Note: when selecting a correlation link you must be signed-in to Essential Physics.

Standard	Description	Correlation	Type
NGSS-HS-CC	Crosscutting Concepts		
NGSS-HS-CC-1	Patterns.		
NGSS-HS-CC-1-1	Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations of phenomena.	p. 44 p. 44 (2) p. 44 (3) p. 777 p. 778 p. 47 p. 787 p. 47 p. 787	SB Content SB Content SB Content SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-CC-2	Cause and Effect: Mechanism and Explanation.		
NGSS-HS-CC-2-1	Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.	p. 723 p. 724 p. 724 (2)	SB Content SB Content SB Content
NGSS-HS-CC-2-2	Systems can be designed to cause a desired effect.	p. 312 p. 462 p. 586	SB Content SB Content SB Content
NGSS-HS-CC-2-3	Cause and effect relationships can be suggested and predicted for compex natural and human designed systems by examining what is known about smaller scale mechanisms within the system.	p. 13 p. 14 p. 352 p. 724	SB Content SB Content SB Content SB Content
NGSS-HS-CC-3	Systems and System Models.		
NGSS-HS-CC-3-1	When investigating or describing a system, the boundaries and initial conditions of the system need to be defined and their inputs and outputs analyzed and described using models.		
NGSS-HS-CC-3-1-1	When investigating or describing a system, the boundaries and initial conditions of the system need to be defined.	p. 371 p. 397 p. 421 p. 421 (2)	SB Content SB Content SB Content SB Content
NGSS-HS-CC-3-1-2	When investigating or describing a system, the inputs and outputs of the system need to be analyzed and described using models.	p. 748	SB Content
	Models can be used to predict the behavior of a system, but these	p. 85	SB Content

NGSS-HS-CC-3-2	predictions have limited precision and reliability due to the assumptions and approximations inherent in models.	p. 157 p. 296	SB Content SB Content
NGSS-HS-CC-3-3	Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions--including energy, matter, and information flows--within and between systems at different scales.	p. 29 p. 86 p. 114 p. 221 p. 294 p. 294 (2) p. 357	SB Content SB Content SB Content SB Content SB Content SB Content SB Content
NGSS-HS-CC-4	Energy and Matter: Flows, Cycles, and Conservation.		
NGSS-HS-CC-4-1	In nuclear processes, atoms are not conserved, but the total number of protons plus neutrons is conserved.	p. 808 p. 809 p. 809 (2) p. 812 p. 812 (2) p. 812 (3) p. 812 (4)	SB Content SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-CC-4-2	Changes of energy and matter in a system can be described in terms of energy and matter [that] flows into, out of, and within that system.	p. 280 p. 286 p. 292 p. 708 p. 734 p. 739 p. 739 (2)	SB Content SB Content SB Content SB Content SB Content SB Assess TE Assess
NGSS-HS-CC-4-3	Energy cannot be created or destroyed--[it] only moves between one place and another place, between objects and/or fields, or between systems.	p. 280 p. 281 p. 292 p. 539	SB Content SB Content SB Content SB Content
NGSS-HS-CC-5	Stability and Change.		
NGSS-HS-CC-5-1	Systems can be designed for greater or lesser stability.	p. 209 p. 391 p. 391 (2)	SB Content SB Content SB Content
NGSS-HS-DCI	Disciplinary Core Ideas		
NGSS-HS-DCI-PS1.C	Nuclear Processes		
NGSS-HS-DCI-PS1.C-1	Nuclear processes, including fusion, fission, and radioactive decays of unstable nuclei, involve release or absorption of energy. The total number of neutrons plus protons does not change in any nuclear process.	N/A	
NGSS-HS-DCI-PS1.C-1-1	The nuclear process of fusion can involve the release or absorption of energy.	p. 809 p. 811 p. 812 p. 812 (2)	SB Content SB Content SB Assess TE Assess
NGSS-HS-DCI-PS1.C-1-2	The nuclear process of fission can involve the release or absorption of energy.	p. 810 p. 810 (2) p. 812 p. 812 (2)	SB Content SB Content SB Assess TE Assess
		p. 802	SB Content

NGSS-HS-DCI-PS1.C-1-3	The nuclear process of radioactive decay can involve the release or absorption of energy.	p. 802 (2) p. 803 p. 803 (2) p. 807 p. 807 (2)	SB Content SB Content SB Content SB Assess TE Assess
NGSS-HS-DCI-PS1.C-1-4	The total number of neutrons plus protons does not change in any nuclear process.	p. 808 p. 808 (2) p. 812 p. 812 (2)	SB Content SB Content SB Assess TE Assess
NGSS-HS-DCI-PS2.A	Forces and Motion		
NGSS-HS-DCI-PS2.A-1	Newton's second law accurately predicts changes in the motion of macroscopic objects.	N/A	
NGSS-HS-DCI-PS2.A-1-1	Newton's second law relates the acceleration of an object to its mass and the net force on it.	p. 143 p. 144 p. 164 p. 164 (2) p. 164 (3) p. 231 p. 164 p. 164 (2) p. 164 (3) p. 231	SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.A-1-2	Newton's second law accurately predicts changes in the motion of macroscopic objects.	p. 143 p. 210 p. 211	SB Content SB Content SB Content
NGSS-HS-DCI-PS2.A-2	Momentum is defined for a particular frame of reference; it is the mass times the velocity of the object.	N/A	
NGSS-HS-DCI-PS2.A-2-1	Momentum is mass times the velocity of the object.	p. 308 p. 309 p. 309 (2) p. 329 p. 329 (2) p. 329 (3) p. 329 (4) p. 329 (5) p. 329 (6)	SB Content SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.A-2-2	Momentum is defined for a particular frame of reference.	p. 87 p. 87 (2) p. 308 p. 314 p. 329 p. 314 p. 329	SB Content SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.A-3	If a system interacts with objects outside itself, the total momentum of the system can change; however, any such change is balanced by changes in the momentum of objects outside the system.	p. 310 p. 320 p. 319 p. 330 p. 319 p. 330	SB Content SB Content SB Assess SB Assess TE Assess TE Assess

NGSS-HS-DCI-PS2.B	Types of Interactions		
NGSS-HS-DCI-PS2.B-1	Newton's law of universal gravitation and Coulomb's law provide the mathematical models to describe and predict the effects of gravitational and electrostatic forces between distant objects.		
NGSS-HS-DCI-PS2.B-1-1	Newton's law of universal gravitation provides the mathematical model to describe and predict the effects of the gravitational force between distant objects.	p. 216 p. 216 (2) p. 218 p. 228 p. 228 (2) p. 232 p. 228 p. 228 (2) p. 232	SB Content SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.B-1-2	Coulomb's law provides the mathematical model to describe and predict the effects of the electrostatic force between distant objects.	p. 528 p. 528 (2) p. 548 p. 548 (2) p. 548 (3) p. 548 (4) p. 548 (5) p. 548 (6)	SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.B-2	Forces at a distance are explained by fields (gravitational, electric, and magnetic) permeating space that can transfer energy through space. Magnets or electric currents cause magnetic fields; electric charges or changing magnetic fields cause electric fields.		
NGSS-HS-DCI-PS2.B-2-1	Forces at a distance are explained by fields (gravitational, electric, and magnetic) permeating space that can transfer energy through space.	p. 517 p. 530 p. 531 p. 552 p. 636 p. 522 p. 576 p. 579 p. 522 p. 576 p. 579	SB Content SB Content SB Content SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.B-2-2	Magnets create magnetic fields.	p. 518 p. 518 (2) p. 519 p. 520 p. 522 p. 522 (2)	SB Content SB Content SB Content SB Content SB Assess TE Assess
NGSS-HS-DCI-PS2.B-2-3	Electric currents create magnetic fields.	p. 552 p. 553 p. 553 (2) p. 554 p. 579 p. 576 p. 579 p. 576 p. 579 p. 579 (2)	SB Content SB Content SB Content SB Content SB Content SB Assess SB Assess TE Assess TE Assess TE Assess
		p. 530	SB Content

NGSS-HS-DCI-PS2.B-2-4	Electric charges create electric fields.	p. 531 p. 547 p. 549 p. 547 p. 549	SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-DCI-PS2.B-2-5	Changing magnetic fields create electric fields.	p. 561 p. 562 p. 636 p. 578 p. 640 p. 578 p. 640	SB Content SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-DCI-PS3.A	Definitions of Energy		
NGSS-HS-DCI-PS3.A-1	Energy is a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system. That there is a single quantity called energy is due to the fact that a system's total energy is conserved, even as, within the system, energy is continually transferred from one object to another and between its various possible forms.		
NGSS-HS-DCI-PS3.A-1-1	Energy is a quantitative property of a system that depends on the motion of matter within that system.	p. 258 p. 258 (2) p. 378 p. 394 p. 668	SB Content SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-1-2	Energy is a quantitative property of a system that depends on the interactions of matter within that system.	p. 323 p. 394 p. 397	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-1-3	Energy is a quantitative property of a system that depends on the radiation within that system.	p. 708 p. 767 p. 768 p. 803	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-1-4	A system's total energy is conserved.	p. 281 p. 281 (2) p. 283 p. 285 p. 402 p. 303 p. 303 (2)	SB Content SB Content SB Content SB Content SB Content SB Assess TE Assess
NGSS-HS-DCI-PS3.A-1-5	Energy can be continually transferred from one object to another and between its various possible forms within a system.	p. 394 p. 402 p. 736	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-2	At the macroscopic scale, energy manifests itself in multiple ways, such as in motion, sound, light, and thermal energy.	p. 256 p. 264 p. 416 p. 673	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-3	These relationships are better understood at the microscopic scale, at which all of the different manifestations of energy can be modeled as a combination of energy associated with the motion of particles and energy associated with the configuration (relative position of the particles). In some cases the relative position energy can be thought of as stored in fields (which mediate interactions between particles). This last concept includes radiation, a phenomenon in which energy stored in fields moves across space.		

		p. 668	SB Content
NGSS-HS-DCI-PS3.A-3-1	At the microscopic scale, all of the different manifestations of energy can be modeled as a combination of energy associated with the motion of particles and energy associated with the configuration (relative position of the particles).	p. 670 p. 685 p. 765 p. 767 p. 798	SB Content SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-3-2	In some cases the relative position energy can be thought of as stored in fields (which mediate interactions between particles).	p. 517 p. 517 (2) p. 539	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-3-3	Radiation is a phenomenon in which energy stored in fields moves across space.	p. 636 p. 653 p. 659	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-4	"Electrical energy" may mean energy stored in a battery or energy transmitted by electric currents.		
NGSS-HS-DCI-PS3.A-4-1	"Electrical energy" may mean energy stored in a battery.	p. 266 p. 479 p. 479 (2)	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.A-4-2	"Electrical energy" may mean energy transmitted by electric currents.	p. 266 p. 474 p. 474 (2) p. 479	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B	Conservation of Energy and Energy Transfer		
NGSS-HS-DCI-PS3.B-1	Conservation of energy means that the total change of energy in any system is always equal to the total energy transferred into or out of the system.	p. 289 p. 292 p. 734 p. 768 p. 798	SB Content SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B-2	Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems.	N/A	
NGSS-HS-DCI-PS3.B-2-1	Energy cannot be created or destroyed.	p. 254 p. 281 p. 286 p. 734	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B-2-2	Energy can be transported from one place to another.	p. 264 p. 474 p. 563 p. 705 p. 706	SB Content SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B-2-3	Energy can be transferred between systems.	p. 293 p. 563 p. 704	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B-3	Mathematical expressions, which quantify how the stored energy in a system depends on its configuration (e.g., relative positions of charged particles, compression of a spring) and how kinetic energy depends on mass and speed, allow the concept of conservation of energy to be used to predict and describe system behavior.		
		p. 259	SB Content

		p. 259	SB Content
NGSS-HS-DCI-PS3.B-3-1	A mathematical expression can quantify how the stored energy in a system depends on its configuration.	p. 261 p. 283 p. 539	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B-3-2	A mathematical expression can quantify how the kinetic energy in a system depends on mass and speed.	p. 258 p. 258 (2) p. 283 p. 263 p. 263 (2) p. 275 p. 275 (2) p. 263 p. 263 (2) p. 275 p. 275 (2)	SB Content SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-DCI-PS3.B-3-3	Mathematical expressions for the energy of a system allow the concept of conservation of energy to be used to predict and describe system behavior.	p. 283 p. 284 p. 323	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.B-4	The availability of energy limits what can occur in any system.	p. 286 p. 654	SB Content SB Content
NGSS-HS-DCI-PS3.B-5	Uncontrolled systems always evolve toward more stable states—that is, toward more uniform energy distribution (e.g., water flows downhill, objects hotter than their surrounding environment cool down).	p. 391 p. 703 p. 735	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.C	Relationship Between Energy and Forces		
NGSS-HS-DCI-PS3.C-1	When two objects interacting through a force field change relative position, the energy stored in the force field is changed.	p. 517 p. 539 p. 539 (2)	SB Content SB Content SB Content
NGSS-HS-DCI-PS3.D	Energy in Chemical Processes and Everyday Life		
NGSS-HS-DCI-PS3.D-1	Solar cells are human-made devices that likewise capture the Sun's energy and produce electrical energy.	p. 27 p. 27 (2) p. 28 p. 29	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.A	Wave Properties		
NGSS-HS-DCI-PS4.A-1	The wavelength and frequency of a wave are related to one another by the speed of travel of the wave, which depends on the type of wave and the medium through which it is passing.		
NGSS-HS-DCI-PS4.A-1-1	The wavelength and frequency of a wave are related to one another by the speed of travel of the wave.	p. 415 p. 447 p. 637	SB Content SB Content SB Content
NGSS-HS-DCI-PS4.A-1-2	The speed of travel of a wave depends on the type of wave.	p. 415 p. 447 p. 637	SB Content SB Content SB Content
NGSS-HS-DCI-PS4.A-1-3	The speed of travel of a wave depends on the medium through which it is passing.	p. 423 p. 637 p. 642	SB Content SB Content SB Content
	Information can be digitized (e.g., a picture stored as the values of an array of pixels); in this form, it		

NGSS-HS-DCI-PS4.A-2	can be stored reliably in computer memory and sent over long distances as a series of wave pulses.		
NGSS-HS-DCI-PS4.A-2-1	Information can be digitized.	p. 24 p. 656 p. 659	SB Content SB Content SB Content
NGSS-HS-DCI-PS4.A-2-2	Digitized information can be stored reliably in computer memory.	p. 24 p. 656 p. 659	SB Content SB Content SB Content
NGSS-HS-DCI-PS4.A-2-3	Digitized information can be sent over long distances as a series of wave pulses.	p. 433 p. 659	SB Content SB Content
NGSS-HS-DCI-PS4.A-3	Waves can add or cancel one another as they cross, depending on their relative phase (i.e., relative position of peaks and troughs of the waves), but they emerge unaffected by each other.		
NGSS-HS-DCI-PS4.A-3-1	Waves can add or cancel one another as they cross, depending on their relative phase (i.e., relative position of peaks and troughs of the waves).	p. 428 p. 458 p. 651	SB Content SB Content SB Content
NGSS-HS-DCI-PS4.A-3-2	Interacting waves emerge unaffected by each other.	p. 410 p. 428	SB Content SB Content
NGSS-HS-DCI-PS4.B	Electromagnetic Radiation		
NGSS-HS-DCI-PS4.B-1	Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave of changing electric and magnetic fields or as particles called photons.		
NGSS-HS-DCI-PS4.B-1-1	Electromagnetic radiation can be modeled as a wave of changing electric and magnetic fields.	p. 636 p. 636 (2) p. 648 p. 657	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.B-1-2	Electromagnetic radiation can be modeled as particles called photons.	p. 653 p. 654 p. 657 p. 768	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.B-2	The wave model is useful for explaining many features of electromagnetic radiation, and the particle model explains other features.		
NGSS-HS-DCI-PS4.B-2-1	The wave model of light is useful for explaining many features of electromagnetic radiation.	p. 648 p. 649 p. 651 p. 657	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.B-2-2	The particle model of light is useful for explaining many features of electromagnetic radiation.	p. 654 p. 657 p. 657 (2)	SB Content SB Content SB Content
NGSS-HS-DCI-PS4.B-3	When light or longer wavelength electromagnetic radiation is absorbed in matter, it is generally converted into thermal energy (heat).	p. 646 p. 706 p. 707 p. 720 p. 721 p. 723	SB Content SB Content SB Content SB Content SB Content SB Content
	Short wavelength electromagnetic radiation (ultraviolet, X-rays, gamma	p. 433	SB Content

NGSS-HS-DCI-PS4.B-4	rays) can ionize atoms and cause damage to living cells.	p. 646 p. 817	SB Content SB Content
NGSS-HS-DCI-PS4.B-5	Photoelectric materials emit electrons when they absorb light of a high-enough frequency.	p. 27 p. 654 p. 655 p. 656	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.C	Information Technologies and Instrumentation		
NGSS-HS-DCI-PS4.C-1	Multiple technologies based on the understanding of waves and their interactions with matter are part of everyday experiences in the modern world (e.g., medical imaging, communications, scanners) and in scientific research. They are essential tools for producing, transmitting, and capturing signals and for storing and interpreting the information contained in them.		
NGSS-HS-DCI-PS4.C-1-1	Technologies based on the understanding of waves and their interactions with matter are part of everyday experiences in the modern world (e.g., medical imaging, communications, scanners) and in scientific research.	p. 433 p. 433 (2) p. 445 p. 448	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.C-1-2	Technologies based on the understanding of waves and their interactions with matter are essential tools for producing, transmitting, and capturing signals.	p. 403 p. 624 p. 658 p. 658 (2)	SB Content SB Content SB Content SB Content
NGSS-HS-DCI-PS4.C-1-3	Technologies based on the understanding of waves and their interactions with matter are essential tools for storing and interpreting the information contained in them.	p. 22 p. 24 p. 451 p. 465	SB Content SB Content SB Content SB Content
NGSS-HS-ETS	Connections to Engineering, Technology, and Applications of Science		
NGSS-HS-ETS-1.A	Defining and Delimiting Engineering Problems		
NGSS-HS-ETS-1.A-1	Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them.	p. 20 p. 244 p. 248 p. 313 p. 313 (2) p. 814 p. 817	SB Content SB Content SB Content SB Content SB Content SB Content SB Content
NGSS-HS-ETS-CX1	Modern civilization depends on major technological systems. Engineers continuously modify these technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks.		
NGSS-HS-ETS-CX1-1-1	Modern civilization depends on major technological systems.	p. 271 p. 293 p. 555 p. 659	SB Content SB Content SB Content SB Content
NGSS-HS-ETS-CX1-1-2	Engineers continuously modify technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks.	p. 271 p. 306 p. 730 p. 740	SB Content SB Content SB Content SB Content
NGSS-HS-PS	High School Physics: Performance Expectations		

NGSS-HS-PS1	Matter and Its Interactions. Students who demonstrate understanding can:		
NGSS-HS-PS1-8	Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.	N/A	
NGSS-HS-PS1-8-1	Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the process of fission.	p. 812 p. 812 (2) p. 812 (3) p. 820 p. 812 p. 812 (2) p. 812 (3) p. 820	SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-PS1-8-2	Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the process of fusion.	p. 812 p. 812 (2) p. 820 p. 812 p. 812 (2) p. 820	SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
NGSS-HS-PS1-8-3	Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the process of radioactive decay.	p. 807 p. 807 (2) p. 807 (3) p. 807 (4) p. 812 p. 807 p. 807 (2) p. 807 (3) p. 807 (4) p. 812	SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-PS2	Motion and Stability: Forces and Interactions. Students who demonstrate understanding can:		
NGSS-HS-PS2-1	Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.	p. 146	SB Content
NGSS-HS-PS2-2	Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.	p. 327 p. 328 p. 329 p. 330 p. 330 (2) p. 327 p. 328 p. 329 p. 330 p. 330 (2)	SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-PS2-3	Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.	p. 312 p. 312 (2) p. 312 (3) p. 312 (4)	SB Content SB Content SB Content SB Content
NGSS-HS-PS2-4	Use mathematical representations of Newton's law of gravitation and Coulomb's law to describe and predict the gravitational and electrostatic forces between objects.	N/A	

NGSS-HS-PS2-4-1	Use mathematical representations of Newton's law of gravitation to describe and predict the gravitational force between objects.	p. 228 p. 228 (2) p. 230 p. 230 (2) p. 232 p. 232 (2) p. 546 p. 228 p. 228 (2) p. 230 p. 230 (2) p. 232 p. 232 (2) p. 546	SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-PS2-4-2	Use mathematical representations of Coulomb's law to describe and predict the electrostatic force between objects.	p. 529 p. 546 p. 546 (2) p. 546 (3) p. 548 p. 548 (2) p. 548 (3) p. 548 (4) p. 548 (5) p. 549 p. 529 p. 546 p. 546 (2) p. 546 (3) p. 548 p. 548 (2) p. 548 (3) p. 548 (4) p. 548 (5) p. 549	SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-PS2-5	Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.	N/A	
NGSS-HS-PS2-5-1	Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field.	p. 554 p. 554 (2) p. 559 p. 579 p. 559 p. 579	SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-PS2-5-2	Plan and conduct an investigation to provide evidence that a changing magnetic field can produce an electric current.	p. 556 p. 564 p. 564 (2)	SB Content SB Assess TE Assess
NGSS-HS-PS3	Energy: Students who demonstrate understanding can:		
NGSS-HS-PS3-1	Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.	p. 294 p. 297 p. 297 (2) p. 297 (3)	SB Content SB Content SB Content SB Content
		p. 285 p. 672	SB Content SB Content

		p. 543	SB Assess
		p. 545	SB Assess
NGSS-HS-PS3-2	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.	p. 545 (2)	SB Assess
		p. 695	SB Assess
		p. 543	TE Assess
		p. 545	TE Assess
		p. 545 (2)	TE Assess
		p. 695	TE Assess
NGSS-HS-PS3-3	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.	p. 480	SB Content
		p. 480 (2)	SB Content
		p. 480 (3)	SB Content
		p. 558	SB Content
		p. 558 (2)	SB Content
		p. 558 (3)	SB Content
NGSS-HS-PS3-4	Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	p. 675	SB Content
		p. 675 (2)	SB Content
		p. 717	SB Content
NGSS-HS-PS3-5	Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.	N/A	
NGSS-HS-PS3-5-1	Develop and use a model of two objects interacting through electric fields to illustrate the forces between objects due to the interaction.	p. 526	SB Content
		p. 526 (2)	SB Content
		p. 532	SB Content
		p. 536	SB Assess
		p. 548	SB Assess
		p. 548 (2)	SB Assess
		p. 549	SB Assess
		p. 536	TE Assess
		p. 548	TE Assess
		p. 548 (2)	TE Assess
		p. 549	TE Assess
NGSS-HS-PS3-5-2	Develop and use a model of two objects interacting through electric fields to illustrate the changes in energy of the objects due to the interaction.	p. 517	SB Content
		p. 526	SB Content
		p. 539	SB Content
		p. 539 (2)	SB Content
		p. 543	SB Assess
		p. 543 (2)	TE Assess
NGSS-HS-PS3-5-3	Develop and use a model of two objects interacting through magnetic fields to illustrate the forces between objects due to the interaction.	p. 516	SB Content
		p. 516 (2)	SB Content
		p. 520	SB Content
		p. 545	SB Assess
		p. 547	SB Assess
		p. 545	TE Assess
		p. 547	TE Assess
NGSS-HS-PS3-5-4	Develop and use a model of two objects interacting through magnetic fields to illustrate the changes in energy of the objects due to the interaction.	p. 512	SB Content
		p. 516	SB Content
		p. 517	SB Content
		p. 545	SB Assess
		p. 545 (2)	SB Assess
		p. 545 (3)	TE Assess
		p. 545 (4)	TE Assess

NGSS-HS-PS4	Waves and Their Applications in Technologies for Information Transfer. Students who demonstrate understanding can:		
NGSS-HS-PS4-1	Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.	p. 413 p. 443 p. 469 p. 640 p. 469 p. 640	SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-PS4-2	Evaluate questions about the advantages of using a digital transmission and storage of information.	N/A	
NGSS-HS-PS4-2-1	Evaluate questions about the advantages of using digital transmission of information.	p. 34 p. 660 p. 34 p. 660	SB Assess SB Assess TE Assess TE Assess
NGSS-HS-PS4-2-2	Evaluate questions about the advantages of using digital storage of information.	p. 34 p. 456 p. 34 p. 456	SB Assess SB Assess TE Assess TE Assess
NGSS-HS-PS4-3	Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	p. 660 p. 663 p. 664 p. 665 p. 665 (2) p. 665 (3) p. 660 p. 663 p. 664 p. 665 p. 665 (2) p. 665 (3)	SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-PS4-4	Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	p. 647 p. 662 p. 647 p. 662	SB Assess SB Assess TE Assess TE Assess
NGSS-HS-PS4-5	Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	p. 434 p. 450 p. 647 p. 662 p. 662 (2) p. 662 (3) p. 434 p. 450 p. 647 p. 662 p. 662 (2) p. 662 (3)	SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess
NGSS-HS-SEP	Science and Engineering Practices		
NGSS-HS-SEP-1	Asking Questions and Defining Problems. Asking questions and defining problems in grades 9-12 builds from grades K-8 experiences and progresses to formulating, refining, and evaluating empirically		

NGSS-HS-SEP-1	builds from grades K-8 experiences and progresses to formulating, refining, and evaluating empirically testable questions and design problems using models and simulations.		
NGSS-HS-SEP-1-1	Evaluate questions that challenge the premise(s) of an argument, the interpretation of a data set, or the suitability of a design.	N/A	
NGSS-HS-SEP-1-1-1	Evaluate questions that challenge the premise(s) of an argument.	p. 12 p. 25 p. 30 p. 30 (2)	SB Content SB Content SB Assess TE Assess
NGSS-HS-SEP-1-1-2	Evaluate questions that challenge the interpretation of a data set.	p. 644 p. 723 p. 724 p. 727 p. 727 (2)	SB Content SB Content SB Content SB Assess TE Assess
NGSS-HS-SEP-1-1-3	Evaluate questions that challenge the suitability of a design.	p. 29 p. 357 p. 480 p. 726 p. 726 (2)	SB Content SB Content SB Content SB Assess TE Assess
NGSS-HS-SEP-2	Developing and Using Models. Modeling in 9-12 builds on K-8 and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed worlds.		
NGSS-HS-SEP-2-1	Develop a model based on evidence to illustrate the relationships between systems or between components of a system.	p. 248 p. 708	SB Content SB Content
NGSS-HS-SEP-3	Planning and Carrying Out Investigations. Planning and carrying out investigations in 9-12 builds on K-8 experiences and progresses to include investigations that provide evidence for and test conceptual, mathematical, physical, and empirical models.		
NGSS-HS-SEP-3-1	Plan and conduct an investigation individually and collaboratively to produce data to serve as the basis for evidence, and in the design: decide on types, how much, and accuracy of data needed to produce reliable measurements and consider limitations on the precision of the data (e.g., number of trials, cost, risk, time), and refine the design accordingly.		
NGSS-HS-SEP-3-1-1	Plan and conduct an investigation individually.	p. 86 p. 520	SB Content SB Content
NGSS-HS-SEP-3-1-2	Plan and conduct an investigation collaboratively.	p. 312 p. 413 p. 644	SB Content SB Content SB Content
NGSS-HS-SEP-3-1-3	Plan and conduct an investigation, and in the design decide on types of data needed.	p. 312 p. 462 p. 586	SB Content SB Content SB Content
NGSS-HS-SEP-3-1-4	Plan and conduct an investigation, and in the design decide how much data are needed.	p. 586	SB Content
NGSS-HS-SEP-3-1-5	Plan and conduct an investigation, and in the design decide the accuracy of data needed to produce reliable measurements.	p. 462	SB Content
NGSS-HS-SEP-3-1-6	Plan and conduct an investigation, and in the design consider limitations on the precision of the data.	p. 50	SB Content

NGSS-HS-SEP-4	Analyzing and Interpreting Data. Analyzing data in 9-12 builds on K-8 and progresses to introducing more detailed statistical analysis, the comparison of data sets for consistency, and the use of models to generate and analyze data.		
NGSS-HS-SEP-4-1	Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution.	p. 113 p. 462	SB Content SB Content
NGSS-HS-SEP-5	Using Mathematics and Computational Thinking. Mathematical and computational thinking at the 9-12 level builds on K-8 and progresses to using algebraic thinking and analysis, a range of linear and nonlinear functions including trigonometric functions, exponentials and logarithms, and computational tools for statistical analysis to analyze, represent, and model data. Simple computational simulations are created and used based on mathematical models of basic assumptions.		
NGSS-HS-SEP-5-1	Create a computational model or simulation of a phenomenon, designed device, process, or system.	p. 59 p. 86 p. 462	SB Content SB Content SB Content
NGSS-HS-SEP-5-2	Use mathematical representations of phenomena or design solutions to describe and/or support claims and/or explanations.		
NGSS-HS-SEP-5-2-1	Use mathematical representations of phenomena or design solutions to support claims and/or explanations.	p. 285 p. 379	SB Content SB Content
NGSS-HS-SEP-5-2-2	Use mathematical representations of phenomena to describe explanations.	p. 114	SB Content
NGSS-HS-SEP-6	Constructing Explanations and Designing Solutions. Constructing explanations and designing solutions in 9-12 builds on K-8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific ideas, principles, and theories.		
NGSS-HS-SEP-6-1	Apply scientific ideas to solve a design problem, taking into account possible unanticipated effects.	p. 312 p. 462 p. 480	SB Content SB Content SB Content
NGSS-HS-SEP-6-2	Design, evaluate, and/or refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.		
NGSS-HS-SEP-6-2-1	Design a solution to a complex real-world problem.	p. 29 p. 219 p. 248 p. 357 p. 775	SB Content SB Content SB Content SB Content SB Content
NGSS-HS-SEP-6-2-2	Evaluate a solution to a complex real-world problem.	p. 29 p. 248 p. 357 p. 462 p. 775	SB Content SB Content SB Content SB Content SB Content
NGSS-HS-SEP-6-2-3	Refine a solution to a complex real-world problem.	p. 29 p. 248 p. 462 p. 775	SB Content SB Content SB Content SB Content
NGSS-HS-SEP-6-2-4	Use scientific knowledge to design, evaluate, and/or refine a solution to a	p. 219 p. 248	SB Content SB Content

	complex real-world problem.	p. 312 p. 462	SB Content SB Content
NGSS-HS-SEP-6-2-5	Use student-generated sources of evidence to design, evaluate, and/or refine a solution to a complex real-world problem.	p. 357 p. 357 (2) p. 462	SB Content SB Content SB Content
NGSS-HS-SEP-6-2-6	Use prioritized criteria to design, evaluate, and/or refine a solution to a complex real-world problem.	p. 29 p. 248 p. 357	SB Content SB Content SB Content
NGSS-HS-SEP-6-2-7	Use tradeoff considerations to design, evaluate, and/or refine a solution to a complex real-world problem.	p. 29 p. 248 p. 586	SB Content SB Content SB Content
NGSS-HS-SEP-7	Engaging in Argument from Evidence. Engaging in argument from evidence in 9-12 builds on K-8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about natural and designed worlds. Arguments may also come from current scientific or historical episodes in science.		
NGSS-HS-SEP-7-1	Evaluate the claims, evidence, and/or reasoning behind currently accepted explanations or solutions to determine the merits of arguments.	p. 723 p. 724 p. 727 p. 727 (2) p. 727 (3) p. 727 (4)	SB Content SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-SEP-8	Obtaining, Evaluating, and Communicating Information.		
NGSS-HS-SEP-8-1	Evaluate the validity and reliability of multiple claims that appear in scientific and technical texts or media reports, verifying the data when possible.		
NGSS-HS-SEP-8-1-1	Evaluate the validity and reliability of multiple claims that appear in scientific and technical texts, verifying the data when possible.	p. 12 p. 231 p. 727 p. 231 p. 727	SB Content SB Assess SB Assess TE Assess TE Assess
NGSS-HS-SEP-8-1-2	Evaluate the validity and reliability of multiple claims that appear in media reports, verifying the data when possible.	p. 25 p. 25 (2) p. 34 p. 34 (2) p. 662 p. 34 p. 34 (2) p. 662	SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
NGSS-HS-SEP-8-2	Communicate technical information or ideas (e.g., about the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).		
NGSS-HS-SEP-8-2-1	Communicate technical information orally.	p. 29 p. 269 p. 269 (2) p. 312	SB Content SB Content SB Content SB Content
NGSS-HS-SEP-8-2-2	Communicate technical information graphically.	p. 59	SB Assess
		p. 29	SB Content

NGSS-HS-SEP-8-2-3	Communicate technical information textually.	p. 462 p. 775	SB Content SB Content
NGSS-HS-SEP-8-2-4	Communicate technical information mathematically.	p. 462	SB Content
MATH	Connections to State Standards for Mathematics		
MATH-HSA	High School - Algebra		
MATH-HSA-CED	Creating Equations		
MATH-HSA-CED.A	Create equations that describe numbers or relationships.		
MATH-HSA-CED.A.1	Create equations and inequalities in one variable and use them to solve problems.	p. 317 p. 164 p. 319 p. 664 p. 164 p. 319 p. 664	SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
MATH-HSA-CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	p. 59 p. 432 p. 68 p. 127 p. 470 p. 68 p. 127 p. 470	SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
MATH-HSA-CED.A.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	p. 61 p. 81 p. 118 p. 62 p. 100 p. 438 p. 100 p. 438	SB Content SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess
MATH-HSA-SSE	Seeing Structure in Expressions		
MATH-HSA-SSE.A	Interpret the structure of expressions		
MATH-HSA-SSE.A.1	Interpret expressions that represent a quantity in terms of its context.	p. 110 p. 115 p. 127 p. 163 p. 662 p. 727 p. 127 p. 163 p. 662 p. 727	SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
MATH-HSA-SSE.B	Write expressions in equivalent forms to solve problems.		
		p. 61	SB Content

MATH-HSA-SSE.B.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	p. 81 p. 218 p. 62 p. 303 p. 69 p. 303	SB Content SB Content SB Assess SB Assess TE Assess TE Assess
MATH-HSF	High School - Functions		
MATH-HSF-IF	Interpreting Functions		
MATH-HSF-IF.C	Analyze functions using different representations.		
MATH-HSF-IF.C.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	p. 59 p. 462 p. 130 p. 547 p. 130 p. 547	SB Content SB Content SB Assess SB Assess TE Assess TE Assess
MATH-HSN	High School - Number and Quantity		
MATH-HSN-Q	Quantities		
MATH-HSN-Q.A	Reason quantitatively and use units to solve problems.		
MATH-HSN-Q.A.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	p. 54 p. 92 p. 135 p. 143 p. 97 p. 97 (2) p. 153 p. 489 p. 97 p. 97 (2) p. 153 p. 489	SB Content SB Content SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
MATH-HSN-Q.A.2	Define appropriate quantities for the purpose of descriptive modeling.	p. 59 p. 68 p. 69 p. 68 p. 69	SB Assess SB Assess SB Assess TE Assess TE Assess
MATH-HSN-Q.A.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	p. 48 p. 48 (2) p. 49 p. 65 p. 65 (2) p. 65 (3) p. 66 p. 65 p. 65 (2) p. 65 (3) p. 66	SB Content SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess

MATH-HSS	High School - Statistics and Probability		
MATH-HSS-ID	Interpreting Categorical and Quantitative Data		
MATH-HSS-ID.A	Summarize, represent, and interpret data on a single count or measurement variable.		
MATH-HSS-ID.A.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).	p. 15 p. 58 p. 59 p. 68 p. 68 (2) p. 305	SB Content SB Content SB Assess SB Assess TE Assess TE Assess
MATH-MP	Standards for Mathematical Practice		
MATH-MP.2	Reason abstractly and quantitatively.	p. 89 p. 216 p. 291 p. 97 p. 232 p. 304 p. 97 p. 232 p. 304	SB Content SB Content SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
MATH-MP.4	Model with mathematics.	p. 85 p. 115 p. 117 p. 146 p. 196 p. 127 p. 128 p. 153 p. 301 p. 127 p. 128 p. 153 p. 301	SB Content SB Content SB Content SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
MATH-MP.5	Use appropriate tools strategically.	p. 45 p. 50 p. 59 p. 62 p. 595 p. 611 p. 63 p. 99 p. 104 p. 130 p. 153 p. 63 p. 99 p. 104 p. 130 p. 153	SB Content SB Content SB Content SB Content SB Content SB Content SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess
ELA	English Language Arts and Literacy		

ELA-RST.11-12	Reading Standards for Literacy in Science and Technical Subjects 11-12		
ELA-RST.11-12-1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.	p. 231 p. 647 p. 662 p. 231 p. 647 p. 662	SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
ELA-RST.11-12-7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.	p. 558 p. 275 p. 407 p. 822 p. 275 p. 407 p. 822	SB Content SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
ELA-RST.11-12-8	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	p. 231 p. 662 p. 727 p. 231 p. 662 p. 727	SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
ELA-RST.9-10	Reading Standards for Literacy in Science and Technical Subjects 9-10		
ELA-RST.9-10-1	Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.	p. 647 p. 662 p. 662 (2) p. 647 p. 662 p. 662 (2)	SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess
ELA-RST.9-10-7	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	p. 61 p. 66 p. 98 p. 127 p. 185 p. 230 p. 327 p. 407 p. 789 p. 822 p. 66 p. 98 p. 127 p. 185 p. 230 p. 327 p. 407 p. 789 p. 822	SB Content SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess
ELA-RST.9-10-8	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.	p. 25 p. 822 p. 822 (2)	SB Content SB Assess TE Assess
ELA-SL.11-12	Speaking and Listening Standards 11-12		

ELA-SL.11-12-5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	p. 29 p. 275 p. 789 p. 275 p. 789	SB Content SB Assess SB Assess TE Assess TE Assess
ELA-WHST.11-12	Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 11-12		
ELA-WHST.11-12-8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	p. 546 p. 727 p. 727 (2) p. 823 p. 546 p. 727 p. 727 (2) p. 823	SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess
ELA-WHST.9-10	Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 9-10		
ELA-WHST.9-12-2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.	p. 727 p. 763 p. 789 p. 801 p. 807 p. 822 p. 727 p. 763 p. 789 p. 801 p. 807 p. 822	SB Assess SB Assess SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess TE Assess TE Assess
ELA-WHST.9-12-7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	p. 312 p. 462 p. 558 p. 586 p. 546 p. 823 p. 546 p. 823	SB Content SB Content SB Content SB Content SB Assess SB Assess TE Assess TE Assess
ELA-WHST.9-12-9	Draw evidence from informational texts to support analysis, reflection, and research.	p. 269 p. 269 (2) p. 276 p. 276 (2) p. 662 p. 695 p. 276 p. 276 (2) p. 662 p. 695	SB Content SB Content SB Assess SB Assess SB Assess SB Assess TE Assess TE Assess TE Assess TE Assess