Long Branch Public Schools

Pacing Guide - 8th Grade Science

Marking Period 1

Day	Unit	Topic	Desired Outcome	NGSS	ELA Common Core Standards: Reading	Writing	S & L	Math	21st Century	Technology
Opening Day 1			Rules, Procedures, Syllabus,							
Opening Day 2			Safety							
1	Unit 1	Elements to Compounds	Develop models to describe the atomic composition of simple molecules and extended structures.	PS1-1	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.7, WHST. 6-8.8	S.L. 8.5	MP.2, MP.4, 6.RP.A.3, 6.NS.C.5, 8.EE.A.3, 6.SP.B.4, 6.SP.B.5	9.1	8.1 & 8.2
2										
3										
4										
5										
6										
7	Summative Unit Assessment & Green Project Check Point			PS1						
8	Unit 2	Chemical Reactions and materials	Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.	PS1-2	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.7, WHST. 6-8.8	S.L. 8.5	MP.2, MP.4, 6.RP.A.3, 6.NS.C.5, 8.EE.A.3, 6.SP.B.4, 6.SP.B.5	9.1	8.1 & 8.2
9										
10										
11			Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.	PS1-3						
12										
13										
14	Summative Unit Assessment & Green Project Check Point			PS1						
15	Unit 3	Energy and Conservation	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	PS1-4	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.7, WHST. 6-8.8	S.L. 8.5	MP.2, MP.4, 6.RP.A.3, 6.NS.C.5, 8.EE.A.3, 6.SP.B.4, 6.SP.B.5	9.1	8.1 & 8.2
16										
17										
18			Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.	PS1-5						
19										
20										
21	Summative Unit Assessment & Green Project Check Point			PS1						

Marking Period 2

Day	Unit	Topic	Desired Outcome	CCCS	ELA Common Core Standards: Reading	Writing	S & L	Math	21st Century	Technology
1	Unit 4	Energy Transfer (Chemical)	Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.	PS1-6	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.1, WHST. 6-8.7, WHST. 6-8.8	S.L. 8.5	MP.2, MP.4, 6.RP.A.1, 6.RP.A.2, 6.RP.A.3, 7.RP.A.2, 6.NS.C.5, 8.EE.A.1, 8.EE.A.2,	9.1	8.1 & 8.2
2										
3										
4			Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.	PS3-3						
5										
6	Summative Unit Assessment & Green Project Check Point			PS 3, ESS 3						
7	Unit 5	Temperature, Heat and Kinetic Energy	Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.	PS3-4	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.1, WHST. 6-8.7, WHST. 6-8.8	S.L. 8.5	MP.2, MP.4, 6.RP.A.1, 6.RP.A.2, 6.RP.A.3, 7.RP.A.2, 6.NS.C.5, 8.EE.A.1,	9.1	8.1 & 8.2
8										
9										
10			Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object	PS3-5						
11										
12										
13	Summative Unit Assessment & Green Project Check Point			PS3						
14	Unit 6	molecules to cells	Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	LS1-1	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.1, WHST. 6-8.2, WHST. 6-8.7, WHST. 6-8.8, WHST. 6-8.9	S.L. 8.5	6.EE.C.9, 6.SP.A.2, 6.SP.B.4	9.1	8.1 & 8.2
15										
16										
17										
18										
19	Summative Unit Assessment & Green Project Check Point			LS1						
20	Review for Benchmark									
21	Benchmark									
22	Benchmark									

Marking Period 3

Day	Unit	Topic	Desired Outcome	CCCS	ELA Common Core Standards: Reading	Writing	S & L	Math	21st Century	Technology
1	Unit 7	Cells to systems	Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1-2	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.1, WHST. 6-8.2, WHST. 6-8.7, WHST. 6-8.8, WHST. 6-8.9	S.L. 8.5	6.EE.C.9, 6.SP.A.2, 6.SP.B.4	9.1	8.1 & 8.2
2										
3			Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	LS1-3						
4										
5										
6	Summative Unit Assessment & Introduction to Green School Project 3			LS1						
7	Unit 8	Chemical reactions to provide energy for cells	Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	LS1-6	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST. 6-8.1, WHST. 6-8.2, WHST. 6-8.7, WHST. 6-8.8, WHST. 6-8.9	S.L. 8.5	6.EE.C.9, 6.SP.A.2, 6.SP.B.4	9.1	8.1 & 8.2
8										
9										
10			Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	LS1-7						
11										
12										
13	Summative Unit Assessment			LS1						
14	Unit 9	Flow of Energy	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	LS2-3	RST.6-8.1, RST.6-8.3, RST.6-8.7, RI. 6.8	WHST. 6-8.1, WHST. 6-8.2, WHST. 6-8.9	S.L. 8.1, S.L. 8.4, S.L. 8.5	MP.4, 6.RP.A.3, 6.EE.C.9, 6.SP.B.5	9.1	8.1 & 8.2
15										
16										
17			Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.	LS2-4						
18										
19										
20	Summative Unit Assessment & Completion of Green School Project 3			LS2						
21	**Various State Testing on Various Day in Marking Period 3**									
22										

Marking Period 4

Day	Unit	Topic	Desired Outcome	CCCS	ELA Common Core Standards: Reading	Writing	S & L	Math	21st Century	Technology
1	Unit 10	Force	Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.	PS2-1	RST.6-8.1, RST.6-8.3	WHST.6-8.1, WHST.6-8.7	S.L. 8.5	MP.2, 6.NS.C.5, 6.EE.A.2, 7.EE.B.3, 7.EE.B.4	9.1	8.1 & 8.2
2										
3			Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.	PS2-2						
4										
5										
6	Summative Unit Assessment & Introduction to Green School Project 4			PS2						
7	Unit 11	Energy and Force	Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.	PS3-1	RST.6-8.1, RST.6-8.3, RST.6-8.7	WHST.6-8.1, WHST.6-8.7	S.L. 8.5	MP.2, 6.RP.A.1, 6.RP.A.2, 7.RP.A.2, 8.EE.A.1, 8.EE.A.2, 8.F.A.3	9.1	8.1 & 8.2
8										
9										
10			Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.	PS3-2						
11										
12	Summative Unit Assessment			PS3						
13	Unit 12	Force of Nature	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development	ESS3-3	RST.6-8.1, RST.6-8.7	WHST. 6-8.1, WHST. 6-8.2, WHST. 6-8.7, WHST. 6-8.8, WHST. 6-8.9	S.L. 8.5	MP.2, 6.RP.A.1, 7.RP.A.2, 6.EE.B.6, 7.EE.B.4	9.1	8.1 & 8.2
14										
15			Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.	ESS3-4						
16										
17			Ask Questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century	ESS3-5						
18										
19	Summative Unit Assessment & Completion of Green School Project 4			ESS3						
20	Review for Final Benchmark									
21	**Final Benchmark**									
22										
23										