		9-10.2.1 Understandings About Scientific Inquiry: Explain	9-10.2.1 Understandings About Scientific Inquiry: Explain	ND.2 Science Inquiry: Students use the process of science	ND.2 Science Inquiry: Students use the process of scie
		how scientific investigations can result in new ideas	how scientific investigations can result in new ideas	inquiry.	inquiry.
		9-10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify		11-12.2.1 Understandings About Scientific Inquiry: Explain	11-12.2.1 Understandings About Scientific Inquiry: Exp
		questions and concepts that guide scientific investigations	questions and concepts that guide scientific investigations	how new knowledge and methods emerge from different	how new knowledge and methods emerge from differen
		4		types of investigations and public communication among	types of investigations and public communication amon
				scientists	scientists
		9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	9-10.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use	11-12.2.3 Abilities Necessary To Do Scientific Inquiry:
		Formulate a testable hypothesis for a simple investigation	Formulate a testable hypothesis for a simple investigation	data from scientific investigations to accept or reject a	data from scientific investigations to accept or reject a
		rormulate a testable hypothesis for a simple investigation	Formulate a testable hypothesis for a simple investigation		
		0.40.0.5 ALTER NO. 5 D. 6 C. 105 L. 1. L. 105	0.40.05 ALTHU N	hypothesis	hypothesis
			9-10.2.5 Abilities Necessary To Do Scientific Inquiry: Identify	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
		the independent and dependent variables, the control, and	the independent and dependent variables, the control, and	Formulate and revise explanations based upon scientific	Formulate and revise explanations based upon scientific
		the constants when conducting an experiment	the constants when conducting an experiment	knowledge and experimental data	knowledge and experimental data
		9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry:
		and conduct a guided investigation	and conduct a guided investigation	and conduct an independent investigation	and conduct an independent investigation
		9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	9-10.2.7 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
		Maintain clear and accurate records of scientific investigations	Maintain clear and accurate records of scientific investigations	Communicate and defend a scientific argument	Communicate and defend a scientific argument
		ND.4 Life Science: Students understand the basic concepts	ND.4 Life Science: Students understand the basic concepts	ND.8 History and Nature of Science: Students understand	ND.8 History and Nature of Science: Students underst
		and principles of life science.	and principles of life science.	the history and nature of science.	the history and nature of science.
		9-10.4.1 Structure and Function: Relate cell function to cell	9-10.4.1 Structure and Function: Relate cell function to cell	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria th
		structure (i.e., cell wall, cell membrane, nucleus,	structure (i.e., cell wall, cell membrane, nucleus,	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid
		mitochondria, chloroplast)	mitochondria, chloroplast)	must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
				consistent with experimental and observational evidence	consistent with experimental and observational evidence
				about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems
				studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open
				question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
		9-10.4.3 Structure and Function: Explain the relationship	9-10.4.3 Structure and Function: Explain the relationship	ND.CC.11-12.RST Reading Standards for Information Literacy	ND.CC.11-12.RST Reading Standards for Information L
		between protein structure and function	between protein structure and function	in Science and Technical Subjects	in Science and Technical Subjects
		9-10.4.12 Matter and Energy in Living Systems: Compare	9-10.4.12 Matter and Energy in Living Systems: Compare	- Key Ideas and Details	- Key Ideas and Details
		and contrast photosynthesis and cellular respiration	and contrast photosynthesis and cellular respiration		
		ND.CC.9-10.RST Reading Standards for Information Literacy		11-12.RST.1 Cite specific textual evidence to support	11-12.RST.1 Cite specific textual evidence to support
		in Science and Technical Subjects	in Science and Technical Subjects	analysis of science and technical texts, attending to important	analysis of science and technical texts, attending to imp
				distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
				inconsistencies in the account.	inconsistencies in the account.
		- Key Ideas and Details	- Key Ideas and Details	11-12.RST.5 Analyze how the text structures information or	11-12.RST.5 Analyze how the text structures informat
				ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
				understanding of the information or ideas.	understanding of the information or ideas.
			9-10.RST.1 Cite specific textual evidence to support analysis	11-12.RST.9 Synthesize information from a range of sources	11-12.RST.9 Synthesize information from a range of so
			of science and technical texts, attending to the precise details	(e.g., texts, experiments, simulations) into a coherent	(e.g., texts, experiments, simulations) into a coherent
		of explanations or descriptions.	of explanations or descriptions.	understanding of a process, phenomenon, or concept,	understanding of a process, phenomenon, or concept,
				resolving conflicting information when possible.	resolving conflicting information when possible.
		9-10.RST.5 Analyze the structure of the relationships among	9-10.RST.5 Analyze the structure of the relationships among	11-12.RST.10 By the end of grade 12, read and comprehend	11-12.RST.10 By the end of grade 12, read and compr
		concepts in a text, including relationships among key terms	concepts in a text, including relationships among key terms	science/technical texts in the grades 11-12 text complexity	science/technical texts in the grades 11-12 text complex
		(e.g., force, friction, reaction force, energy).	(e.g., force, friction, reaction force, energy).	band independently and proficiently.	band independently and proficiently.
		9-10.RST.10 By the end of grade 10, read and comprehend	9-10.RST.10 By the end of grade 10, read and comprehend	ND.CC.11-12.WHST Writing Standards for Literacy in	ND.CC.11-12.WHST Writing Standards for Literacy in
		science/technical texts in the grades 9-10 text complexity	science/technical texts in the grades 9-10 text complexity	History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects
		band independently and proficiently.	band independently and proficiently.		
		ND.CC.9-10.WHST Writing Standards for Literacy in	ND.CC.9-10.WHST Writing Standards for Literacy in	11-12.WHST.1 Write arguments focused on discipline-	11-12.WHST.1 Write arguments focused on discipline-
		History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects	specific content.	specific content.
			9-10.WHST.1 Write arguments focused on discipline-specific	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),	11-12.WHST.1.a Introduce precise, knowledgeable cla
				1	,
	- 1	content.	content.	establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an	establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create a
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
				organization that logically sequences the claim(s), counterclaims, reasons, and evidence.	organization that logically sequences the claim(s), counterclaims, reasons, and evidence.

		9-10.WHST.1.a Introduce precise claim(s), distinguish the	9-10.WHST.1.a Introduce precise claim(s), distinguish the	11-12.WHST.1.b Develop claim(s) and counterclaims fairly	11-12.WHST.1.b Develop claim(s) and counterclaims fairly
		claim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an	and thoroughly, supplying the most relevant data and	and thoroughly, supplying the most relevant data and
		organization that establishes clear relationships among the	organization that establishes clear relationships among the	evidence for each while pointing out the strengths and	evidence for each while pointing out the strengths and
		claim(s), counterclaims, reasons, and evidence.	claim(s), counterclaims, reasons, and evidence.	limitations of both claim(s) and counterclaims in a discipline-	limitations of both claim(s) and counterclaims in a discipline-
				appropriate form that anticipates the audience's knowledge	appropriate form that anticipates the audience's knowledge
				level, concerns, values, and possible biases.	level, concerns, values, and possible biases.
		9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	11-12.WHST.1.c Use words, phrases, and clauses as well as	11-12.WHST.1.c Use words, phrases, and clauses as well as
		supplying data and evidence for each while pointing out the	supplying data and evidence for each while pointing out the	varied syntax to link the major sections of the text, create	varied syntax to link the major sections of the text, create
		strengths and limitations of both claim(s) and counterclaims in	strengths and limitations of both claim(s) and counterclaims in	cohesion, and clarify the relationships between claim(s) and	cohesion, and clarify the relationships between claim(s) and
		a discipline-appropriate form and in a manner that anticipates	a discipline-appropriate form and in a manner that anticipates	reasons, between reasons and evidence, and between claim(s)	reasons, between reasons and evidence, and between claim(s)
		the audience's knowledge level and concerns.	the audience's knowledge level and concerns.	and counterclaims.	and counterclaims.
		9-10.WHST.1.c Use words, phrases, and clauses to link the	9-10.WHST.1.c Use words, phrases, and clauses to link the	11-12.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.e Provide a concluding statement or section
		major sections of the text, create cohesion, and clarify the	major sections of the text, create cohesion, and clarify the	that follows from or supports the argument presented.	that follows from or supports the argument presented.
		relationships between claim(s) and reasons, between reasons	relationships between claim(s) and reasons, between reasons		
		and evidence, and between claim(s) and counterclaims.	and evidence, and between claim(s) and counterclaims.		
		9-10.WHST.1.e Provide a concluding statement or section	9-10.WHST.1.e Provide a concluding statement or section	11-12.WHST.2 Write informative/explanatory texts,	11-12.WHST.2 Write informative/explanatory texts,
		that follows from or supports the argument presented.	that follows from or supports the argument presented.	including the narration of historical events, scientific	including the narration of historical events, scientific
				procedures/ experiments, or technical processes.	procedures/ experiments, or technical processes.
		9-10.WHST.2 Write informative/explanatory texts, including	-		11-12.WHST.2.a Introduce a topic and organize complex
		the narration of historical events, scientific procedures/	the narration of historical events, scientific procedures/	ideas, concepts, and information so that each new element	ideas, concepts, and information so that each new element
		experiments, or technical processes.	experiments, or technical processes.	builds on that which precedes it to create a unified whole;	builds on that which precedes it to create a unified whole;
				include formatting (e.g., headings), graphics (e.g., figures,	include formatting (e.g., headings), graphics (e.g., figures,
				tables), and multimedia when useful to aiding comprehension.	tables), and multimedia when useful to aiding comprehension.
			0.40.4445		
			9-10.WHST.2.a Introduce a topic and organize ideas,		11-12.WHST.2.b Develop the topic thoroughly by selecting
			concepts, and information to make important connections and		the most significant and relevant facts, extended definitions,
		distinctions; include formatting (e.g., headings), graphics (e.g.,	distinctions; include formatting (e.g., headings), graphics (e.g.,	concrete details, quotations, or other information and	concrete details, quotations, or other information and
		figures, tables), and multimedia when useful to aiding	figures, tables), and multimedia when useful to aiding		examples appropriate to the audience's knowledge of the
		comprehension.	comprehension.	topic.	topic.
		9-10.WHST.2.b Develop the topic with well-chosen,	9-10.WHST.2.b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete	11-12.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.c Use varied transitions and sentence
		relevant, and sufficient facts, extended definitions, concrete	details, quotations, or other information and examples	structures to link the major sections of the text, create	structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas
		details, quotations, or other information and examples		cohesion, and clarify the relationships among complex ideas	, , , , , , , , , , , , , , , , , , , ,
		appropriate to the audience's knowledge of the topic.	appropriate to the audience's knowledge of the topic.	and concepts.	and concepts.
			9-10.WHST.2.c Use varied transitions and sentence	11-12.WHST.2.d Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and	11-12.WHST.2.d Use precise language, domain-specific
		structures to link the major sections of the text, create	structures to link the major sections of the text, create		vocabulary and techniques such as metaphor, simile, and
		cohesion, and clarify the relationships among ideas and concepts.	cohesion, and clarify the relationships among ideas and concepts.	analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline	analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline
		concepts.	сопсерьз.	and context as well as to the expertise of likely readers.	and context as well as to the expertise of likely readers.
				and context as well as to the expertise of likely readers.	and context as well as to the experiese of linely readers.
		9-10.WHST.2.f Provide a concluding statement or section	9-10.WHST.2.f Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section	11-12.WHST.2.e Provide a concluding statement or section
		that follows from and supports the information or explanation	that follows from and supports the information or explanation	that follows from and supports the information or explanation	that follows from and supports the information or explanation
		presented (e.g., articulating implications or the significance of	presented (e.g., articulating implications or the significance of	provided (e.g., articulating implications or the significance of	provided (e.g., articulating implications or the significance of
		the topic).	the topic).	the topic).	the topic).
		9-10.WHST.3 Narrative writing is not applicable as a	9-10.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a	11-12.WHST.3 Narrative writing is not applicable as a
		separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and	separate requirement for history, social studies, science, and
		technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow	technical subjects. Students' narrative skills continue to grow
		in these grades. The Standards require that students be able	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able	in these grades. The Standards require that students be able
		to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments	to incorporate narrative elements effectively into arguments
		and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,	and informative/ explanatory texts. In history/social studies,
		students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into	students must be able to incorporate narrative accounts into
		their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In	their analyses of individuals or events of historical import. In
		science and technical subjects, students must be able to write	science and technical subjects, students must be able to write	science and technical subjects, students must be able to write	science and technical subjects, students must be able to write
		precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures	precise enough descriptions of the step-by-step procedures
		they use in their investigations or technical work that others	they use in their investigations or technical work that others	they use in their investigations or technical work that others	they use in their investigations or technical work that others
		can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.	can replicate them and (possibly) reach the same results.
		O 40 MUST 4 Decidera class a 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	O 40 MUST 4 Produce sleep 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	44 42 MUST 4 Bendung slave	44 42 MUST 4 Decision decay 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		9-10.WHST.4 Produce clear and coherent writing in which	9-10.WHST.4 Produce clear and coherent writing in which	_	11-12.WHST.4 Produce clear and coherent writing in which
		the development, organization, and style are appropriate to task, purpose, and audience.	the development, organization, and style are appropriate to task, purpose, and audience.	the development, organization, and style are appropriate to task, purpose, and audience.	the development, organization, and style are appropriate to task, purpose, and audience.
Synaptic Transmission -	ND	ND.1 Unifying Concepts: Students understand the unifying	ND.1 Unifying Concepts: Students understand the unifying		ND.1 Unifying Concepts: Students understand the unifying
.,		concepts and processes of science.	concepts and processes of science.	concepts and processes of science.	concepts and processes of science.
			9-10.1.1 Models: Explain how models can be used to		11-12.1.1 Models: Explain how scientists create and use
		illustrate scientific principles	illustrate scientific principles	Models to address scientific knowledge	Models to address scientific knowledge
			9-10.1.3 Constancy and Change: Explain how a system can		11-12.1.2 Systems: Identify the structure, organization, and
		be dynamic yet may remain in equilibrium (e.g., water cycle,	be dynamic yet may remain in equilibrium (e.g., water cycle,	dynamics of components within a system (e.g., cells, tissues,	dynamics of components within a system (e.g., cells, tissues,
		rock cycle, population)	rock cycle, population)	1	organs, organ systems, reactants and products in chemical
				equilibrium)	equilibrium)
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D.2 Science Inquiry: Students use the process of science inquiry. -10.2.3 Abilities Necessary To Do Scientific Inquiry: Identify uestions and concepts that guide scientific investigations -10.2.4 Abilities Necessary To Do Scientific Inquiry: ormulate a testable hypothesis for a simple investigation -10.2.6 Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation -10.2.7 Abilities Necessary To Do Scientific Inquiry: Raintain clear and accurate records of scientific investigations D.4 Life Science: Students understand the basic concepts and principles of life science. -10.4.1 Structure and Function: Relate cell function to cell tructure (i.e., cell wall, cell membrane, nucleus,	questions and concepts that guide scientific investigations 9-10.2.4 Abilities Necessary To Do Scientific Inquiry: Formulate a testable hypothesis for a simple investigation 9-10.2.6 Abilities Necessary To Do Scientific Inquiry: Design and conduct a guided investigation 9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems) 11-12.1.4 Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics) ND.2 Science Inquiry: Students use the process of science inquiry. 11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	11-12.1.3 Constancy and Change: Explain how a system can be dynamic yet may remain in equilibrium (e.g., balance of forces, Le Chatelier's Principle, acid base systems) 11-12.1.4 Form and Function: Explain the relationship between form and function (e.g., atoms and ions, enzymes, aerodynamics) ND.2 Science Inquiry: Students use the process of science inquiry. 11-12.2.3 Abilities Necessary To Do Scientific Inquiry: Use data from scientific investigations to accept or reject a hypothesis
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nd conduct a guided investigation -10.2.7 Abilities Necessary To Do Scientific Inquiry: flaintain clear and accurate records of scientific investigations ID.4 Life Science: Students understand the basic concepts nd principles of life science. -10.4.1 Structure and Function: Relate cell function to cell	and conduct a guided investigation 9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	data from scientific investigations to accept or reject a hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	data from scientific investigations to accept or reject a
-10.2.7 Abilities Necessary To Do Scientific Inquiry: laintain clear and accurate records of scientific investigations ID.4 Life Science: Students understand the basic concepts nd principles of life science. -10.4.1 Structure and Function: Relate cell function to cell	9-10.2.7 Abilities Necessary To Do Scientific Inquiry: Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	hypothesis 11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	
Naintain clear and accurate records of scientific investigations D.4 Life Science: Students understand the basic concepts nd principles of life science. -10.4.1 Structure and Function: Relate cell function to cell	Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:	hypothesis
Naintain clear and accurate records of scientific investigations D.4 Life Science: Students understand the basic concepts nd principles of life science. -10.4.1 Structure and Function: Relate cell function to cell	Maintain clear and accurate records of scientific investigations ND.4 Life Science: Students understand the basic concepts	The state of the s	
D.4 Life Science: Students understand the basic concepts nd principles of life science10.4.1 Structure and Function: Relate cell function to cell	ND.4 Life Science: Students understand the basic concepts	Formulate and revise explanations based upon scientific	11-12.2.4 Abilities Necessary To Do Scientific Inquiry:
nd principles of life science. -10.4.1 Structure and Function: Relate cell function to cell	-		Formulate and revise explanations based upon scientific
nd principles of life science. -10.4.1 Structure and Function: Relate cell function to cell	-	knowledge and experimental data	knowledge and experimental data
-10.4.1 Structure and Function: Relate cell function to cell		11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design	11-12.2.7 Abilities Necessary To Do Scientific Inquiry: Design
	and principles of life science.	and conduct an independent investigation	and conduct an independent investigation
ructure (i.e., cell wall, cell membrane, nucleus,	9-10.4.1 Structure and Function: Relate cell function to cell	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:	11-12.2.8 Abilities Necessary To Do Scientific Inquiry:
9 1 12 11 1 10	structure (i.e., cell wall, cell membrane, nucleus,	Communicate and defend a scientific argument	Communicate and defend a scientific argument
nitochondria, chloroplast)	mitochondria, chloroplast)	ND 9 History and Nature of Colones Students understand	ND 9 History and Natura of Sciences Students understand
n multi-cellular organisms to their cell type (e.g., nerve cells,	9-10.4.2 Structure and Function: Relate the functions of cells in multi-cellular organisms to their cell type (e.g., nerve cells,	the history and nature of science.	ND.8 History and Nature of Science: Students understand the history and nature of science.
lood cells, guard cells)	blood cells, guard cells)	the history and hattire of science.	the history and nature of science.
-10.4.3 Structure and Function: Explain the relationship	9-10.4.3 Structure and Function: Explain the relationship	11-12.8.1 Scientific Knowledge: Identify the criteria that	11-12.8.1 Scientific Knowledge: Identify the criteria that
etween protein structure and function	between protein structure and function	scientific explanations must meet to be considered valid (e.g.,	scientific explanations must meet to be considered valid (e.g.,
		must be based on consistent and repeatable data, be	must be based on consistent and repeatable data, be
		consistent with experimental and observational evidence	consistent with experimental and observational evidence
		about nature, make accurate predictions about systems being	about nature, make accurate predictions about systems being
		studied, be logical, report methods and results, be open to	studied, be logical, report methods and results, be open to
		question and reexamination, respect rules of evidence)	question and reexamination, respect rules of evidence)
-	-		ND.CC.11-12.RST Reading Standards for Information Literacy
Science and Technical Subjects	in Science and Technical Subjects	in Science and Technical Subjects	in Science and Technical Subjects
Key Ideas and Details	- Key Ideas and Details	- Key Ideas and Details	- Key Ideas and Details
-10.RST.1 Cite specific textual evidence to support analysis		1	11-12.RST.1 Cite specific textual evidence to support
f science and technical texts, attending to the precise details			analysis of science and technical texts, attending to important
f explanations or descriptions.	of explanations or descriptions.	distinctions the author makes and to any gaps or	distinctions the author makes and to any gaps or
10 BST F Analyze the structure of the relationships among	9-10.RST.5 Analyze the structure of the relationships among	inconsistencies in the account. 11-12.RST.5 Analyze how the text structures information or	inconsistencies in the account. 11-12.RST.5 Analyze how the text structures information or
oncepts in a text, including relationships among key terms	concepts in a text, including relationships among key terms	ideas into categories or hierarchies, demonstrating	ideas into categories or hierarchies, demonstrating
e.g., force, friction, reaction force, energy).	(e.g., force, friction, reaction force, energy).	understanding of the information or ideas.	understanding of the information or ideas.
-10.RST.10 By the end of grade 10, read and comprehend	9-10.RST.10 By the end of grade 10, read and comprehend	11-12.RST.9 Synthesize information from a range of sources	11-12.RST.9 Synthesize information from a range of sources
cience/technical texts in the grades 9-10 text complexity	science/technical texts in the grades 9-10 text complexity	(e.g., texts, experiments, simulations) into a coherent	(e.g., texts, experiments, simulations) into a coherent
and independently and proficiently.	band independently and proficiently.	understanding of a process, phenomenon, or concept,	understanding of a process, phenomenon, or concept,
		resolving conflicting information when possible.	resolving conflicting information when possible.
D.CC.9-10.WHST Writing Standards for Literacy in	ND.CC.9-10.WHST Writing Standards for Literacy in	11-12.RST.10 By the end of grade 12, read and comprehend	11-12.RST.10 By the end of grade 12, read and comprehend
istory/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects	science/technical texts in the grades 11-12 text complexity	science/technical texts in the grades 11-12 text complexity
		band independently and proficiently.	band independently and proficiently.
-10.WHST.1 Write arguments focused on discipline-specific	9-10.WHST.1 Write arguments focused on discipline-specific	ND.CC.11-12.WHST Writing Standards for Literacy in	ND.CC.11-12.WHST Writing Standards for Literacy in
ontent.	content.	History/Social Studies, Science, and Technical Subjects	History/Social Studies, Science, and Technical Subjects
-10.WHST.1.a Introduce precise claim(s), distinguish the	9-10.WHST.1.a Introduce precise claim(s), distinguish the	11-12.WHST.1 Write arguments focused on discipline-	11-12.WHST.1 Write arguments focused on discipline-
aim(s) from alternate or opposing claims, and create an	claim(s) from alternate or opposing claims, and create an	specific content.	specific content.
rganization that establishes clear relationships among the	organization that establishes clear relationships among the		
laim(s), counterclaims, reasons, and evidence.	claim(s), counterclaims, reasons, and evidence.		
-10.WHST.1.b Develop claim(s) and counterclaims fairly,	9-10.WHST.1.b Develop claim(s) and counterclaims fairly,	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),	11-12.WHST.1.a Introduce precise, knowledgeable claim(s),
upplying data and evidence for each while pointing out the	supplying data and evidence for each while pointing out the	establish the significance of the claim(s), distinguish the	establish the significance of the claim(s), distinguish the
trengths and limitations of both claim(s) and counterclaims in	_ ·		claim(s) from alternate or opposing claims, and create an
oiscipiine-appropriate form and in a manner that anticipates ne audience's knowledge level and concerns.	a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.	organization that logically sequences the claim(s), counterclaims, reasons, and evidence.	organization that logically sequences the claim(s),
9	· ·	11-12.WHST.1.b Develop claim(s) and counterclaims fairly	counterclaims, reasons, and evidence.
-10.WHST.1.c Use words, phrases, and clauses to link the najor sections of the text, create cohesion, and clarify the	9-10.WHST.1.c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the	and thoroughly, supplying the most relevant data and	11-12.WHST.1.b Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and
elationships between claim(s) and reasons, between reasons	relationships between claim(s) and reasons, between reasons	evidence for each while pointing out the strengths and	evidence for each while pointing out the strengths and
nd evidence, and between claim(s) and reasons, between reasons nd evidence, and between claim(s) and counterclaims.	and evidence, and between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.	limitations of both claim(s) and counterclaims in a discipline-	limitations of both claim(s) and counterclaims in a discipline-
to endence, and between claim(s) and counterclaims.	and endence, and between dainings) and counterclaints.	appropriate form that anticipates the audience's knowledge	appropriate form that anticipates the audience's knowledge
		level, concerns, values, and possible biases.	level, concerns, values, and possible biases.
-10.WHST.1.e Provide a concluding statement or section	9-10.WHST.1.e Provide a concluding statement or section	11-12.WHST.1.c Use words, phrases, and clauses as well as	11-12.WHST.1.c Use words, phrases, and clauses as well as
nat follows from or supports the argument presented.	that follows from or supports the argument presented.	varied syntax to link the major sections of the text, create	varied syntax to link the major sections of the text, create
		cohesion, and clarify the relationships between claim(s) and	cohesion, and clarify the relationships between claim(s) and
		reasons, between reasons and evidence, and between claim(s)	reasons, between reasons and evidence, and between claim(s)
		and counterclaims.	and counterclaims.

9-10.WHST.2. - Write informative/explanatory texts, including 9-10.WHST.2. - Write informative/explanatory texts, including 11-12.WHST.1.e. - Provide a concluding statement or section 11-12.WHST.1.e. - Provide a concluding statement or section the narration of historical events, scientific procedures/ the narration of historical events, scientific procedures/ that follows from or supports the argument presented. that follows from or supports the argument presented. experiments, or technical processes. experiments, or technical processes. 9-10.WHST.2.a. - Introduce a topic and organize ideas, 9-10.WHST.2.a. - Introduce a topic and organize ideas, 11-12.WHST.2. - Write informative/explanatory texts, 11-12.WHST.2. - Write informative/explanatory texts, concepts, and information to make important connections and concepts, and information to make important connections and including the narration of historical events, scientific including the narration of historical events, scientific distinctions; include formatting (e.g., headings), graphics (e.g., distinctions; include formatting (e.g., headings), graphics (e.g., procedures/ experiments, or technical processes. procedures/ experiments, or technical processes. figures, tables), and multimedia when useful to aiding figures, tables), and multimedia when useful to aiding comprehension 9-10.WHST.2.b. - Develop the topic with well-chosen. 9-10.WHST.2.b. - Develop the topic with well-chosen. 11-12.WHST.2.a. - Introduce a topic and organize complex 11-12.WHST.2.a. - Introduce a topic and organize complex relevant, and sufficient facts, extended definitions, concrete relevant, and sufficient facts, extended definitions, concrete ideas, concepts, and information so that each new element ideas, concepts, and information so that each new element details, quotations, or other information and examples details, quotations, or other information and examples builds on that which precedes it to create a unified whole; builds on that which precedes it to create a unified whole; appropriate to the audience's knowledge of the topic. appropriate to the audience's knowledge of the topic. include formatting (e.g., headings), graphics (e.g., figures, include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. Itables), and multimedia when useful to aiding comprehension 9-10.WHST.2.c. - Use varied transitions and sentence 9-10.WHST.2.c. - Use varied transitions and sentence 11-12.WHST.2.b. - Develop the topic thoroughly by selecting 11-12.WHST.2.b. - Develop the topic thoroughly by selecting structures to link the major sections of the text, create structures to link the major sections of the text, create the most significant and relevant facts, extended definitions. the most significant and relevant facts, extended definitions cohesion, and clarify the relationships among ideas and cohesion, and clarify the relationships among ideas and concrete details, quotations, or other information and concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the examples appropriate to the audience's knowledge of the 11-12.WHST.2.c. - Use varied transitions and sentence 9-10.WHST.2.f. - Provide a concluding statement or section 9-10.WHST.2.f. - Provide a concluding statement or section 11-12 WHST 2 c - Use varied transitions and sentence that follows from and supports the information or explanation that follows from and supports the information or explanation structures to link the major sections of the text, create structures to link the major sections of the text, create presented (e.g., articulating implications or the significance of presented (e.g., articulating implications or the significance of cohesion, and clarify the relationships among complex ideas cohesion, and clarify the relationships among complex ideas the topic) 9-10.WHST.3. - Narrative writing is not applicable as a 9-10.WHST.3. - Narrative writing is not applicable as a 11-12.WHST.2.d. - Use precise language, domain-specific 11-12.WHST.2.d. - Use precise language, domain-specific separate requirement for history, social studies, science, and separate requirement for history, social studies, science, and vocabulary and techniques such as metaphor, simile, and vocabulary and techniques such as metaphor, simile, and technical subjects. Students' narrative skills continue to grow technical subjects. Students' narrative skills continue to grow analogy to manage the complexity of the topic; convey a analogy to manage the complexity of the topic; convey a in these grades. The Standards require that students be able in these grades. The Standards require that students be able knowledgeable stance in a style that responds to the discipline knowledgeable stance in a style that responds to the discipline to incorporate narrative elements effectively into arguments to incorporate narrative elements effectively into arguments and context as well as to the expertise of likely readers. and context as well as to the expertise of likely readers. and informative/ explanatory texts. In history/social studies, and informative/ explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. can replicate them and (possibly) reach the same results. 9-10.WHST.4. - Produce clear and coherent writing in which 9-10.WHST.4. - Produce clear and coherent writing in which 11-12.WHST.2.e. - Provide a concluding statement or section 11-12.WHST.2.e. - Provide a concluding statement or section the development, organization, and style are appropriate to the development, organization, and style are appropriate to that follows from and supports the information or explanation that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of provided (e.g., articulating implications or the significance of task, purpose, and audience. task, purpose, and audience. the tonic) 11-12.WHST.3. - Narrative writing is not applicable as a 11-12.WHST.3. - Narrative writing is not applicable as a separate requirement for history, social studies, science, and separate requirement for history, social studies, science, and technical subjects. Students' narrative skills continue to grow technical subjects. Students' narrative skills continue to grow in these grades. The Standards require that students be able in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/social studies. and informative/explanatory texts. In history/social studies. students must be able to incorporate narrative accounts into students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures precise enough descriptions of the step-by-step procedures

they use in their investigations or technical work that others

11-12.WHST.4. - Produce clear and coherent writing in which

the development, organization, and style are appropriate to

task, purpose, and audience

can replicate them and (possibly) reach the same results.

they use in their investigations or technical work that others

11-12.WHST.4. - Produce clear and coherent writing in which

the development, organization, and style are appropriate to

task, purpose, and audience

can replicate them and (possibly) reach the same results.

