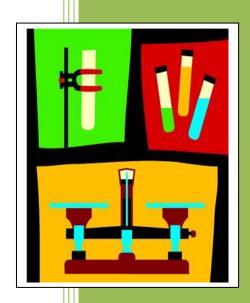
2011

SCIENCE CURRICULUM GRADE 9



Curriculum Writers: Britany Coleman, Gregory Decoteaux, Rebecca Dumont, Kimberly Laliberte, Kevin Lendrum, Keith Martinous, Dennis Nobrega, Erin Schwab, and Emily Zilly

East Providence, Middletown and Newport School Districts 6/1/2011

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
1. PHYSICAL		PS1 (9-11) -1 Students demonstrate an understanding of characteristic	Facilitates the	Textbook	COMMON
SCIENCE		properties of matter by	scientific inquiry	Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	ASSESSMENTSAssessments Target
1.1. Properties		1.1.1 Understanding and using the metric system to measure: volume,	• collect data	Supplementary books/material	Benchmark Problems Common Tasks
of Matter		distance, mass, and temperature.	 communicate understanding and 	Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe	Formative and Summative Assessments
Enduring Knowledge		1.1.2 Utilizing appropriate data (related to chemical and physical properties), to distinguish one substance from another or identify an unknown	ideasdesign, conduct,	Chemistry Concepts and Applications, elencoe Chemistry Matter and Change, Glencoe Current science magazines	
PS1 - All living and nonliving		substance. 1a COVERED IN CHEMISTRY	and critique investigations	Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges,	SUGGESTED FORMATIVE/
things are composed of matter having		1.1.3 Beginning to identify the degree of change in pressure of a given volume	 represent, analyze, 	Pearson • Physics a First Course, CPO	SUMMATIVE ASSESSMENTS
characteristic properties that		of gas when the temperature changes incrementally (doubles, triples, etc.). 1b	and interpret dataexperimental	Technology Beyond Question Software	Anecdotal records
distinguish one substance from		 e.g. rock cycle, exploding aerosol cans, floating balloons, weather balloons 	design • observe	 Beyond Question Software Computer lab Gizmos™ 	Exhibits
another (independent of			• predict	Laptops LCD projectors	Interviews Graphic organizers
size or amount of substance).		 1.1.4 BENCHMARK PROBLEMS PS1 (9-11) INQ -1 Use physical and chemical properties as 	 question and hypothesize 	Scientific calculators Googledocs.com	Journals
		determined through an investigation to identify a substance (ASSESSMENT TARGET) COVERED IN CHEMISTRY	use evidence to draw conclusions	 http://dsc.discovery.com/ http://mw.concord.org/modeler/ 	Multiple Intelligences
		 MCAS 2008, Chemistry, p. 492, #23 (5) 	• use tools, and	http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html	assessments e.g. role playing -
		• MCAS 2006, Chemistry, p. 492, #25 (5)	techniques	http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators	bodily kinesthetic, graphic organizing - visual,
			Facilitates the learning cycle of	http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls	collaboration- interpersonal
			science through the 5 E's of	Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips)	Oral presentations
			engagementexploration	www.acs.orgwww.acs.org/chemmatters	Performance/problem- based tasks
			explanationelaboration	www.beaconlearningcenter.com (lessons) www.brainpop.com www.discovery.com	Rubrics Transien
			evaluation	www.ebecri.org www.educationworld.com/ (Laws of Motion)	InquiryInformational writing
				www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion)	Tests and quizzes
				www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion)	Writing (ELA Common Core: arguments,
				www.polleverywhere.com www.ride.ri.gov www.sciencenetlinks.com (benchmarks and	informational, responding to
				www.scienceneriinks.com (Denchmarks and	informational text

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
				lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	
4 51 845 5 44					
1 PHYSICAL		S1 (9-11)-1 Students demonstrate an understanding of characteristic	Facilitates the	Textbook	COMMON
SCIENCE	pr	roperties of matter by	scientific inquiry	Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	ASSESSMENTS
			method	and space science, it diffice than	Assessments TargetBenchmark Problems
			collect data	Supplementary books/material	Common Tasks
1.2. Properties	1.	2.1 <u>Using given data (diagrams, charts, narratives, etc.) and advances in</u>	 communicate 	Bill Nye 100 Greatest Discovery Series	 Formative and
of Matter		technology to explain how the understanding of atomic structure has	understanding and	Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe	Summative Assessments
		<u>changed over time</u> . 2a	ideas	Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe	Assessments
Enduring			 design, conduct, 	Current science magazines	SUGGESTED
Knowledge	1.	2.2 Identifying how atomic theories have changed over time through	and critique	Motion Forces and Energy, Prentice Hall	FORMATIVE/
PS1 - All living		 Democritus 	investigations	Physical Science - Concepts and Challenges, Pearson	
and nonliving things are		Dalton's Atomic Theory	 represent, analyze, 	Physics a First Course, CPO	SUMMATIVE
composed of		• Thomson	and interpret data		• Anecdotal records
matter having		 Rutherford 	 experimental 	<u>Technology</u>	Anecdotal records
characteristic		Bohr	design	Beyond Question Software	• Exhibits
properties that distinguish one			observe	• Computer lab • Gizmos™	
substance from	1	2.3 BENCHMARK PROBLEMS	• predict	• Laptops	 Interviews
another	1.	PS1 (9-11) MAS+ NOS -2 Scientific thought about atoms has changed	question and	LCD projectors	Graphic organizers
(independent of		over time. Using information (narratives or models of atoms) provided,	hypothesize	Scientific calculators	эх э р ххэ эх у аххаа
size or amount of substance).		cite evidence that has changed our understanding of the atom and the	use evidence to	 Googledocs.com http://dsc.discovery.com/ 	 Journals
of substance).				http://mw.concord.org/modeler/	Multiple Intelligences
		development of atomic theory. (ASSESSMENT TARGET)	draw conclusions	 http://ri.itest.portal.concord.org/preview/ 	assessments e.g.
		Marc 2007 dl	• use tools, and	 http://science-class.net/ http://sciencespot.net/index.html 	role playing -
		 MCAS 2007, Chemistry, p. 496, #25 (S) modify 	techniques	http://sciencespot.net/index.html http://scilinks.nasa.gov/	bodily kinesthetic,
		 MCAS 2007, Chemistry, p. 499, #29 (S) modify 		http://smithsonianeducation.org/educators	graphic organizing - visual,
			Facilitates the	http://www.howstuffworks.com/	collaboration-
			learning cycle of	• nces.ed.gov/nagtionsreportcard/itmrls	interpersonal
			science through the	<u>Tweentribune.com</u> (student responding) www.windowsintowonderland.org (virtual	0
			5 E's of	fieldtrips)	Oral presentations
			 engagement 	• www.acs.org	Performance/problem-
			 exploration 	www.acs.org/chemmatters www.beaconlearningcenter.com (lessons)	based tasks
			 explanation 	www.beaconlearningcenter.com (lessons) www.brainpop.com	Delevier
			elaboration	www.discovery.com	Rubrics Inquiry
			evaluation	www.ebecri.org	• Informational

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
				www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion)	writing • Tests and quizzes
				www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywhere.com www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com	Writing (ELA Common Core: arguments, informational, responding to informational text)
				Materials • CPO equipment • Flinn: Electromagnet Kit	
1. PHYSICAL		PS1 (9-11) -3 Students demonstrate an understanding of characteristic	Facilitates the	Textbook	COMMON
SCIENCE		properties of matter by	scientific inquiry	Physical Science Concepts in Action with Earth	ASSESSMENTS
			method	and Space Science, Prentice Hall	Assessments TargetBenchmark Problems
			• collect data	Supplementary books/material	Common Tasks
1.3. Properties		1.3.1 Defining valence electrons and determining the number of valence	 communicate 	Bill Nye 100 Greatest Discovery Series	Formative and
of Matter		electrons in a given element. (Physics First only)	understanding and	Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe	Summative Assessments
			ideas	Chemistry Matter and Change, Glencoe	ASSESSITEMS
Enduring			 design, conduct, 	Current science magazines	SUGGESTED
Knowledge		1.3.2 Identifying and explaining the basis for the arrangement of the	and critique	Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges.	FORMATIVE/
 PS1 - All living and nonliving 		elements within the periodic table e.g.	investigations	Pearson	SUMMATIVE
things are		 metals and non- metals, metalloids (grade 9) 	 represent, analyze, 	Physics a First Course, CPO	ASSESSMENTS
composed of matter having		• trends (grade 9)	and interpret data	Technology	Anecdotal records
characteristic		• <u>valence electrons (grade 9)</u>	experimental	Beyond Question Software	Exhibits
properties that		 reactivity COVERED IN CHEMISTRY electronegativity, ionization COVERED IN CHEMISTRY 3a 	design observe	 Computer lab Gizmos™ 	
distinguish one substance from		electronegativity, ionization_covered in chemistry sa	• predict	Laptops	Interviews
another		1.3.3 <u>Predicting</u> the relative physical and chemical properties of an element	question and	LCD projectors	Graphic organizers
(independent of size or amount		based on its location within the Periodic Table. 3b COVERED IN	hypothesize	Scientific calculators Googledocs.com	
of substance).		CHEMISTRY	use evidence to	 bodgledocs.com http://dsc.discovery.com/ 	• Journals
		CHEMISTRY	draw conclusions	 http://mw.concord.org/modeler/ 	Multiple Intelligences
		1.3.4 BENCHMARK PROBLEMS	use tools, and	 http://ri.itest.portal.concord.org/preview/ http://science-class.net/ 	assessments e.g.
		PS1 (9-11) POC -3 Explain how properties of elements and the location	techniques	http://sciencespot.net/index.html	role playing - bodily kinesthetic,
		of elements on the periodic table are related. (ASSESSMENT TARGET)		http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators	graphic organizing
		s, someth the political rapid and rolation. (Hobboother Trinolly	Facilitates the	http://smithsonianeducation.org/educators http://www.howstuffworks.com/	- visual,
		 NECAP 2009, p. 1, #1 (F) modify 	learning cycle of	nces.ed.gov/nagtionsreportcard/itmrls	collaboration- interpersonal

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
	 NECAP 2009, p. 1, #2 (S) modify MCAS 2008, Chemistry, p. 502, #45 (S) (East Providence and 	science through the 5 E's of	Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips)	Oral presentations
	Middletown only)	engagementexploration	www.acs.org www.acs.org/chemmatters www.beaconlearningcenter.com (lessons)	Performance/problem- based tasks
	• GIZMO™ (East Providence and Middletown only), <i>Element Builder</i>	explanationelaborationevaluation	www.brainpop.com www.discovery.com www.ebecri.org www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and	Rubrics Inquiry Informational writing Tests and quizzes
			motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywhere.com www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com	Writing (ELA Common Core: arguments, informational, responding to informational text)
			Materials • CPO equipment • Flinn: Electromagnet Kit	
1 PHYSICAL SCIENCE	PS1 (9-11) - 4 Students demonstrate an understanding of the structure of matter by	Facilitates the scientific inquiry method	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS • Assessments Target
1.4 States of Matter	1.4.1 Comparing the three subatomic particles of atoms • protons • electrons	collect data communicate understanding and	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu	Benchmark Problems Common Tasks Formative and Summative
Enduring Knowledge PS1 - All living and nonliving	 neutrons and their location within an atom, their relative mass, and their charge. 4a 	ideasdesign, conduct,and critiqueinvestigations	Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson	Assessments SUGGESTED FORMATIVE/
things are composed of matter having	1.4.2 Distinguishing between atomic number, mass number, and atomic mass.	 represent, analyze, and interpret data 	• Physics a First Course, CPO	SUMMATIVE ASSESSMENTS • Anecdotal records
characteristic properties that distinguish one substance from	1.4.3 Writing formulae for compounds and developing basic (excluding transition elements) models using electron structure. 4b	 experimental design 	Technology Beyond Question Software Computer lab	Exhibits
another	COVERED IN CHEMISTRY	• observe	• Gizmos TM • Laptops	• Interviews
(independent of size or amount of substance).	1.4.4 Explaining or modeling how the electron configuration of atoms governs	 predict question and 	LCD projectors Scientific calculators	Graphic organizers
of substance).	how atoms interact with one another (e.g.	hypothesize	Googledocs.com	• Journals

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES	M2000M020	EVIDENCE
STANDARDS	• covalent • hydrogen • ionic bonding). 4c COVERED IN CHEMISTRY 1.4.5 BENCHMARK PROBLEMS PS1 (9-11) MAS+ FAF - 4 Model and explain the structure of an atom (grade 9) or explain how an atom's electron configuration, particularly the outermost electron(s), determines how that atom can interact with other atoms (chemistry). (ASSESSMENT TARGET) • MCAS 2006, Chemistry, p. 456, #25 a,b (S) • MCAS 2007, Chemistry, p. 496, #25 (S) • MCAS 2008, Chemistry, p. 495, #29 (F) modify • GIZMO™ (East Providence and Middletown only), Covalent Bonding and Ionic Bonding	• use evidence to draw conclusions • use tools, and techniques Facilitates the learning cycle of science through the 5 E's of • engagement • exploration • explanation • evaluation	http://dsc.discovery.com/ http://mw.concord.org/modeler/ http://sciencespot.net/index.html http://sciencespot.net/index.html http://sciencespot.net/index.html http://sciencespot.net/index.html http://scilinks.nasa.gov/ http://swithsonianeducation.org/educators http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips) www.acs.org www.acs.org www.acs.org www.beaconlearningcenter.com (lessons) www.brainpop.com www.brainpop.com www.discovery.com www.ebecri.org www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.funderstanding.com/coaster (force and motion) www.plclearn.com/olympics (force & motion) www.plclearn.com/olympics (force & motion) www.picle.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	Multiple Intelligences assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration-interpersonal Oral presentations Performance/problembased tasks Rubrics
1. PHYSICAL SCIENCE	PS2 (9-11)-5 Students demonstrate an understanding of energy by	Facilitates the scientific inquiry method	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS Assessments Target Benchmark Problems
1.5 Energy Enduring Knowledge	1.5.1 Describing or diagraming the changes in energy (transformation) that occur in different systems, eg. chemical = exo and endo thermic reactions biological = food webs	collect data communicate understanding and ideas	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe	Common Tasks Formative and Summative Assessments
PS 2 - Energy is necessary for change to occur in matter. Energy can be stored,	 physical = phase changes. 5a 1.5.2 Understanding the forms of energy: kinetic 	design, conduct, and critique investigations represent, analyze,	Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO	SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS

Transferred, and trood remark d, and trood remark d, and trood remark d, but owned to be destroyed.	GSEs/		BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
and interpret data of transformed, but cases the electric potential endesting to potential endesting of the electron potential endesting electron el e						
electromote be demonsted enchanced thermal chemical chemical electromagnetic 1.5.3 Calculating the kinetic and potential energy of an object E.E. = my GPE mgh 1.5.4 Understanding that energy continually changes forms. 1.5.5 Explaining the Law of Conservation of Energy as it relates to the efficiency (loss of heart) of a system. 5b PS2 (9-11) POC+SAE -5 Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems). (ASSESS-MENT T ARBOTT) NECAP 2009, p. 1, #2 (S) modify MCAS 2006, Intro Physics, p. 480, #23 (I) modify MCAS 2006, Intro Physics, p. 480, #23 (I) modify MCAS 2009, Intro Physics, p. 182 (F) modify MCAS 2009, Intro Physics, p. 182 (F) Si modify				and interpret data	Technology	Anecdotal records
destinyed. • mechanical • thermal • chemical • chemical • chemical • electrical •				•		. Cultities
thermal chemical nuclear nuclear electrical			·	· · · · · · · · · · · · · · · · · · ·	· ·	• EXHIBITS
 chemical nuclear electrical electrical 1.5.3 Calculating the kinetic and potential energy of an object KE = † m/² GFE = mgh 1.5.4 Understanding that energy continually changes forms. Explaining the Lew of Conservation of Energy as it relates to the efficiency of the system is reduced (chemical, biological, and physical systems). BENCHMARK PROBLEMS NECAP 2009, p. 1, #2 (S) modify MCAS 2006, Intro Physics, p. 480, #23 (I) modify MCAS 2006, Intro Physics, p. 480, #43 (S) modify MCAS 2006, Intro Physics, p. 990, #45 (F) modify MCAS 2009, Intro Physics, p. 180 (L) modify MCAS 2009, Intro Physics, p. 505, #48 (I) modify MCAS 2009, Intro Physics, p. 180 (I) modify MCAS 2009, Intro Physics, p. 505, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009, Intro Physics, p. 515, #8 (I) modify MCAS 2009,	,		• thermal	observe		• Interviews
 question and hypothesize electronal electronagnetic lectorical electronagnetic calculating the kinetic and potential energy of an object			• chemical	• predict		- Granhia anagnizana
electrical electromagnetic 1.5.3 Calculating the kinetic and potential energy of an object • KE = ½ my² • GFE = mgh 1.5.4 Understanding that energy continually changes forms. 1.5.5 Explaining the Law of Conservation of Energy gas it relates to the efficiency (loss of heat) of a system. 5b • NECAP 2009, p. 1, #2 (S) modify • MCAS 2006, Intro Physics, p. 480, #23 (I) modify • MCAS 2006, Intro Physics, p. 490, #45 (F) modify • MCAS 2006, Intro Physics, p. 490, #41 (F) modify • MCAS 2009, Intro Physics, p. 490, #41 (F) modify • MCAS 2009, Intro Physics, p. 9.90, #41 (F) modify • MCAS 2009, Intro Physics, p. 9.90, #41 (F) modify • MCAS 2009, Intro Physics, p. 9.90, #41 (F) modify • MCAS 2009, Intro Physics, p. 9.80, #24 (F) modify • MCAS 2009, Intro Physics, p. 9.90, #41 (F) modify • MCAS 2009, Intro Physics, p. 9.1, #2 (S) modify • MCAS 2009, Intro Physics, p. 9.80, #24 (F) modify • MCAS 2009, Intro Physics, p. 9.80, #21 (S) • MCAS 2009, Intro Physics, p. 9.80, #21 (S) • MCAS 2009, Intro Physics, p. 9.80, #24 (F) modify • MCAS 2009, Intro Physics, p. 9.80, #24 (F) modify • MCAS 2009, Intro Physics, p. 9.80, #23 (F, S) • GIZMO™ (East Providence and Middletown only), Energy Conversions in a System			• nuclear	• question and		Graphic organizers
# Author is a preference of a potential energy of an object 1.5.3 Calculating the kinetic and potential energy of an object KE = # mv²			• electrical	hypothesize		• Journals
draw conclusions • KE = † my² • GPE = mgh 1.5.4 Understanding that energy continually changes forms. 1.5.5 Explaining the Low of Conservation of Energy as it relates to the efficiency (loss of heart) of a system. 5b 1.5.6 BENCHMARK PROBLEMS PS2 (9-11) POC-SAE - 5 Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems). • NECAP 2009, p. 1, #2 (s) modify • MCAS 2006, Intro Physics, p. 480, #23 (T) modify • MCAS 2006, Intro Physics, p. 480, #23 (T) modify • MCAS 2006, Intro Physics, p. 480, #23 (T) modify • MCAS 2008, Intro Physics, p. 515, #8 (T) modify • MCAS 2009, Intro Physics, p. 515, #8 (T) modify • MCAS			 electromagnetic 	use evidence to		Multiple Intelligences
** SEC + m/s* ** Calculating the kinetic and potential energy of an object ** KE + m/s* ** GPE = mgh ** Inter/facilities is the facilities is add potential energy continually changes forms. ** Inter/facilities is the facilities and facilities is the facilities and facilities and facilities and facilities and facilities. ** Inter/facilities and facilities and facilities and facilities and facilities. ** Inter/facilities and facilities and facilities. ** Inter/facilities and facilities. ** Inter/facilities. ** Inter/facilities and facilities. ** Inter/facilities. ** Interval int				draw conclusions		, ,
*** KE = 1 m/2** *** GPE = mgh* 1.5.4 Understanding that energy continually changes forms. 1.5.5 Explaining the Law of Conservation of Energy as it relates to the efficiency (loss of hear) of a system. 5b 1.5.6 BENCHMARK PROBLEMS PS2 (9-11) POC-SAE-5 Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems). NECAP 2009, p. 1, #2 (5) modify MCAS 2006, Intro Physics, p. 480, #23 (I) modify MCAS 2006, Intro Physics, p. 480, #24 (F) modify MCAS 2006, Intro Physics, p. 480, #31 (S) modify MCAS 2009, Intro Physics, p. 512 #12 (S) MCAS 2009, Intro Physics, p.		1.5.3	Calculating the kinetic and potential energy of an object	 use tools, and 		. , 3
Facilitates the learning cycle of science through the 5 Fs of efficiency (loss of heat) of a system. 5b 1.5.6 BENCHMARK PROBLEMS PS2 (9-11) PDC-SAE - 5 Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems). (ASSESSMENT TARGET) • NECAP 2009, p. 1, #2 (S) modify • MCAS 2006, Intro Physics, p. 480, #23 (I) modify • MCAS 2006, Intro Physics, p. 480, #24 (F) modify • MCAS 2006, Intro Physics, p. 490, #24 (F) modify • MCAS 2008, Intro Physics, p. 512 #12 (S) • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 515, #8 (I) modify • MCAS 2009, Intro Physics, p. 512 #12 (S) • MCAS 2009, Intro Physics, p. 400				techniques		
1.5.4 Understanding that energy continually changes forms. Eaclitates the learning cycle of science through the Explaining the Law of Conservation of Energy as it relates to the efficiency (loss of heat) of a system. 5b 1.5.6 BENCHMARK PROBLEMS PS2 (9-11) POC-SAE -5 Demonstrate how transformations of energy produce some energy in the form of heat and therefore the efficiency of the system is reduced (chemical, biological, and physical systems). (ASSESSMENT TARET) NECAP 2009, p. 1, #2 (S) modify MCAS 2006, Intro Physics, p. 480, #23 (I) modify MCAS 2006, Intro Physics, p. 480, #44 (F) modify MCAS 2006, Intro Physics, p. 480, #45 (F) modify MCAS 2006, Intro Physics, p. 481 (S) modify MCAS 2007, Intro Physics, p. 515, #8 (I) modify MCAS 2007, Intro Physics, p. 515, #8 (I) modify MCAS 2009, In			GPE = mgh			
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* engagement exploration * evaluation * evaluation * evaluation * evaluation * evaluation * evaluation * * evaluati		1.5.5	Explaining the Law of Conservation of Energy as it relates to the	5 E's of	The state of the s	
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GIZMO™ (East Providence and Middletown only), Energy Conversions in a System						
Conversions in a System			 MCAS 2009, Intro Physics, p. 305, #32 (F, S) 			
Conversions in a System			GIZMO™ (East Providence and Middletown only), Energy			
1 PHYSICAL PS2 (9-11) -6 Students demonstrate an understanding of physical chemical Facilitates the Textbook COMMON						
	1. PHYSICAL	PS2 (9	9-11) -6 Students demonstrate an understanding of physical chemical	Facilitates the	Textbook	COMMON

GSEs/		BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
SCIENCE	and <u>nu</u>	<u>clear</u> changes by	scientific inquiry	Physical Science Concepts in Action with Earth	<u>ASSESSMENTS</u>
			method	and Space Science, Prentice Hall	Assessments TargetBenchmark Problems
1.6 Physical,	1.6.1	Begins to balance simple chemical equations to represent chemical	 collect data 	Supplementary books/material	Benchmark Problems Common Tasks
chemical,		reactions and illustrate the conservation of matter (Physics First only) 6a	 communicate 	Bill Nye 100 Greatest Discovery Series	Formative and
and <u>nuclear</u>			understanding and	Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe	Summative Assessments
changes	1.6.2	Identifying whether a given chemical reaction or a biological process will	ideas	Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe	Assessments
		release or consume energy (endothermic and exothermic) based on the	 design, conduct, 	Current science magazines	SUGGESTED
Enduring		information provided (e.g. given a table of energy values for reactants and	and critique	Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges.	FORMATIVE/
Knowledge		products or an energy diagram). 6b	investigations	Pearson	SUMMATIVE
PS 2 - Energy is necessary for			 represent, analyze, 	• Physics a First Course, CPO	ASSESSMENTS
change to occur	1.6.3	Identifying and/or modeling how the nuclear make-up of atoms governs	and interpret data	Taskaslass	Anecdotal records
in matter.		alpha and beta emissions creating changes in the nucleus of an atom	 experimental 	Technology Beyond Question Software	
Energy can be stored,		results in the formation of new elements. 6c	design	Computer lab	Exhibits
transferred, and			 observe 	• Gizmos™	 Interviews
transformed,	1.6.4	Explaining the concept of half-life and using the half-life principle to	• predict	LaptopsLCD projectors	
but cannot be destroyed.		predict the approximate age of a material. 6d	 question and 	Scientific calculators	Graphic organizers
33571 0704.			hypothesize	Googledocs.com http://dsc.discovery.com/	• Journals
	1.6.5	Differentiating between fission and fusion in nuclear reactions and their	use evidence to	http://dsc.discovery.com/http://mw.concord.org/modeler/	Modelnia Towniii ann an
		relation to element changes and energy formation. 6e	draw conclusions	 http://ri.itest.portal.concord.org/preview/ 	Multiple Intelligences assessments e.g.
			• use tools, and	http://science-class.net/ http://science-class.net/	role playing -
	1.6.6	BENCH MARK PROBLEMS	techniques	http://sciencespot.net/index.html http://scilinks.nasa.gov/	bodily kinesthetic,
		PS2 (9-11) INQ+SAE -6 Using information provided about chemical		 http://smithsonianeducation.org/educators 	graphic organizing - visual,
		changes, draw conclusions about and explain the energy flow in a given	Facilitates the	http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls	collaboration-
		chemical reaction (e.g., exothermic reactions, endothermic reactions).	learning cycle of	Tweentribune.com (student responding)	interpersonal
		(ASSESSMENT TARGET)	science through the	• www.windowsintowonderland.org (virtual	Oral presentations
		NEGAD 2000 A #4 (C) 116	5 E's of	fieldtrips) • www.acs.org	,
		• NECAP 2008, p. 4, #6 (S) modify	• engagement	www.acs.org www.acs.org/chemmatters	 Performance/problem- based tasks
		NECAP 2009, p. 3, #5 (S) modify	• exploration	<u>www.beaconlearningcenter.com</u> (lessons)	basea tasks
		• NECAP 2009, p. 1, #2 (I) modify	• explanation	www.brainpop.com www.discovery.com	• Rubrics
		MCAC 2000 Chamistra, in 400 #45 (C)	• elaboration	www.discovery.com www.ebecri.orq	InquiryInformational
		 MCAS 2008, Chemistry, p. 488 #15 (F) 	 evaluation 	 www.educationworld.com/ (Laws of Motion) 	writing
		 MCAS 2008, Chemistry, p. 497 #34 (F) 		www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and	
		 MCAS 2008, Chemistry, p. 497 # 36 (F) 		motion) www.tunderstanding.com/coaster (force and	Tests and quizzes
		 MCAS 2008, Chemistry, p. 499 #40 (S) 		<u>www.lessoncorner.com/science</u> (lesson corner)	Writing (ELA Common
		CTZMOTM (Fast Describerational and Middletone and M		www.nbclearn.com/olympics (force & motion) www.polleverywhere.com	Core: arguments,
		GIZMO™ (East Providence and Middletown only), Half Life, Nuclear Description		• www.ride.ri.gov	informational, responding to
		Decay		<u>www.sciencenetlinks.com</u> (benchmarks and	informational text)
				lessons) • www.sciencespot.net	
				www.sciencespor.nei www.thinkfinity.org	

GSEs/		BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
				www.unitedstreaming.com	
				Materials	
				CPO equipment	
				Flinn: Electromagnet Kit	
1. PHYSICAL		S2 (9-11) -7 Students demonstrate an understanding of electromagnetism	Facilitates the	Textbook	COMMON
SCIENCE	1	y	scientific inquiry	Physical Science Concepts in Action with Earth	ASSESSMENTS
		'	method	and Space Science, Prentice Hall	Assessments Target
1.7 Electro-		.7.1 Determining what causes an electric charge.	 collect data 	Supplementary books/material	Benchmark Problems Tracks
magnetism			 communicate 	Bill Nye 100 Greatest Discovery Series	Common Tasks Formative and
		.7.2 Explaining through words, diagrams, models, or electrostatic	understanding and	Chemistry a Natural Approach, Hsu	Summative
Enduring		demonstrations the principle that like charges repel and unlike charges	ideas	Chemistry Concepts and Applications, Glencoe	Assessments
Knowledge		attract. 7a	 design, conduct, 	Chemistry Matter and Change, Glencoe Current science magazines	
PS 2 - Energy is		arriadi, 7a	and critique	Motion Forces and Energy, Prentice Hall	<u>SUGGESTED</u>
necessary for		.7.3 Explaining through words, charts, diagrams, and models the effects of	investigations	 Physical Science - Concepts and Challenges, 	FORMATIVE/
change to occur in matter.		distance and the amount of charge on the strength of the electrical force	 represent, analyze, 	Pearson • Physics a First Course, CPO	<u>SUMMATIVE</u>
Energy can be		present. 7b	and interpret data	rhysics a first course, cro	ASSESSMENTS
stored,		present. 76	 experimental 	Technology	 Anecdotal records
transferred, and transformed.		.7.4 Describing how electric charge can be transferred	design	Beyond Question Software	Exhibits
but cannot be		• friction	observe	 Computer lab Gizmos™ 	
destroyed.		conduction (contact)	• predict	Laptops	 Interviews
		• induction	 question and 	LCD projectors	Graphic organizers
		• induction	hypothesize	Scientific calculators Googledocs.com	J
		.7.5 Describing the relationship between moving electric charges and magnetic	use evidence to	boogledocs.com http://dsc.discovery.com/	• Journals
		fields. 7c	draw conclusions	 http://mw.concord.org/modeler/ 	Multiple Intelligences
		<u>rielas</u> . 70	 use tools, and 	http://ri.itest.portal.concord.org/preview/	assessments e.g.
		.7.6 BENCH MARK PROBLEMS	·	http://science-class.net/http://sciencespot.net/index.html	role playing -
			techniques	 http://scilinks.nasa.gov/ 	bodily kinesthetic, graphic organizing
		PS2 (9-11) -SAE - 7 Explain relationships between and among electric charges, magnetic fields, electromagnetic forces, and atomic particles.	Facilitates the	http://smithsonianeducation.org/educators	- visual,
		charges, magnetic fields, electromagnetic forces, and atomic particles.		 http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls 	collaboration-
		NECAD 2009 n 2 #2 (E) madifi.	learning cycle of	 <u>Tweentribune.com</u> (student responding) 	interpersonal
		• NECAP 2008, p. 2, #3 (F) modify	science through the 5 E's of	<u>www.windowsintowonderland.org</u> (virtual	Oral presentations
		MCAC 2004 Tutus Dhusias in 494 #22 (T) madific		fieldtrips) • www.acs.org	
		 MCAS 2006, Intro. Physics, p. 486, #33 (I) modify 	• engagement	www.acs.org www.acs.org/chemmatters	 Performance/problem- based tasks
		 MCAS 2006, Intro. Physics, p. 477, #12 (F) modify 	• exploration	<u>www.beaconlearningcenter.com</u> (lessons)	טעטפע ועסאס
		 MCAS 2006, Intro. Physics, p. 483, #28 (F) modify 	 explanation 	www.brainpop.com www.discovery.com	• Rubrics
		 MCAS 2007, Intro. Physics, p. 516, #11 (I,S) 	 elaboration 	www.aiscovery.com www.ebecri.org	InquiryInformational
		 MCAS 2009, Intro. Physics, p. 300, #23 (F,S) 	 evaluation 	<u>www.educationworld.com/</u> (Laws of Motion)	• Informational writing
		ANA		www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and	
		 NY Regents Jan. 2009, Physics, p. 11, # 61-63 (I, F) (East 		www.junuerstanding.com/coaster (force and	Tests and quizzes

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
		Providence and Middletown only) ■ GIZMO TM (East Providence and Middletown only), Coulomb's Force		motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywhere.com www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	Writing (ELA Common Core: arguments, informational, responding to informational text)
1 PHYSICAL SCIENCE	P53 (by	9-11) - 8 Students demonstrate an understanding of forces and motion	Facilitates the scientific inquiry method	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS • Assessments Target • Benchmark Problems
1.8 Motion	1.8.1	Predicting and/or graphing the path of an object in different reference planes (frame of reference) and explain how and why (forces) it occurs. 8a, e.g. passenger on a train vs. observer	collect data communicate understanding and ideas	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe	Common Tasks Formative and Summative Assessments
Enduring Knowledge PS 3 - The motion of an	1.8.2	Using modeling, illustrating, graphing explain how distance and velocity change over time for a free falling object8b	 design, conduct, and critique investigations represent, analyze, 	Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO	SUGGESTED FORMATIVE/ SUMMATIVE
object is affected by forces.	1.8.3	Solving problems using the speed and acceleration equations v=d/t $a=(v_f-v_i)/t$ $d=\frac{1}{2}at^2$	and interpret data • experimental design	Technology Beyond Question Software Computer lab	• Exhibits
	1.8.4	Using a <u>quantitative representation</u> of how distance and velocity change	 observe predict question and	Gizmos™ Laptops LCD projectors Scientific calculators	Interviews Graphic organizers
	1.8.5	over time for a free falling object. 8aa BENCH MARK PROBLEMS	hypothesize use evidence to draw conclusions	Googledocs.com http://dsc.discovery.com/ http://mw.concord.org/modeler/	Journals Multiple Intelligences
		PS3 (9-11) POC+ INQ 8 Given information (e.g., graphs, data, diagrams), use the relationships between or among force, mass, velocity, momentum, and acceleration to predict and explain the motion of objects. (ASSESSMENT TARGET) NECAP 2008, p. 3, #4 (S) NECAP 2008, p. 6-7, #11-17 (I, F, S)	• use tools, and techniques Facilitates the learning cycle of science through the 5 E's of	http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips)	assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration- interpersonal Oral presentations

GSEs/ STANDARDS		BENCHMARKS East Providence, Middletown and Newport	INSTRUCTIONAL STRATEGIES	RESOURCES	ASSESSMENT EVIDENCE
CIAIDANDO		Edot i Tovidonoo, inidalotown diid Howport	engagement	• www.acs.org	Performance/problem-
		 MCAS 2006, Intro. Physics, p. 473, #3 (I) modify 	 exploration 	www.acs.org/chemmatters www.beaconlearningcenter.com (lessons)	based tasks
		 MCAS 2006, Intro. Physics, p. 473, #6 (F) modify 	 explanation 	www.brainpop.com	• Rubrics
		MCAS 2006, Intro. Physics, p. 475 #9 (F) modify	• elaboration	www.discovery.com www.ebecri.org	InquiryInformational
		MCAS 2006, Intro. Physics, p. 481, #25 (F) MCAS 2006, Intro. Physics, p. 487, #38 (F) modification (F) and (evaluation 	<u>www.educationworld.com/</u> (Laws of Motion)	writing
		 MCAS 2006, Intro. Physics, p. 487, #38 (F) modify MCAS 2007, Intro. Physics, p. 529, #39 (F,S) 		www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and	Tests and guizzes
		 MCAS 2007, Intro. Physics, p. 529, #39 (1,5) MCAS 2008, Intro Physics, p. 522, #32 (I) 		motion)	·
		• MICHO 2000, INTO Physics, p. 322, #32 (1)		 www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) 	Writing (ELA Common Core: arguments,
		 NY Regents Jan. 2008, Physics, p. 12, # 63-66 (I,S) 		www.nbclearn.com/olympics (101ce & motion) www.polleverywhere.com	informational,
		ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν ν		www.ride.ri.gov	responding to
		GIZMO™ (East Providence and Middletown only), Fan Cart, Free Fall		www.sciencenetlinks.com (benchmarks and lessons)	informational text)
		Tower		<u>www.sciencespot.net</u>	
				www.thinkfinity.org www.unitedstreaming.com	
				<u>Materials</u>	
				CPO equipment	
				Flinn: Electromagnet Kit	
1 PHYSICAL	PS:	3 (9-11)-9 Students demonstrate an understanding of forces and motion	Facilitates the	Textbook	COMMON
SCIENCE	by.		scientific inquiry	Physical Science Concepts in Action with Earth	ASSESSMENTS
			method	and Space Science, Prentice Hall	
1.9 Forces of	4 0		memoa		 Assessments Target
	1.9	.1 Solving problems using Newton's Law: F=ma.	• collect data		Benchmark Problems
Motion			collect datacommunicate	Supplementary books/material Bill Nye 100 Greatest Discovery Series	Benchmark ProblemsCommon TasksFormative and
Motion	1.9		• collect data	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu	Benchmark Problems Common Tasks Formative and Summative
Enduring	1.9.	.2 Distinguishing between weight, mass, and inertia.	collect data communicate understanding and ideas	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe	Benchmark ProblemsCommon TasksFormative and
Enduring Knowledge		.2 Distinguishing between weight, mass, and inertia.	 collect data communicate understanding and ideas design, conduct, 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines	Benchmark Problems Common Tasks Formative and Summative
Enduring	1.9.	.2 Distinguishing between weight, mass, and inertia. .3 Understanding the causes of momentum (speed and mass).	 collect data communicate understanding and ideas design, conduct, and critique 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe	Benchmark Problems Common Tasks Formative and Summative Assessments
Enduring Knowledge • PS 3 - The motion of an object is	1.9.	Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of	 collect data communicate understanding and ideas design, conduct, and critique investigations 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED
Enduring Knowledge PS 3 - The motion of an	1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges,	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between objects (e.g. Universal Gravitation Law). 9a (revisit again in Chemistry, 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/SUMMATIVE
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO Technology Beyond Question Software	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between objects (e.g. Universal Gravitation Law). 9a (revisit again in Chemistry, East Providence only) 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS Anecdotal records Exhibits
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9. 1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between objects (e.g. Universal Gravitation Law). 9a (revisit again in Chemistry, East Providence only) 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO Technology Beyond Question Software Computer lab Gizmos™ Laptops	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/SUMMATIVE ASSESSMENTS Anecdotal records
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9. 1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between objects (e.g. Universal Gravitation Law). 9a (revisit again in Chemistry, East Providence only) Using Newton's Laws of Motion and the Law of Conservation of Momentum 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO Technology Beyond Question Software Computer lab Gizmos TM Laptops LCD projectors	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS Anecdotal records Exhibits
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9. 1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between objects (e.g. Universal Gravitation Law). 9a (revisit again in Chemistry, East Providence only) Using Newton's Laws of Motion and the Law of Conservation of Momentum to predict the effect on the motion of objects. 9b BENCHMARK PROBLEMS 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe predict 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO Technology Beyond Question Software Computer lab Gizmos™ Laptops LCD projectors Scientific calculators Googledocs.com	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS Anecdotal records Exhibits Interviews Graphic organizers
Enduring Knowledge • PS 3 - The motion of an object is affected by	1.9. 1.9. 1.9.	 Distinguishing between weight, mass, and inertia. Understanding the causes of momentum (speed and mass). Explaining through words, charts, diagrams, and models the effects of distance and the amount of mass on the gravitational force between objects (e.g. Universal Gravitation Law). 9a (revisit again in Chemistry, East Providence only) Using Newton's Laws of Motion and the Law of Conservation of Momentum to predict the effect on the motion of objects. 9b 	 collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe predict question and 	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO Technology Beyond Question Software Computer lab Gizmos™ Laptops LCD projectors Scientific calculators	Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS Anecdotal records Exhibits Interviews

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
STANDARDS	**Stationary objects and collisions. (ASSESSMENT TARGET) **NECAP 2008, Inquiry: Driver's Education **p. 6-7, # 11 and 12 (I) **p. 8-9, # 13-16 (F) **p. 10, # 17 (S) **NECAP 2009, p. 2, #3 (S) modify **NECAP 2010, p.2, #4 (I,F) **MCAS 2006, Intro Physics, p. 483, #29 (S) **MCAS 2006, Intro Physics, p. 472, #1 (F) modify **MCAS 2006, Intro Physics, p. 473, #4 (F) modify **MCAS 2006, Intro Physics, p. 473, #4 (F) modify **MCAS 2006, Intro Physics, p. 481, #25 (F) **MCAS 2006, Intro Physics, p. 482, #26 (I) **MCAS 2006, Intro Physics, p. 520, #29 (F) modify **MCAS 2007, Intro Physics, p. 522, #25 (S) **MCAS 2007, Intro Physics, p. 514, #7 (I,F) modify **MCAS 2009, Intro Physics, p. 595, #12 (S) **NY Regents Jan. 2004, Physics, p. 12, # 73 (F,I) **NY Regents Jan. 2004, Physics, p. 12, # 65, 66, 69 (I) **GIZMO™ (East Providence and Middletown only), *Air Track and Gravitational Force*	• use tools, and techniques Facilitates the learning cycle of science through the 5 E's of • engagement • exploration • explanation • elaboration • evaluation	http://science-class.net/ http://sciencespot.net/index.html http://sciencespot.net/index.html http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips) www.acs.org www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.brainpop.com www.beaconlearningcenter.com (lessons) www.ebecri.org www.educationworld.com/ (Laws of Motion) www.fieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.funderstanding.com/coaster (force and motion) www.nbclearn.com/olympics (force & motion) www.nbclearn.com/olympics (force & motion) www.ride.ri.gov www.ride.ri.gov www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	role playing - bodily kinesthetic, graphic organizing - visual, collaboration- interpersonal Oral presentations Performance/problem- based tasks Rubrics Inquiry Informational writing Tests and quizzes Writing (ELA Common Core: arguments, informational, responding to informational text)
PHYSICAL SCIENCE	PS3 (9-11)-10 Students demonstrate an understanding of waves by	Facilitates the scientific inquiry method	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS • Assessments Target
1.10 Forces of Motion	1.10.1 Understanding that energy travels in the form of waves.1.10.2 Identifying the parts of a wave.	collect datacommunicate understanding and	Supplementary books/material Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu	Benchmark Problems Common Tasks Formative and Summative
Enduring	 amplitude 	ideas	<u>Chemistry Concepts and Applications</u> , Glencoe Chemistry Matter and Change, Glencoe	Assessments
Knowledge	• wavelength	 design, conduct, 	Current science magazines	SUGGESTED
PS 3 - The motion of an	• period	and critique	Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges.	FORMATIVE/
object is	• frequency	investigations	Pearson	SUMMATIVE
affected by	• crest	 represent, analyze, 	Physics a First Course, CPO	ASSESSMENTS
forces.	• trough	and interpret data		Anecdotal records

GSEs/	•		BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS			East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
			equilibrium/rest position	 experimental 	Technology	
			• compression	design	Beyond Question Software	Exhibits
			• rarefaction	 observe 	 Computer lab Gizmos™ 	• Interviews
			• node	 predict 	• Laptops	
			 antinode 	 question and 	LCD projectors	Graphic organizers
				hypothesize	Scientific calculators Googledocs.com	• Journals
		1.10.3	Differentiating between transverse, longitudinal, and surface waves.	 use evidence to 	 http://dsc.discovery.com/ 	44 lot 1 = 4 llt
				draw conclusions	• http://mw.concord.org/modeler/	 Multiple Intelligences assessments e.g.
		1.10.4	Investigating examples of wave phenomena (e.g. ripples in water, sound	 use tools, and 	http://ri.itest.portal.concord.org/preview/ http://science-class.net/	role playing -
			<u>waves, seismic waves</u>). 10a	techniques	 http://sciencespot.net/index.html 	bodily kinesthetic,
					http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators	graphic organizing - visual,
		1.10.5	Distinguishing between different behaviors of waves	Facilitates the	http://smithsonianeducation.org/educators http://www.howstuffworks.com/	collaboration-
			 reflection 	learning cycle of	nces.ed.gov/nagtionsreportcard/itmrls	interpersonal
			 refraction 	science through the	Tweentribune.com (student responding) www.windowsintowonderland.org (virtual)	Oral presentations
			• diffraction	5 E's of	fieldtrips)	
			• interference	 engagement 	• www.acs.org	 Performance/problem- based tasks
			• constructive	 exploration 	 www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) 	bused lusks
			• destructive	 explanation 	www.brainpop.com	Rubrics
				 elaboration 	<u>www.discovery.com</u>	Inquiry Informational
		1.10.6	Comparing and contrasting electromagnetic waves to mechanical waves.	 evaluation 	www.ebecri.orq www.educationworld.com/ (Laws of Motion)	writing
			10b		 www.efieldtrips.org (energy field trips) 	-
		4 40 7			<u>www.funderstanding.com/coaster</u> (force and	Tests and quizzes
		1.10.7	Describing and providing examples of the different waves included in the		motion) • www.lessoncorner.com/science (lesson corner)	Writing (ELA Common
			electromagnetic spectrum.		• www.nbclearn.com/olympics (force & motion)	Core: arguments, informational,
		4.40.0			www.polleverywhere.comwww.ride.ri.gov	responding to
		1.10.8	Understanding the basis of visible light and color.		www.ride.ri.gov www.sciencenetlinks.com (benchmarks and	informational text)
		1 10 0			lessons)	
		1.10.9	Qualifying the relationship between frequency and wavelength of any		www.sciencespot.net www.thinkfinity.org	
			wave. 10c		www.unitedstreaming.com	
			v=λ f			
		4 40 40	DENGLIM ADV DD ODLEMG		<u>Materials</u>	
		1.10.10			CPO equipment Flinn: Electromagnet Kit	
			PS3 (9-11) SAE -10 Explain the effects on wavelength and frequency		• I min Electromagnet Kit	
			as electromagnetic waves interact with matter (e.g., light diffraction,			
			blue sky). (<mark>ASSESSMENT TARGET</mark>)			
			 MCAS 2006, Intro Physics, p. 472, #2 (I) modify 			
			 MCAS 2006, Intro Physics, p. 472, #2 (1) modify MCAS 2006, Intro Physics, p. 486, #35 (F) modify 			
			 MCAS 2006, Intro Physics, p. 476, #11 (F)]

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
	 MCAS 2006, Intro Physics, p. 483, #27 (F) modify 			
	 MCAS 2006, Intro Physics, p. 477, #13 (S) modify 			
	 MCAS 2006, Intro Physics, p. 477, #19 (5) modify 			
	 MCAS 2006, Intro Physics, p. 478, #18 (5) modify MCAS 2006, Intro Physics, p. 478, #18 (F) modify 			
	 MCAS 2007, Intro Physics, p. 514, #7 (I,F) modify 			
	MCAS 2007, Intro Physics, p. 523, #26 (5)			
	MCAS 2008, Intro Physics, p. 527, #44 (I)			
	 MCAS 2009, Intro Physics, p.312, #45 (I) 			
	 MCAS 2010, Intro Physics, p. 352, #32 (I) 			
	 GIZMO™ (East Providence and Middletown only), Refraction 			
3. EARTH AND	ESS1 (9-11)- 1 Students demonstrate an understanding of processes and	Facilitates the	Textbook	COMMON
SPACE	change over time within earth systems by	scientific inquiry	Physical Science Concepts in Action with Earth	ASSESSMENTS
SCIENCE		method	and Space Science, Prentice Hall	Assessments Target
		collect data	Supplementany backs/material	Benchmark Problems Tacks
3.1 Processes	3.1.1 Understanding plate tectonics and plate boundaries.	• communicate	• AGS Earth Science, Prentice Hall	Common Tasks Formative and
and Change	, , , , , , , , , , , , , , , , , , ,	understanding and	Bill Nye 100 Greatest Discovery Series	Summative
and onlings	3.1.2 Understanding structures of the Earth and geological events that may.	ideas	 Chemistry a Natural Approach, Hsu 	Assessments
	include:	 design, conduct, 	 <u>Chemistry Concepts and Applications</u>, Glencoe <u>Chemistry Matter and Change</u>, Glencoe 	
Enduring	layers of the Earth's interior	and critique	Current science magazines	<u>SUGGESTED</u>
Knowledge	o core	investigations	• Earth Science Concepts and Challenges,	FORMATIVE/
ESS1 - The		 represent, analyze, 	Pearson	SUMMATIVE
earth and earth	mantleasthenosphere	and interpret data	Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall	ASSESSMENTS
materials as we	· ·	•	Inside Earth, Prentice Hall	 Anecdotal records
know them today have developed	• lithosphere	experimental	• Level trade books, e.g. National Geographic	• Exhibits
over long periods	 mesosphere 	design	Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges,	- CAMIDITS
of time, through	o crust	• observe	Pearson	• Interviews
continual change	 continental 	• predict	• Physics a First Course, CPO	- Gnanhia ari
processes.	• oceanic	• question and	The Discovery Channel DVDs: Cosmic Collisions Cosmic Cosmic	Graphic organizers
	• earthquake	hypothesize	Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time,	• Journals
	• mountain ranges	use evidence to	Stephen Hawkins, updated and expanded	
	seismic waves	draw conclusions	edition, (class set of books)	 Multiple Intelligences assessments e.g.
	o P and S waves	 use tools, and 		role playing -
	• fault	techniques	Technology	bodily kinesthetic,
	• focus		Beyond Question SoftwareComputer lab	graphic organizing
	• epicenter	Facilitates the	• Gizmos TM	– visual, collaboration–
	 volcano (parts and types of volcanoes) 	learning cycle of	• Laptops	interpersonal
		science through the	LCD projectors Calculations	'
			Scientific calculators	 Oral presentations

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
	3	3.1.3 <u>Plotting the location of mountain ranges and recent earthquakes and volcanic eruptions to identify any existing patterns.</u> 1a.	5 E's ofengagementexplorationexplanation	Googledocs.com http://dsc.discovery.com/ http://mw.concord.org/modeler/ http://ri.itest.portal.concord.org/preview/ http://science-class.net/	Performance/problem- based tasks Rubrics
	3	.1.4 BENCHMARK PROBLEMS ESS1 (9-11) INQ+POC- 1 Provided with geologic data (including	elaboration evaluation	http://sciencespot.net/index.html http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators http://www.howstuffworks.com/	InquiryInformational writing
		movement of plates) on a given locale, predict the likelihood for an earth event (e.g., volcanoes, mountain ranges, islands, earthquakes). (ASSESSMENT TARGET)		nces.ed.gov/nagtionsreportcard/itmrls <u>Tweentribune.com</u> (student responding) www.windowsintowonderland.org (virtual fieldtrips) www.acs.org	Tests and quizzes Writing (ELA Common Core: arguments, informational,
		 NECAP 2009, Released Science Inquiry Task: Location p. 1-2, #1 (I) p. 3-7, # 2-5 (F) p. 8, # 6-8 (S) NECAP 2009, p. 2, #4 (S) 		www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.brainpop.com www.discovery.com www.ebecri.org www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips)	responding to informational text)
		 MCAS 2006, Intro Physics, p. 488, #39 (I,F) MCAS 2006, Intro Physics, p. 478, #18 (F) 		www.funderstanding.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywherecom	
		 NY Regents Jan. 2009, Physical Science, p. 23, # 77-79 (I,S) Extended Portfolio Task: "Nuclear Waste Storage" (East Providence only) 		www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org	
		 GIZMO™ (East Providence and Middletown only), Plate Tectonics, Pangaea 		www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	
3 EARTH AND SPACE SCIENCE		SS1 (9-11)-2 Students demonstrate an understanding of processes and hange over time within earth systems by	Facilitates the scientific inquiry method	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS • Assessments Target
3.2 Processes and Change	3	.2.1 <u>Using given data (diagrams, charts, narratives, etc.) and advances in technology to explain how scientific knowledge regarding plate tectonics has changed over time. 2a</u>	collect data communicate understanding and ideas	Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series • Chemistry a Natural Approach, Hsu • Chemistry Concepts and Applications, Glencoe	Benchmark Problems Common Tasks Formative and Summative Assessments
Enduring Knowledge • ESS1 - The	3	 Distinguishing between continental drift and plate tectonics including Alfred Wegener's hypothesis (continental drift) Pangaea 	design, conduct, and critique investigations represent, analyze,	Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall	SUGGESTED FORMATIVE/ SUMMATIVE

GSEs/		BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES	RESOURCES	EVIDENCE
earth and earth	2	2.3 Evaluating the evidence for plate tectonics theory including:	and interpret data	Earth's Changing Surface, Prentice Hall	ASSESSMENTS
materials as we	٥.		<u>'</u>	• <u>Inside Earth, Prentice Hall</u>	Anecdotal records
know them today		sea-floor spreading	• experimental	• Level trade books, e.g. National Geographic	7 Mecaulai records
have developed over long periods		• plate boundaries	design	Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges.	• Exhibits
of time, through		• transform	• observe	Pearson	Tukaniana
continual change		divergent	• predict	Physics a First Course, CPO	• Interviews
processes.		• convergent	 question and 	The Discovery Channel DVDs: Cosmic	Graphic organizers
		• collisional	hypothesize	Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time,	
		 mid-ocean ridges 	 use evidence to 	Stephen Hawkins, updated and expanded	• Journals
		 formation of oceanic crust 	draw conclusions	edition, (class set of books)	Multiple Intelligences
		 subduction of ocean plates 	 use tools, and 		assessments e.g.
			techniques	Technology	role playing -
	3.	2.4 BENCHMRK PROBLEMS		Beyond Question Software Computer lab	bodily kinesthetic, graphic organizing
		ESS1 (9-11) NOS-2 Trace the development of the theory of plate	Facilitates the	• Gizmos TM	- visual,
		tectonics or provide supporting geologic/geographic evidence that	learning cycle of	• Laptops	collaboration-
		supports the validity of the theory of plate tectonics. (ASSESSMENT	science through the	• LCD projectors	interpersonal
		TARGET)	5 E's of	Scientific calculators Googledocs.com	Oral presentations
		, , , , , , , , , , , , , , , , , , ,	 engagement 	http://dsc.discovery.com/	or ar presentations
		 NECAP 2008, p. 4, #5 (F) modify 	exploration	 http://mw.concord.org/modeler/ 	Performance/problem-
		 NECAP 2010, p. 2, #5 (S) modify 	explanation	 http://ri.itest.portal.concord.org/preview/ http://science-class.net/ 	based tasks
		• NECKI 2010, p. 2, #5 (3) Modify	elaboration	 http://science-ciass.net/ http://sciencespot.net/index.html 	Rubrics
		ANV December Asses 2007 Physical Colonia / Family Colonia is 10 #	elaboration evaluation	http://scilinks.nasa.gov/	• Inquiry
		NY Regents, Aug. 2007, Physical Science/Earth Science, p. 19, #	• evaluation	 http://smithsonianeducation.org/educators 	 Informational
		63-64 (F,S)		http://www.howstuffworks.com/	writing
				 nces.ed.gov/nagtionsreportcard/itmrls <u>Tweentribune.com</u> (student responding) 	Tests and guizzes
		 NY Regents June 2007, Physical Science/Earth Science p.24, #77- 		www. windowsintowonderland.org (virtual	Too to and quizzos
		80 (I)		fieldtrips)	Writing (ELA Common
				• www.acs.org	Core: arguments, informational,
				www.acs.org/chemmatters www.beaconlearningcenter.com (lessons)	responding to
				www.brainpop.com	informational text)
				www.discovery.com	
				• www.ebecri.org	
				 www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) 	
				www.funderstanding.com/coaster (force and	
				motion)	
				<u>www.lessoncorner.com/science</u> (lesson corner)	
				www.nbclearn.com/olympics (force & motion) www.polleverywherecom	
				www.poneverywherecom www.ride.ri.gov	
				www.sciencenetlinks.com (benchmarks and	
				lessons)	
				www.sciencespot.net www.thinkfinity.org	
				www.tninkfinity.org www.unitedstreaming.com	
				- TTTT,GTTTCGGTTCGTTTTTTTTTTTTTTTTTTTTTTT	

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES	Materials • CPO equipment • Flinn: Electromagnet Kit	EVIDENCE
3 EARTH		Facilitates the	Textbook	COMMON
AND SPACE SCIENCE	ESS1 (9-11)-3 Students demonstrate an understanding of processes and change over time within earth systems by \dots	scientific inquiry method	Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	ASSESSMENTS • Assessments Target • Benchmark Problems
3.3 Processes and Change	3.3.1 Understanding the Rock Cycle and types of rocks • igneous	 collect data communicate understanding and 	Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series • Chemistry a Natural Approach, Hsu	Common Tasks Formative and Summative Assessments
Enduring Knowledge	sedimentarymetamorphic	ideasdesign, conduct,and critique	Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges,	SUGGESTED FORMATIVE/
ESS1 - The earth and earth materials as we know them today	3.3.2 <u>Explaining how heat (produced by friction, radioactive decay and pressure) affects the Rock Cycle.</u> 3a	investigationsrepresent, analyze,and interpret data	Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall	SUMMATIVE ASSESSMENTS • Anecdotal records
have developed over long periods of time, through continual change	3.3.3 Explaining how convection circulations of the mantle initiate the movement of the crustal plates which then cause plate movement and seismic activity. 3b	experimental designobserve	Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall Physical Science – Concepts and Challenges,	Exhibits Interviews
processes.	3.3.4 Investigating and using evidence to explain that conservation in the	predictquestion and	Pearson Physics a First Course, CPO The Discovery Channel DVDs: Cosmic	Graphic organizers
	amount of earth materials occurs during the Rock Cycle. 3c	hypothesize use evidence to	Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded	Journals Multiple Intelligences
	3.3.5 Explaining how the physical and chemical processes of the Earth alter the crust (e.g. seafloor spreading, hydrologic cycle, weathering, element cycling). 3d	draw conclusions use tools, and techniques	edition, (class set of books) Technology Beyond Question Software	assessments e.g. role playing - bodily kinesthetic, graphic organizing
	3.3.6 BENCHMARK PROBLEMS ESS1 (9-11) SAE+ POC-3 Explain how internal and external sources of heat (energy) fuel geologic processes (e.g., rock cycle, plate tectonics,	Facilitates the learning cycle of science through the	Computer lab Gizmos™ Laptops LCD projectors Scientific calculators	 visual, collaboration- interpersonal Oral presentations
	sea floor spreading). (ASSESSMENT TARGET)	5 E's ofengagementexploration	Googledocs.com http://dsc.discovery.com/ http://mw.concord.org/modeler/	Performance/problem- based tasks
	 NECAP 2008, p. 4, #5 (I,F,S) modify NECAP 2009, p. 3 #5 (S) modify NECAP 2010, p. 3, #6 (F) modify 	explanationelaborationevaluation	 http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators 	Rubrics Inquiry Informational writing
	NY Regents June 2007, Physical Science/Earth Science, p. 24, # 77-80 (I,S) NY Regents June 2009, Physical Science/Earth Science, p. 24, # 27-80 (I,S)		http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding)	Tests and quizzes
	NY Regents June 2009, Physical Science/Earth Science, p. 9, # 33		www. windowsintowonderland.org (virtual fieldtrips)	Writing (ELA Common

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
	(I,F,S) modify • GIZMO™ (East Providence and Middletown only), Rock Cycle		www.acs.org www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (lessons) www.discovery.com www.ebecri.org www.ebecri.org www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.yride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	Core: arguments, informational, responding to informational text)
3 EARTH	ESS1 (9-11)—4 Students demonstrate an understanding of processes and	Facilitates the	Textbook	COMMON
AND SPACE SCIENCE	change over time by 3.4.1 Describing various dating methods to determine the age of different	scientific inquiry method collect data communicate	Physical Science Concepts in Action with Earth and Space Science, Prentice Hall Supplementary books/material • AGS Earth Science, Prentice Hall	ASSESSMENTS - Assessments Target - Benchmark Problems - Common Tasks - Formative and
and change	rock structures. • carbon-14	understanding and ideas design, conduct,	Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe	Summative Assessments
Enduring Knowledge ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.	 3.4.2 BENCHMARK PROBLEMS ESS1 (9-11) INQ+POC+ MAS—4 Relate how geologic time is determined using various dating methods (e.g. radioactive decay, rock sequences, fossil records). (ASSESSMENT TARGET) NECAP 2008, p. 4 #6 (S) modify NECAP 2009, p. 3 #5 (S) modify NECAP 2010, p. 3, #6 (I,F,S) modify NY Regents June 2008, Physical Science/Earth Science, p. 20, #66-67 (S) 	 design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe predict question and hypothesize use evidence to draw conclusions 	Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books)	SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS • Anecdotal records • Exhibits • Interviews • Graphic organizers • Journals • Multiple Intelligences assessments e.g.

GSEs/ STANDARDS	BENCHMARKS East Providence, Middletown and Newport	INSTRUCTIONAL STRATEGIES	RESOURCES	ASSESSMENT EVIDENCE
STANDARDS	• GIZMO™ (East Providence and Middletown only), Half Life	• use tools, and techniques Facilitates the learning cycle of science through the 5 E's of • engagement • exploration • explanation • elaboration • evaluation	Technology Beyond Question Software Computer lab Gizmos TM Laptops LCD projectors Scientific calculators Googledocs.com http://dsc.discovery.com/ http://mw.concord.org/modeler/ http://science-class.net/ http://sciencespot.net/index.html http://sciencespot.net/index.html http://sciencespot.net/ordex.com/ nes.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips) www.dcs.org/chemmatters www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (lessons) www.discovery.com www.discovery.com www.efieldtrips.org (energy field trips) www.fieldtrips.org (energy field trips) www.fieldtrips.org (energy field trips) www.fieldrips.org (energy field trips) www.placeonlearning.com/coaster (force and motion) www.essoncorner.com/science (lesson corner) www.polleverywherecom www.polleverywherecom www.polleverywherecom www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.sciencespot.net www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	role playing - bodily kinesthetic, graphic organizing - visual, collaboration- interpersonal Oral presentations Performance/problem- based tasks Rubrics Inquiry Informational writing Tests and quizzes Writing (ELA Common Core: arguments, informational, responding to informational text)
3. EARTH AND SPACE SCIENCE 3.5 Evolution of	ESS3 (9-11)-5 Students demonstrate an understanding of the origins and evolution of galaxies and the universe by 3.5.1 Using appropriate prompts (diagrams, charts, narratives, etc.) students	Facilitates the scientific inquiry method collect data communicate	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall Supplementary books/material • AGS Earth Science, Prentice Hall	COMMON ASSESSMENTS • Assessments Target • Benchmark Problems • Common Tasks • Formative and

GSEs/		BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES	RESOURSES	EVIDENCE
galaxies and		will explain how scientific knowledge regarding the structure of the	understanding and	Bill Nye 100 Greatest Discovery Series	Summative
the		universe has changed over time due to advances in technology which	ideas	Chemistry a Natural Approach, Hsu	Assessments
universe		accumulates new evidence to redefine scientific theories and ideas. 5a	 design, conduct, 	<u>Chemistry Concepts and Applications</u> , Glencoe Chemistry Matter and Change, Glencoe	
			and critique	Current science magazines	SUGGESTED
Enduring	3.5.2	BENCHMARK PROBLEMS	investigations	Earth Science Concepts and Challenges, Pearson	FORMATIVE/
Knowledge		ESS3 (9-11) NOS-5Explain how scientific theories about the structure	 represent, analyze, 	Earth Science, Prentice Hall	SUMMATIVE
• ESS3 - The		of the universe have been advanced through the use of sophisticated	and interpret data	• Earth's Changing Surface, Prentice Hall	• Anecdotal records
origin and		technology (e.g., space probes; visual, radio and x-ray telescopes.	• experimental	Inside Earth, Prentice Hall	Anecdotal records
evolution of galaxies and the		(ASSESSMENT TARGET)	design	Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall	• Exhibits
universe			observe	Physical Science - Concepts and Challenges,	Total
demonstrate fundamental		 NECAP 2008, p. 4, #7 (I) modify 	• predict	Pearson • Physics a First Course, CPO	Interviews
principles of			• question and	The Discovery Channel DVDs: Cosmic	Graphic organizers
physical science			hypothesize	Collisions, Cosmos Carl Sagan	Journals
across vast distances and			use evidence to	The Illustrated Brief History of Time. Stephen Hawkins, updated and expanded	Journals
time			draw conclusions	edition, (class set of books)	Multiple Intelligences
			 use tools, and 		assessments e.g. role playing -
			techniques	Technology	bodily kinesthetic,
			,	Beyond Question Software Computer lab	graphic organizing
			Facilitates the	• Gizmos™	- visual, collaboration-
			learning cycle of	• Laptops	interpersonal
			science through the	LCD projectors Scientific calculators	,
			5 E's of	Googledocs.com	Oral presentations
			 engagement 	http://dsc.discovery.com/	Performance/problem-
			 exploration 	 http://mw.concord.org/modeler/ http://ri.itest.portal.concord.org/preview/ 	based tasks
			 explanation 	http://science-class.net/	Rubrics
			 elaboration 	http://sciencespot.net/index.html	• Inquiry
			 evaluation 	http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators	 Informational
				http://www.howstuffworks.com/	writing
				nces.ed.gov/nagtionsreportcard/itmrls	Tests and quizzes
				Tweentribune.com (student responding) www.windowsintowonderland.org (virtual	Mairing (FLA Con
				fieldtrips)	Writing (ELA Common Core: arguments,
				• www.acs.org	informational,
				www.acs.org/chemmatters www.beaconlearningcenter.com (lessons)	responding to informational text)
				www.brainpop.com	informational text)
				• www.discovery.com	
				www.ebecri.org www.educationworld.com/ (Laws of Motion)	
				• www.efieldtrips.org (energy field trips)	
				<u>www.funderstanding.com/coaster</u> (force and	
				motion) • www.lessoncorner.com/science (lesson corner)	
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GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES	www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment	EVIDENCE
3. EARTH AND SPACE SCIENCE		ESS3 (9-11)-6 Students demonstrate an understanding of the formation of the universe by	Facilitates the scientific inquiry method	Flinn: Electromagnet Kit Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON_ ASSESSMENTS • Assessments Target • Benchmark Problems
3.6 "Big Bang" Theory		3.6.1 Explaining the cause and reason for the Doppler Effect.	communicate understanding and ideas	Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series • Chemistry a Natural Approach, Hsu • Chemistry Concepts and Applications, Glencoe	Common Tasks Formative and Summative Assessments
Enduring Knowledge ESS3 - The origin and		3.6.2 Relating the electromagnetic spectrum to Hubble's Law.3.6.3 Interpreting blue and red shift data.	 design, conduct, and critique investigations 	Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson	SUGGESTED FORMATIVE/ SUMMATIVE
evolution of galaxies and the universe demonstrate		3.6.4 Using data (diagrams, charts, narratives, etc.) to explain how the "Big Bang" theory has developed over time citing evidence to support its	 represent, analyze, and interpret data experimental design 	Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall	ASSESSMENTS • Anecdotal records • Exhibits
fundamental principles of physical science across vast distances and time		occurrence (Doppler Effect/red shift). 6a 3.6.5 BENCHMARK PROBLEMS ESS3 (9-11) NOS-6 Provide scientific evidence that supports or refutes the "Big Bang" theory of how the universe was formed.	 observe predict question and hypothesize use evidence to 	Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time,	Interviews Graphic organizers Journals
		 (ASSESSMENT TARGET) NECAP 2010, p.3, #7 (S) modify NECAP 2008, Practice Test, p.5, #11 (S) modify 	draw conclusions use tools, and techniques	Stephen Hawkins, updated and expanded edition, (class set of books) Technology Beyond Question Software Computer lab	Multiple Intelligences assessments e.g. role playing – bodily kinesthetic, graphic organizing
		MCAS 2006, Intro to Physics, p. 477, #13 (F) modify	Facilitates the learning cycle of science through the 5 E's of	Gizmos™ Laptops LCD projectors Scientific calculators Googledocs.com	- visual, collaboration- interpersonal Oral presentations
			engagementexploration	http://dsc.discovery.com/ http://mw.concord.org/modeler/	Performance/problem- based tasks

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
STANDARDS	East Providence, Middletown and Newport	explanation elaboration evaluation	http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html http://sciencespot.net/index.html http://sciencespot.net/index.html http://sciencespot.net/index.html http://smithsonianeducation.org/educators http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips) www.acs.org www.acs.org www.beaconlearningcenter.com (lessons) www.brainpop.com www.brainpop.com www.brainpop.com www.discovery.com www.ebecri.org www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.funderstanding.com/science (lesson corner) www.nundersoncorner.com/science (lesson corner) www.polleverywherecom www.polleverywherecom www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	Rubrics Inquiry Informational writing Tests and quizzes Writing (ELA Common Core: arguments, informational, responding to informational text)
3. EARTH AND SPACE SCIENCE	ESS3 (9-11)-7 Students demonstrate an understanding of processes and change over time within the system of the universe (Scale, Distances, Star Formation, Theories, Instrumentation) by 3.7.1 Understanding the electromagnetic waves and how they relate to cosmic	Facilitates the scientific inquiry method collect data communicate understanding and	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series	COMMON ASSESSMENTS ASSESSMENTS ASSESSMENTS Target Benchmark Problems Common Tasks Formative and Summative
Enduring Knowledge ES53 - The origin and evolution of galaxies and the universe	background radiation 3.7.2 Describing the parts and behaviors of waves, e.g. • parts • amplitude • frequency • wave lengths	ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental	Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic	Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS • Anecdotal records

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES	M2000M020	EVIDENCE
demonstrate	• behaviors	design	Motion Forces and Energy, Prentice Hall	• Exhibits
fundamental principles of	o diffraction	• observe	Physical Science - Concepts and Challenges, Pearson	Interviews
physical science	 refraction 	 predict 	Physics a First Course, CPO	
across vast distances and	 reflection 	 question and 	The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan	Graphic organizers
time	o interference	hypothesize	The Illustrated Brief History of Time,	• Journals
	2.7.2 Applicable management of management in the constitution of	use evidence to draw conclusions	Stephen Hawkins, updated and expanded edition, (class set of books)	Multiple Intelligences
	3.7.3 Applying the properties of waves/particles to explain the movement, location, and composition of the stars and other bodies in the universe.	 use tools, and 	edition, (class set of books)	assessments e.g.
	7a	techniques	<u>Technology</u>	role playing -
	/u	rechniques	Beyond Question Software Computer lab	bodily kinesthetic, graphic organizing
	3.7.4 BENCHMARK PROBLEMS	Facilitates the	• Computer lab • Gizmos™	- visual,
	ESS3 (9-11) SAE -7 Based on the nature of electromagnetic waves,	learning cycle of	• Laptops	collaboration- interpersonal
	explain the movement and location of objects in the universe or their	science through the	LCD projectors Scientific calculators	inter per sonar
	composition (e.g., red shift, blue shift, line spectra) (ASSESSMENT	5 E's of	Googledocs.com	Oral presentations
	TARGET)	 engagement 	http://dsc.discovery.com/http://mw.concord.org/modeler/	Performance/problem-
		 exploration 	http://ri.itest.portal.concord.org/preview/	based tasks
	 NECAP 2010, p. 3, #7 (S) modify 	 explanation 	http://science-class.net/	Rubrics
		 elaboration 	http://sciencespot.net/index.html http://scilinks.nasa.gov/	• Inquiry
	 GIZMO™ (East Providence and Middletown only), Star Spectra 	 evaluation 	http://smithsonianeducation.org/educators	 Informational writing
			 http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls 	writing
			Tweentribune.com (student responding)	 Tests and quizzes
			www. windowsintowonderland.org (virtual	Writing (ELA Common
			fieldtrips) • www.acs.org	Core: arguments,
			www.acs.org/chemmatters	informational, responding to
			www.beaconlearningcenter.com (lessons) www.brainpop.com	informational text)
			www.discovery.com	
			• www.ebecri.org	
			www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips)	
			 www.funderstanding.com/coaster (force and 	
			motion) • www.lessoncorner.com/science (lesson corner)	
			www.nesson.com/olympics (force & motion)	
			<u>www.polleverywherecom</u>	
			www.ride.ri.gov www.sciencenetlinks.com (benchmarks and	
			lessons)	
			www.sciencespot.net www.thinkfinity.org	
			www.unitedstreaming.com	
			<u>Materials</u>	
			CPO equipment	

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES	Flinn: Electromagnet Kit	EVIDENCE
3. EARTH AND SPACE SCIENCE	ESS3 (9-11)-8 Students demonstrate an understanding of the life cycle of stars by	Facilitates the scientific inquiry method collect data	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS Assessments Target Benchmark Problems
3.8 Life cycle of stars	3.8.1 Relating the process of star formation to the size of the star and including the interaction of the force of gravity, fusion, and energy release in the development of the star identifying and describing the characteristics common to most stars in the universe. 8a	 communicate understanding and ideas design, conduct, 	Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series • Chemistry a Natural Approach, Hsu • Chemistry Concepts and Applications, Glencoe • Chemistry Matter and Change, Glencoe	Common Tasks Formative and Summative Assessments SUGGESTED
Enduring Knowledge ESS3 - The origin and evolution of galaxies and the universe demonstrate fundamental	 3.8.2 Describing the ongoing processes involved in star formation, their life cycles and their destruction. 8b 3.8.3 BENCHMARK PROBLEMS ESS3 (9-11) POC+SAE - 8 Explain the relationships between or among the energy produced from nuclear reactions, the origin of elements, and the life cycle of stars. (ASSESSMENT TARGET) 	and critique investigations represent, analyze, and interpret data experimental design observe predict	Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson	FORMATIVE/ SUMMATIVE ASSESSMENTS • Anecdotal records • Exhibits • Interviews
principles of physical science across vast distances and time	 NECAP 2008, p. 4, #7 (I,F) modify NECAP 2009, p. 3, #6 (I) modify 	 question and hypothesize use evidence to draw conclusions use tools, and techniques 	Physics a First Course, CPO The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books) Technology Beyond Question Software	Graphic organizers Journals Multiple Intelligences assessments e.g. role playing – bodily kinesthetic, graphic organizing
		Facilitates the learning cycle of science through the 5 E's of engagement exploration	Computer lab Gizmos TM Laptops LCD projectors Scientific calculators Googledocs.com http://dsc.discovery.com/ http://mw.concord.org/modeler/	- visual, collaboration- interpersonal Oral presentations Performance/problem- based tasks
		explanationelaborationevaluation	http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html http://scilinks.nasa.gov/ http://smithsonianeducation.org/educators http://www.howstuffworks.com/	Rubrics Inquiry Informational writing
			nces.ed.gov/nagtionsreportcard/itmrls <u>Tweentribune.com</u> (student responding) www.windowsintowonderland.org (virtual fieldtrips) <u>www.acs.org</u>	Tests and quizzes Writing (ELA Common Core: arguments,

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
				www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.brainpop.com www.discovery.com www.discovery.com www.ebecri.org www.ebecri.org www.grunderstanding.com/(Laws of Motion) www.funderstanding.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	informational, responding to informational text)
4 CONSTRUCT OF INQUIRY 4.1 Formulating Questions and		 4.1.1. Analyze information from observations, research, or experimental data for the purpose of formulating a question, hypothesis, or prediction. analyze scientific data and use that information to generate a 	Facilitates the scientific inquiry method collect data communicate understanding and	Physical Science Concepts in Action with Earth and Space Science, Prentice Hall Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series	COMMON ASSESSMENTS Assessments Target Benchmark Problems Common Tasks Formative and Summative
Hypothesiz- ing		 testable question, hypothesis, or prediction that includes a cause and effect relationship generate a question, hypothesis or a prediction which is reasonable in terms of available evidence show connections between hypothesis or prediction and scientific knowledge, observations, or research support their question, hypothesis, or prediction with a scientific explanation refine or refocus a question or hypothesis using experimental data, research, or scientific knowledge 	ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe predict	Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO	SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS • Anecdotal records • Exhibits • Interviews
		 4.1.2 Construct a coherent argument in support of a question, hypothesis, prediction identify evidence that supports or does not support a question, hypothesis or prediction explain the cause and effect relationship within the hypothesis 	 question and hypothesize use evidence to draw conclusions use tools, and 	The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time. Stephen Hawkins, updated and expanded edition, (class set of books)	Graphic organizers Journals Multiple Intelligences assessments e.g. role playing -

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	e use a logical argument to support the hypothesis or prediction using scientific concepts, principles, or observations 4.1.3 Make and describe observations in order to ask questions, hypothesize, make predictions related to topic. • connect observations and data to a question, hypothesis, or prediction	strategies techniques Facilitates the learning cycle of science through the 5 E's of engagement exploration explanation elaboration evaluation	Technology Beyond Question Software Computer lab Gizmos™ Laptops LCD projectors Scientific calculators Googledocs.com http://dsc.discovery.com/ http://mw.concord.org/modeler/ http://sciencespot.net/index.html http://sciencespot.net/index.html http://sciencespot.net/vortent/sciencespot.net/org/ http://sciencespot.net/org/ http://sww.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www. windowsintowonderland.org (virtual fieldtrips) www.acs.org www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (force and motion) www.efieldtrips.org (energy field trips) www.lassoncorner.com/science (lesson corner) www.lassoncorner.com/science (lesson corner) www.pleaconlearning.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.pleaconlearning.com/olympics (force & motion) www.pleaconcenetlinks.com (benchmarks and lessons) www.polleverywherecom www.polleverywherecom www.polleverywherecom www.ride.ri.gov www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	bodily kinesthetic, graphic organizing - visual, collaboration- interpersonal Oral presentations Performance/problem- based tasks Rubrics Inquiry Informational writing Tests and quizzes Writing (ELA Common Core: arguments, informational, responding to informational text)
4 CONSTRUCT OF INQUIRY 4.2 Planning and	Students demonstrate an understanding of the scientific inquiry method by: 4.2.1 Identify information/evidence that needs to be collected in order to	Facilitates the scientific inquiry method • collect data	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS • Assessments Target • Benchmark Problems
Critiquing	answer the question, hypothesis, prediction	communicate	Supplementary books/material AGS Earth Science, Prentice Hall	Common TasksFormative and

STRATEGIES	GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
identify the variables that may affect the outcome of the experiment or investigation identify the variables that may affect the outcome of the experiment or investigation design an appropriate format for recording data and include relevant technology evaluate multiple data sets to determine which data are relevant to the question, hypothesis or prediction 4.2.2 Develop an organized and logical approach to investigating the question, including controlling variables develop a procedure to gather sufficient evidence (including multiple triols) to answer the question, or test the hypothesis, or prediction. develop a procedure that lists steps sequentially and logically and incorporates the use of appropriate technology explain which variable will be manipulated or changed (independent) and which variable will be affected by those changes (dependent) investigation use scientific terminology that supports the identified procedure including variables, controls, materials, and tools, evaluate the organization and logical approach of a given procedure including variables, controls, materials, and tools, evaluate investigation explorate materials, tools, procedures, and assessment sequence of a capture of the control group and the experimental group in an investigation of a capture investigation explorated materials, tools, procedures, and assessment sequence and success on successments and incorporate sequence of the develop approach of a given procedure including variables, controls, materials, and tools, evaluate investigation explorate materials, tools, procedures, and assessment sequence and success on successments and the design of the procedure including variables, controls, materials, and tools, evaluation explorated the use of properior and success of materials, and tools, evaluation explorated the use of procedure including variables, controls, materials, and tools, evaluation explorated the use of the procedure of th					
evaluate the investigation for the safe and ethical considerations of the materials, tools, and procedures. www.brainpop.com www.discovery.com www.ebecri.org www.educationworld.com/ (Laws of Motion)	Investiga- tions	 answer the question, or support or refute the hypothesis or prediction identify the variables that may affect the outcome of the experiment or investigation design an appropriate format for recording data and include relevant technology evaluate multiple data sets to determine which data are relevant to the question, hypothesis or prediction Develop an organized and logical approach to investigating the question, including controlling variables develop a procedure to gather sufficient evidence (including multiple trials) to answer the question, or test the hypothesis, or prediction; develop a procedure that lists steps sequentially and logically and incorporates the use of appropriate technology explain which variable will be manipulated or changed (independent) and which variable will be affected by those changes (dependent) identify variables that will be kept constant throughout the investigation distinguish between the control group and the experimental group in an investigation distinguish between the control group and the experimental group in an investigation use scientific terminology that supports the identified procedures evaluate the organization and logical approach of a given procedure including variables, controls, materials, and tools. evaluate investigation design, including opportunities to collect appropriate and sufficient data 4.2.3 Provide reasoning for appropriateness of materials, tools, procedures, and scale used in the investigation explain why the materials, tools, procedure, or scale for a task are appropriate or inappropriate for the investigation evaluate the investigation for the safe and ethical 	understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe predict question and hypothesize use evidence to draw conclusions use tools, and techniques Facilitates the learning cycle of science through the 5 E's of engagement exploration elaboration	Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books) Technology Beyond Question Software Computer lab Gizmos TM Laptops LCD projectors Scientific calculators Googledocs.com http://dsc.discovery.com/ http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html	Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS • Anecdotal records • Exhibits • Interviews • Graphic organizers • Journals • Multiple Intelligences assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration-interpersonal • Oral presentations • Performance/problem-based tasks • Rubrics • Inquiry • Informational writing • Tests and quizzes • Writing (ELA Common Core: arguments, informational,

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
				www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment	
4 CONSTRUCT OF INQUIRY		Students demonstrate an understanding of the scientific inquiry method by:	Facilitates the scientific inquiry	Flinn: Electromagnet Kit Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall	COMMON ASSESSMENTS
4.3 Conducting Investigations		 4.3.1 Follow procedures for collecting and recording qualitative or quantitative data, using equipment or measurement devices accurately record precise data and observations that are consistent with the procedure of the investigation include appropriate units of all measurements use appropriate measurement tools correctly to collect data record and label relevant details within a scientific drawing 4.3.1 Use accepted methods for organizing, representing, and manipulating data represent data accurately in an appropriate graph/table/chart; include titles, labels, keys or symbols as needed select a scale appropriate for the range of data to be plotted; 	method collect data communicate understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental design observe predict	Supplementary books/material AGS Earth Science, Prentice Hall Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO	Assessments Target Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/SUMMATIVE ASSESSMENTS Anecdotal records Exhibits Interviews
		 use scientific terminology to label representations identify relationships among variables based upon evidence 4.3.2 Collect sufficient data to study question, hypothesis, or relationships show understanding of the value of multiple trials relate data to original question, hypothesis or prediction determine if the quantity of data is sufficient to answer the question or support or refute the hypothesis or prediction 4.3.3 Summarize results based on data consider all data when developing an explanation/conclusion identify patterns and trends in data 	question and hypothesize use evidence to draw conclusions use tools, and techniques Facilitates the learning cycle of science through the 5 E's of engagement	• The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan • The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books) Technology • Beyond Question Software • Computer lab • Gizmos TM • Laptops • LCD projectors • Scientific calculators • Googledocs.com • http://dsc.discovery.com/	Graphic organizers Journals Multiple Intelligences assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration-interpersonal Oral presentations Performance/problem-

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
			explanation elaboration evaluation	http://ri.itest.portal.concord.org/preview/ http://science-class.net/ http://sciencespot.net/index.html http://sciinks.nasa.gov/ http://smithsonianeducation.org/educators http://www.howstuffworks.com/ nces.ed.gov/nagtionsreportcard/itmrls Tweentribune.com (student responding) www.windowsintowonderland.org (virtual fieldtrips) www.acs.org www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (lessons) www.beaconlearningcenter.com (force and motion) www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	Rubrics Inquiry Informational writing Tests and quizzes Writing (ELA Common Core: arguments, informational, responding to informational text)
4 CONSTRUCT OF INQUIRY 4.4 Developing and		5tudents demonstrate an understanding of the scientific inquiry method by: 4.4.1 Analyze data, including determining if data are relevant, artifact, irrelevant, or anomalous	Facilitates the scientific inquiry method collect data communicate	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall Supplementary books/material • AGS Earth Science, Prentice Hall	COMMON ASSESSMENTS Assessments Target Benchmark Problems Common Tasks Formative and
Evaluating Explanations		 identify data relevant to the task or question identify factors that may affect experimental results (e.g. variables, experimental error, environmental conditions) analyze data and sort into meaningful categories compare experimental data to accepted scientific data provided as part of the task use mathematical and statistical techniques to analyze data provide a reasonable explanation that accurately reflects data 	understanding and ideas design, conduct, and critique investigations represent, analyze, and interpret data experimental	AGS Earth Science, Prentice Hall Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu Chemistry Concepts and Applications, Glencoe Chemistry Matter and Change, Glencoe Current science magazines Earth Science Concepts and Challenges, Pearson Earth Science, Prentice Hall Earth's Changing Surface, Prentice Hall Inside Earth, Prentice Hall Level trade books, e.g. National Geographic	SUMMATIVE/ SUMMATIVE ASSESSMENTS ASSESSMENTS Anecdotal records

STANDARDS East Providence, Middletown and Newport use content understanding to question data that might seem inaccurate evaluate the significance of experimental data 4.4.2 Use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis identify and explain data, interpretations or conclusions that seem inaccurate use evidence to support or refute question or hypothesis use evidence to justify an interpretation of data or trend identify and explain differences or similarities between hypothesis and predictions and experimental data use evidence to justify a conclusion or explanation based on East Providence, Middletown and Newport design observ operation use evidence use evidence use evidence use vidence to support or refute question or hypothesis and predictions and experimental data use evidence to justify a conclusion or explanation based on	Physical Science - Concepts and Challenges, Pearson Physics a First Course, CPO The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books) Technology Beyond Question Software Computer lab Gizmos TM Laptops LCD projectors Scientific calculators	ASSESSMENT EVIDENCE • Exhibits • Interviews • Graphic organizers • Journals • Multiple Intelligences assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration-interpersonal
use content understanding to question data that might seem inaccurate evaluate the significance of experimental data 4.4.2 Use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis identify and explain data, interpretations or conclusions that seem inaccurate use evidence to support or refute question or hypothesis use evidence to justify an interpretation of data or trend identify and explain differences or similarities between hypothesis and predictions and experimental data use evidence to justify a conclusion or explanation based on technical design observity and experimental data science Facilitations and experimental data use evidence to justify a conclusion or explanation based on	 Motion Forces and Energy, Prentice Hall Physical Science - Concepts and Challenges. Pearson Physics a First Course, CPO The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books) Technology Beyond Question Software Computer lab GizmosTM Laptops LCD projectors Scientific calculators 	Tinterviews Graphic organizers Journals Multiple Intelligences assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration-
experimental data	agement Iloration Il	Oral presentations Performance/problembased tasks Rubrics Inquiry Informational writing Tests and quizzes Writing (ELA Common Core: arguments, informational, responding to informational text)

GSEs/	•	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS		East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
				Flinn: Electromagnet Kit	
5 LITERACY IN SCIENCE/ READING 5.1 Key Ideas and Details		5.1.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. • using claims and evidence • two column notes • MVP (most valuable points) • determining importance, highlighting 5.1.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. • two column notes • graphic organizers • concept maps 5.1.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text. • labs	Facilitates the scientific inquiry method	Textbook Physical Science Concepts in Action with Earth and Space Science, Prentice Hall Supplementary books/material • AGS Earth Science, Prentice Hall • Bill Nye 100 Greatest Discovery Series • Chemistry a Natural Approach, Hsu • Chemistry an Natural Approach, Hsu • Chemistry Matter and Change, Glencoe • Current science magazines • Earth Science, Prentice Hall • Level trade books, e.g. National Geographic • Motion Forces and Energy, Prentice Hall • Physical Science - Concepts and Challenges, Pearson • Physics a First Course, CPO • The Discovery Channel DVDs: Cosmic Collisions, Cosmos Carl Sagan • The Illustrated Brief History of Time, Stephen Hawkins, updated and expanded edition, (class set of books) Technology • Beyond Question Software • Computer lab • Gizmos™ • Laptops • LCD projectors • Scientific calculators • Googledocs.com • http://sciences.com/ • http://science-class.net/ • http://science-class.net/ • http://science-class.net/ • http://science-class.net/ • http://science-class.net/ • http://sciencespot.net/index.html • http://sciencespot.net/index.html • http://sciencespot.net/index.html • http://sciencespot.net/index.html • http://sciencespot.net/index.html	COMMON ASSESSMENTS Assessments Target Benchmark Problems Common Tasks Formative and Summative Assessments SUGGESTED FORMATIVE/ SUMMATIVE ASSESSMENTS Anecdotal records Exhibits Interviews Graphic organizers Journals Multiple Intelligences assessments e.g. role playing - bodily kinesthetic, graphic organizing - visual, collaboration- interpersonal Oral presentations Performance/problem- based tasks Rubrics Inquiry Informational writing Tests and quizzes
				www.windowsintowonderland.org (virtual fieldtrips) www.acs.org	Writing (ELA Common Core: arguments,

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
			www.acs.org/chemmatters www.beaconlearningcenter.com (lessons) www.brainpop.com www.discovery.com www.educationworld.com/ (Laws of Motion) www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	informational, responding to informational text)
5 LITERACY	Students	Models the use of		
IN		graphic organizers:	See resources in 5,1,1	See assessments
SCIENCE/ READING		sequence organizers (chains, cycle),		in 5.1.1
5.2 Craft and Structure	 5.2.1 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics. Frayer model/KIM memory cue prefix. suffix word maps 5.2.2 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction 	concept development (mind map), compare/contrast organizers (Venn diagrams, comparison charts), organizers (word web, concept		
	force, energy). two column notes graphic organizers concept maps 5.2.3 Analyze the author's purpose in providing an explanation, describing a	map), evaluation organizers (charts, scales), categorize/classif y organizers		

GSEs/ STANDARDS	•	BENCHMARKS East Providence, Middletown and Newport	INSTRUCTIONAL STRATEGIES	RESOURCES	ASSESSMENT EVIDENCE
		procedure, or discussing an experiment in a text, defining the question the author seeks to address	(categories, tree) • relational organizers (fish bone, pie chart)		
5 LITERACY IN SCIENCE/ READING		Students	See instructional strategies in 5.1.1	See resources in 5.1.1	See assessments in 5.1.1
5.3 Integration of Knowledge and Ideas		 5.3.1 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. visuals to words words to visuals 			
		 5.3.2 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. formulating questions and hypothesis developing and evaluating explanations 			
		 5.3.3 Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. video vs. reading simulations vs. reading researched 			
5 LITERACY IN SCIENCE/ READING		Students	See instructional strategies in 5.1.1	See resources in 5.1.1	See assessments in 5.1.1
5.4 Range and Level of Text Complexity		5.4.1 Read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.			
6. WRITING		Students		<u>Textbook</u>	<u>COMMON</u>

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES	RESOURCES	EVIDENCE
STANDARDS	Last Frovidence, initialities and Newport	Models the writing	Physical Science Concepts in Action with Earth	ASSESSMENTS
/ 1 Tauch Tomas	/ 1.1 White annual and a refusable designation and and	_	and Space Science, Prentice Hall	Assessments Target
6.1 Text Types	6.1.1 Write arguments using the scientific inquiry method	process: prewriting,		Benchmark Problems
and	 formulating questions and hypothesis 	drafting, revising,	Supplementary books/material	Common Tasks
Purposes	 planning and critiquing investigations 	editing, and publishing	AGS Earth Science, Prentice Hall	Formative and
	 conducting investigations 		Bill Nye 100 Greatest Discovery Series Chemistry a Natural Approach, Hsu	Summative Assessments
	 developing and evaluating explanations 	Models the use of	Chemistry Concepts and Applications, Glencoe	71336331[E1113
		graphic organizers:	Chemistry Matter and Change, Glencoe	SUGGESTED
	 Introduce precise claim(s), distinguish the claim(s) from alternate or 	 sequence 	Current science magazines	FORMATIVE/
	opposing claims, and create an organization that establishes clear	organizers	Earth Science Concepts and Challenges, Pearson	
	relationships among the claim(s), counterclaims, reasons, and evidence.	(chains, cycle),	Earth Science, Prentice Hall	SUMMATIVE
		• concept	• Earth's Changing Surface, Prentice Hall	• Anecdotal records
	 Develop claim(s) and counterclaims fairly, supplying data and evidence for 	development	Inside Earth, Prentice Hall	• Anecdoral records
	each while pointing out the strengths and limitations of both claim(s) and	(mind map),	Level trade books, e.g. National Geographic Motion Forces and Energy, Prentice Hall	• Exhibits
	counterclaims in a discipline-appropriate form and in a manner that	• compare/contrast	Physical Science - Concepts and Challenges,	
	anticipates the audience's knowledge level and concerns.	organizers (Venn	Pearson	• Interviews
	J	diagrams,	Physics a First Course, CPO The Discovery Channel DVDs: Cosmic	Graphic organizers
	 Use words, phrases, and clauses to link the major sections of the text, 	comparison	Collisions, Cosmos Carl Sagan	, ,
	create cohesion, and clarify the relationships between claim(s) and	charts),	The Illustrated Brief History of Time,	• Journals
	reasons, between reasons and evidence, and between claim(s) and		Stephen Hawkins, updated and expanded	Multiple Intelligences
	counterclaims.	organizers (word	edition, (class set of books)	assessments e.g.
	Counterclaims.	web, concept	Technology	role playing -
		map),	Beyond Question Software	bodily kinesthetic,
	Establish and maintain a formal style and objective tone while attending	 evaluation 	Computer lab	graphic organizing - visual,
	to the norms and conventions of the discipline in which they are writing.	organizers	• Gizmos™	collaboration-
		(charts, scales),	LaptopsLCD projectors	interpersonal
	 Provide a concluding statement or section that follows from or supports 	 categorize/classif 	Scientific calculators	On I was a substitute
	the argument presented.	y organizers	Googledocs.com	Oral presentations
		(categories, tree)	http://dsc.discovery.com/	Performance/problem-
		 relational 	 http://mw.concord.org/modeler/ http://ri.itest.portal.concord.org/preview/ 	based tasks
	6.1.2 Write informative/explanatory texts, including the narration of	organizers (fish	http://science-class.net/	Rubrics
	historical events, scientific procedures/ experiments, or technical	bone, pie chart)	http://sciencespot.net/index.html	• Rubrics • Inquiry
	processes.		http://scilinks.nasa.gov/	 Informational
			 http://smithsonianeducation.org/educators http://www.howstuffworks.com/ 	writing
	Introduce a topic and organize ideas, concepts, and information to make		nces.ed.gov/nagtionsreportcard/itmrls	Tests and guizzes
	important connections and distinctions; include formatting (e.g.,		<u>Tweentribune.com</u> (student responding)	- 10313 unu quizzes
	headings), graphics (e.g., figures, tables), and multimedia when useful to		www. windowsintowonderland.org (virtual fieldtains)	Writing (ELA Common
	aiding comprehension.		fieldtrips) • www.acs.org	Core: arguments,
	a.amg compronoisin.		• www.acs.org/chemmatters	informational, responding to
	Develop the topic with well-chosen, relevant, and sufficient facts,		<u>www.beaconlearningcenter.com</u> (lessons)	informational text)
	extended definitions, concrete details, quotations, or other information		www.brainpop.com www.discovery.com	
	extended definitions, concrete details, quotations, or other information		www.discovery.com www.ebecri.org	
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GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
	 and examples appropriate to the audience's knowledge of the topic. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. 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). 		www.educationworld.com/ (Laws of Motion) www.efieldtrips.org (energy field trips) www.funderstanding.com/coaster (force and motion) www.lessoncorner.com/science (lesson corner) www.nbclearn.com/olympics (force & motion) www.polleverywherecom www.ride.ri.gov www.sciencenetlinks.com (benchmarks and lessons) www.sciencespot.net www.thinkfinity.org www.unitedstreaming.com Materials CPO equipment Flinn: Electromagnet Kit	
6. WRITING 6.2 Production and Distribution of Writing	Students 6.2.1 Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience, e.g. lab reports. 6.2.2 Develop and strengthen writing as needed by • planning • revising • editing • rewriting • trying a new approach, focusing on addressing what is most significant for a specific purpose and audience 6.2.3 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. e.g. • Power Point TM • Photo stories • Spread sheets Excel	Models the writing process: prewriting, drafting, revising, editing, and publishing Models the use of graphic organizers: • sequence organizers (chains, cycle), • concept development (mind map), • compare/contrast organizers (Venn diagrams, comparison charts), • organizers (word web, concept map),	See resources in 6.1.1	See assessments in 6.1.1

GSEs/	BENCHMARKS	INSTRUCTIONAL	RESOURCES	ASSESSMENT
STANDARDS	East Providence, Middletown and Newport	STRATEGIES		EVIDENCE
	<u>Tweentribune.com</u> (student responding)	 evaluation 		
	Googledocs.com	organizers		
	• <u>www.polleverywhere.com</u>	(charts, scales),		
		 categorize/classif 		
		y organizers		
		(categories, tree)		
		 relational 		
		organizers (fish		
		bone, pie chart)		
6. WRITING	Students	Models the writing		
		<pre>process: prewriting,</pre>	See resources in 6.1.1	See assessments
6.3 Research to	6.3.1 Conduct short as well as more sustained research projects to	drafting, revising,		in 6.1.1
Build Knowledge	 answer a question (including a self generated question) or solve a problem 	editing, and publishing		
	 narrow or broaden the inquiry when appropriate 	Models the use of		
	 synthesize multiple sources on the subject, demonstrating 	graphic organizers:		
	understanding of the subject under investigation	 sequence 		
		organizers		
		(chains, cycle),		
	6.3.2 Gather relevant information from multiple authoritative print and digital	 concept 		
	sources	development		
	using advanced searches effectively	(mind map),		
	assessing the usefulness of each source in answering the research	• compare/contrast		
	question	organizers (Venn		
	 integrating information into the text selectively to maintain the flow of ideas 	diagrams,		
		comparison		
	 avoiding plagiarism and following a standard format for citation. 	charts),		
	6.3.3 Draw evidence from informational texts to support analysis, reflection,	 organizers (word web, concept 		
	and research.	map),		
	unu reseurch.	• evaluation		
		organizers		
		(charts, scales),		
		categorize/classif		
		y organizers		
		(categories, tree)		
		 relational 		
		organizers (fish		

GSEs/ STANDARDS	BENCHMARKS East Providence, Middletown and Newport	INSTRUCTIONAL STRATEGIES	RESOURCES	ASSESSMENT EVIDENCE
		bone, pie chart)		
6. WRITING 6.4 Range of Writing	6. 4. 1 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	See instructional strategies in 6.1.1	See resources in 6.1.1	See assessments in 6.1.1