Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
September	(Week 1) Benchmarks Classroom Rules, Guidelines, Expectations District Grading Policy Biology Curriculum Overview Investigations Overview Introduction What is an experimental plan? What is a phenomenon? What is a model? Graph interpretation Body systems overview	(Week 2) NV Unit 1: Homeostasis and Feedback Mechanisms in Humans Marathon Runner **Anchor Phenomenon:** Marathon Runner Collapse: Why would a marathon runner become disoriented during the race, then go into a coma shortly after running the race? HS-LS1-2 Cells (prokaryotic vs eukaryotic, organelles (review) levels of organization) Gas exchange and cellular respiration (marathon runner)	(Week 3) NV Unit 1: Homeostasis and Feedback Mechanisms in Humans Marathon Runner HS-LS1-7 Suggestion: Teach biochemistry: (monomers, polymers, macromolecules, glucose, oxygen, glycogen, enzymes) Muscles and Energy (Aerobic respiration, ATP) Anaerobic respiration (yeast, muscle fatigue) Investigation #1: Balancing Act (estimated duration: 3-4 weeks)	(Week 4) NV Unit 1: Homeostasis and Feedback Mechanisms in Humans Marathon Runner NV Unit 2: Human vs. Bacteria (Natural Selection and the Interdependence of Organisms) **Anchor Phenomenon** The number of deaths from infectious diseases is increasing globally. Why, after decades of declining deaths from infectious disease, have we seen a resurgence of outbreaks? HS-LS2-8 pathogen, epidemic, pandemic, quarantine, plague, bacteria vs. virus,

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		Transport (cell membrane, passive vs active, blood vessels) Regulation/Coordination (nervous and endocrine systems) Communication (receptors, hormones, target cells) HS-LS1-3 Feedback mechanisms (positive vs negative, and dynamic equilibrium) Human Thermoregulation Osmoregulation (salt and water balance)		infections, disease transmission, diagnosis Vaccines, immunization, immune system overview, autoimmune disease, antibody, antigen macrophage, phagocyte Cholera (definition, impact in the body, global outbreaks in history—cause and effect)
October	(Week 5) NV Unit 2: Human vs. Bacteria (Natural Selection and the interdependence of Organisms) HS-LS4-3	(Week 6) NV Unit 2: Human vs. Bacteria (Natural Selection and the interdependence of Organisms) HS-LS4-5	(Week 7) NV Unit 3: Evolution of Sick Humans (Genetics. Protein Synthesis, and the Mismatch Hypothesis) HS-LS4-1	(Week 8) NV Unit 3: Evolution of Sick Humans (Genetics. Protein Synthesis, and the Mismatch Hypothesis) Unit 3 Assessment

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
	HS-LS4-4 COVID-19 pandemic Natural Selection, adaptation, variation Review enzymes, lactose, lactase, lactose- intolerance	The Black Death (epidemic, pandemic, Antibiotic Resistance Review CER (claim, evidence, reasoning) The Microbiome Review ecosystems (brief overview) (microorganism communities in the human gut, skin, inside of mouth)	HS-ETS1-2 HS-ETS1-3 Investigation #2: Lactose Intolerance (estimated duration: 3-4 weeks)	NV Unit 4: Saving the Mountain Lion (Reproduction and Genetic Variation) **Anchor Phenomenon** A mountain lion was hit by a car on a highway outside NYC. How did it get there, and what can this tell us about saving mountain lions (Key Terms: karyotype, genetic diversity, homozygous, heterozygous, coefficient, inbreeding, Cause and effect Interpreting charts HS-LS1-4 HS-LS3-2 HS-LS3-3

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		Cooperation and Survival HS-LS4-2 Unit 2 Assessment NV Unit 3: Evolution of Sick Humans (Genetics. Protein Synthesis, and the Mismatch Hypothesis) **Anchor Phenomenon** A high school student who recently arrived in New York City is unable to drink milk at lunch like her peers without getting sick. HS-LS1-1		

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		Performance Task Organizer (key terms: criteria, constraints, design element, limitations, prototype, evaluating—engineering design) HS-LS3-1 Lactase Persistence (lactose intolerance, prevalence) read maps, tables, charts, Review enzyme structure and function, glucose molecular and structural formula, DNA, protein synthesis, genes, chromosomes, alleles, non-coding DNA) Leptin Resistance (key terms: correlation,		

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		adipose--fat tissue) reading a scatter plot, bar graphs, line graphs, adipose Circadian Rhythms (Youtube video: A Day Full of Movement in the Life of a Mimosa Pudica (time lapse) 24 hours Common Ancestry		
November	(Week 9) NV Unit 4: Saving the Mountain Lion (Reproduction and Genetic Variation) Review mitosis and meiosis, mutation HS-LS1-8 (NYSSLS only)	**STEM Night #1: November 13th, 2026** (Week 10) NV Unit 5: Food for All (Energy and Matter in Ecosystems) Key Terms: pellagra Neolithic period	(Week 11) NV Unit 5: Food for All (Energy and Matter in Ecosystems) Unit 5 Assessment NV Unit 6: Wooly Mammoth (Ecosystem,	(Week 12) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact) HS-LS2-6 HS-LS2-7

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
	HS-LS4-3 Unit 4 Assessment NV Unit 5: Food for All (Energy and Matter in Ecosystems) **Anchor Phenomenon** In the Southeastern United States during the early 20th century, pellagra impacted different groups of people disproportionately. HS-LS1-5	Key Terms: limiting factors, carrying capacity, bromothymol blue Niacin (vitamin B3) ATP, cellular respiration (aerobic vs anaerobic) Decomposition, eukaryotes, autotrophs, degermination HS-LS1-6 HS-LS2-3 HS-LS2-4 HS-LS2-1	Resilience, Climate Change and Human Impact) **Anchor Phenomenon** Woolly mammoths once roamed the Earth and now they are extinct. Key Terms: Wooly mammoth, tusk tuskless elephants Coral reefs, coral bleaching, carbon cycle, fossil fuel emissions,	Investigation #3: For The Birds (estimated duration: 3-4 weeks)

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
			atmosphere, hydrosphere, geosphere, extinction CRISPR-Cas9 HS-LS2-5 HS-LS2-2	
December	(Weeks 13-14) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact) HS-LS4-6	(Week 15) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact)	(Week 16) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact)	(Week 17) Holiday Recess School Closed
January	(Week 18) Holiday Recess School Closed	**(Week 19)** **Regent's Review**	**(Week 20)** **Regent's Review**	**(Week 21)** **Regent's Exams and Scoring**

Biology Pacing Calendar

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January/ February	**(Week 22)** **STEM Activities** **(finish the 1st cohort Semester 1 and switch to 2nd cohort Semester 2)**	Return to Week 1: Semester 2	Winter Recess School Closed	
	(Week 1) Benchmarks Classroom Rules, Guidelines, Expectations District Grading Policy Biology Curriculum Overview Investigations Overview Introduction What is an experimental plan? What is a phenomenon? What is a model?	**(Week 2)** NV Unit 1: Homeostasis and Feedback Mechanisms in Humans Marathon Runner **Anchor Phenomenon:** Marathon Runner Collapse: Why would a marathon runner become disoriented during the race, then go into a coma shortly after running the race? HS-LS1-2 Cells (prokaryotic vs eukaryotic, organelles	(Week 3) NV Unit 1: Homeostasis and Feedback Mechanisms in Humans Marathon Runner HS-LS1-7 Suggestion: Teach biochemistry: (monomers, polymers, macromolecules, glucose, oxygen, glycogen, enzymes) Muscles and Energy (Aerobic respiration, ATP)	(Week 4) NV Unit 1: Homeostasis and Feedback Mechanisms in Humans Marathon Runner NV Unit 2: Human vs. Bacteria (Natural Selection and the Interdependence of Organisms) **Anchor Phenomenon** The number of deaths from infectious diseases is increasing globally. Why, after decades of declining deaths from infectious

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
	Graph interpretation Body systems overview	(review) levels of organization) Gas exchange and cellular respiration (marathon runner) Transport (cell membrane, passive vs active, blood vessels) Regulation/Coordination (nervous and endocrine systems) Communication (receptors, hormones, target cells) HS-LS1-3 Feedback mechanisms (positive vs negative, and dynamic equilibrium) Human Thermoregulation Osmoregulation (salt and water balance)	Anaerobic respiration (yeast, muscle fatigue) Investigation #1: Balancing Act (estimated duration: 3-4 weeks)	disease, have we seen a resurgence of outbreaks? HS-LS2-8

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
March	**STEAM PROJECTS** (Week 5) NV Unit 2: Human vs. Bacteria (Natural Selection and the interdependence of Organisms) HS-LS4-3 HS-LS4-4 COVID-19 pandemic Natural Selection, adaptation, variation Review enzymes, lactose, lactase, lactose- intolerance	**STEAM PROJECTS** (Week 6) NV Unit 2: Human vs. Bacteria (Natural Selection and the interdependence of Organisms) HS-LS4-5 The Black Death (epidemic, pandemic, Antibiotic Resistance Review CER (claim, evidence, reasoning) The Microbiome	**STEAM PROJECTS** (Week 7) NV Unit 3: Evolution of Sick Humans (Genetics. Protein Synthesis, and the Mismatch Hypothesis) HS-LS4-1 HS-ETS1-2 HS-ETS1-3 Investigation #2: Lactose Intolerance (estimated duration: 3-4 weeks)	(Week 8) NV Unit 3: Evolution of Sick Humans (Genetics. Protein Synthesis, and the Mismatch Hypothesis) Unit 3 Assessment NV Unit 4: Saving the Mountain Lion (Reproduction and Genetic Variation) **Anchor Phenomenon** A mountain lion was hit by a car on a highway outside NYC. How did it get there, and what can this tell us about saving mountain lions (Key Terms: karyotype, genetic diversity, homozygous, heterozygous, coefficient, inbreeding, Cause and effect

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		Review ecosystems (brief overview) (microorganism communities in the human gut, skin, inside of mouth) Cooperation and Survival HS-LS4-2 Unit 2 Assessment NV Unit 3: Evolution of Sick Humans (Genetics. Protein Synthesis, and the Mismatch Hypothesis) **Anchor Phenomenon** A high school student who recently arrived in New		Interpreting charts HS-LS1-4 HS-LS3-2 HS-LS3-3

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		York City is unable to drink milk at lunch like her peers without getting sick. HS-LS1-1 Performance Task Organizer (key terms: criteria, constraints, design element, limitations, prototype, evaluating—engineering design) HS-LS3-1 Lactase Persistence (lactose intolerance, prevalence) read maps, tables, charts, Review enzyme structure and function, glucose molecular and structural formula, DNA, protein		

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
		synthesis, genes, chromosomes, alleles, non-coding DNA) Leptin Resistance (key terms: correlation, adipose--fat tissue) reading a scatter plot, bar graphs, line graphs, adipose Circadian Rhythms (Youtube video: A Day Full of Movement in the Life of a Mimosa Pudica (time lapse) 24 hours Common Ancestry		
April	**EARTH DAY PROJECTS** (Week 9)	Spring Recess School Closed	**EARTH DAY PROJECTS** **Earth Day – Aril 22, 2026** (Week 11)	**EARTH DAY CELEBRATIONS** (Week 12)

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
	NV Unit 4: Saving the Mountain Lion (Reproduction and Genetic Variation) Review mitosis and meiosis, mutation HS-LS1-8 (NYSSLS only) HS-LS4-3 Unit 4 Assessment NV Unit 5: Food for All (Energy and Matter in Ecosystems) **Anchor Phenomenon** In the Southeastern United States during the early 20th century, pellagra impacted		NV Unit 5: Food for All (Energy and Matter in Ecosystems) Key Terms: pellagra Neolithic period Key Terms: limiting factors, carrying capacity, bromothymol blue Niacin (vitamin B3) ATP, cellular respiration (aerobic vs anaerobic) Decomposition, eukaryotes, autotrophs, degermination HS-LS1-6 HS-LS2-3 HS-LS2-4	NV Unit 5: Food for All (Energy and Matter in Ecosystems) Unit 5 Assessment NV Unit 6: Wooly Mammoth (Ecosystem, Resilience, Climate Change and Human Impact **Anchor Phenomenon** Woolly mammoths once roamed the Earth and now they are extinct.

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
	different groups of people disproportionately. HS-LS1-5			Key Terms: Wooly mammoth, tusk tuskless elephants Coral reefs, coral bleaching, carbon cycle, fossil fuel emissions, atmosphere, hydrosphere, geosphere, extinction CRISPR-Cas9 HS-LS2-5 HS-LS2-2

Biology Pacing Calendar

	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
May	(Week 13) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact) HS-LS2-6 HS-LS2-7 Investigation #3: For The Birds (estimated duration: 3-4 weeks)	(Week 14) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact) HS-LS4-6	**Stem Night #2: May 19, 2026** (Week 15) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact)	(Week 16) NV Unit 6: Wolly Mammoth (Ecosystem Resilience, Climate Change, and Human Impact)

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	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration	Topics and Estimated Duration
June	(Week 17) Complete coursework Regents Prep	(Week 18) Regents Prep	(Week 19) Regents Week	(Week 20) Regents Week

Biology Pacing Calendar

Biology:

UNIT 1: **Marathon Runner**	UNIT 2: **Humans vs. Bacteria**	UNIT 3: **Evolution of Sick Humans**	UNIT 4: **Saving the Mountain Lion**	UNIT 5: **Food for All**	UNIT 6: **Woolly Mammoth**
TOPIC: Homeostasis and Feedback Mechanisms in Humans	**TOPIC:** Natural Selection and the Interdependence of Organisms	**TOPIC:** Genetics, Protein Synthesis, and the Mismatch Hypothesis	**TOPIC:** Reproduction and Genetic Variation	**TOPIC:** Energy and Matter in Ecosystems	**TOPIC:** Ecosystem Resilience, Climate Change, and Human Impact
PES: HS-LS1-2 HS-LS1-3 HS-LS1-7	**PES:** HS-LS2-8 HS-LS4-2 HS-LS4-3 HS-LS4-4 HS-LS4-5	**PES:** HS-LS1-1 HS-LS3-1 HS-LS4-1 HS-ETS1-2 HS-ETS1-3	**PES:** HS-LS1-4 HS-LS3-2 HS-LS3-3 HS-LS1-8 (NYSSLS only) HS-LS4-3	**PES:** HS-LS1-5 HS-LS1-6 HS-LS2-3 HS-LS2-4 HS-LS2-1	**PES:** HS-LS2-5 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-LS4-6 (NGSS, not in the NYSSLS)
✔ Field Tested Fall, '18	✔ Field Tested Spring, '19	✔ Field Tested Spring, '22	🛠 Field Testing Spring, '23	🛠 Field Testing Spring, '23	✔ Field Tested Spring, '18