

**2021-2022**

**Standards-Based Curriculum Plan**

**Biology**

|  |  |  |
| --- | --- | --- |
| **Biology MLS (NGSS) Standards** (identified based on R.E.A.L1 criteria for standard prioritization) | | |
| **Priority Standards\*\*\*** | **Secondary Standards\*\*** | **Supporting Standards\*** |
| **9-12.LS1.A.1 (HS-LS1-1)**  Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.  **9-12.LS1.B.1 (HS-LS1-4)**  Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms  **9-12.LS2.A.1 (HS-LS2-1)**  Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.  **9-12.LS2.B.2 (HS-LS2-4)**:  Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.    **9-12.LS3.A.1 (HS-LS3-1)**  Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.  **9-12.LS3.B.4 (HS-LS3-3)**  Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.  **9-12.LS4.A.1 (HS-LS4-1)**:  Communicate scientific information that common ancestry and bio evolution are supported by multiple lines of empirical evidence.  **9-12.LS4.C.1 (HS-LS4-4):**Construct an explanation based on evidence for how natural selection leads to adaptation of populations. | **9-12.LS1.A.2 (HS-LS1-2)**:  Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.  **9-12.LS1.A.3 (HS-LS1-3)**:  Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.  **9-12.LS1.C.1 (HS-LS1-5)**:  Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.  **9-12.LS1.C.3 (HS-LS1-6)**:  Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.    **9-12.LS1.C.2 (HS-LS1-7)**:  Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.    **9-12.LS2.B.1 (HS-LS2-2)**:  Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.  **9-12.LS2.B.1 (HS-LS2-3)**:  Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.  **9-12.LS2.B.3 (HS-LS2-5)**:  Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere  **9-12.LS2.C.1 (HS-LS2-6)**:  Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.  **9-12.LS3.B.2 (MS-LS3-2)**Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial or neutral effects to the structure and function of the organism.  **9-12.LS3.B.3 (HS-LS3-2):**Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.  **9-12.LS4.B.1 (HS-LS4-2)**:  Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.  **9-12.LS4.B.2 (HS-LS4-3)**:  Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.  **9-12.LS4.C.2 (HS-LS4-5)**:  Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.  **9-12.LS2.C.2 (HS-LS2-7):**  Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.  **9-12.ESS3.A.1 (HS-ESS3-1)**:  Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. | **9-12.ETS1.A.1 (HS-ETS1-1)**  Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.  **9-12.ETS1.A.2 (HS-ETS1-2)**:  Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.  **9-12.ETS1.B.1 (HS-ETS1-3)**:  Evaluate a solution to a complex real world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.  **9-12.ETS1.B.2 (HS-ETS1-4):**Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.  **9-12.LS4.C.3 (HS-LS4-6)**:  Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.    **9-12.ESS1.C.1 (HS-ESS1-5):**Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.    **9-12.ESS1.C.2 (HS-ESS1-6):**Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth’s formation and early history.  **9-12.ESS2.E (HS-ESS2-7):**Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.    **9-12.ESS3.C.1 (HS-ESS3-3)**:  Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.    **9-12.ESS3.C.2 (HS-ESS3-4)**:  Evaluate or refine a technological solution that reduces impacts of human activities on natural systems. |

1R.E.A.L stands for Readiness, Endurance, Assessment (MAP Item Analysis used), and Leverage. This [article](https://absenterprisedotcom.files.wordpress.com/2016/06/real-standards.pdf) defines each criteria.

|  |
| --- |
| **By the end of the year, students in Biology will be able to…** |
| * Ask questions (science) and define problems (engineering) * Use and develop a model * Analyze and interpret data * Plan and carry out investigations * Use mathematical and computational thinking * Construct explanations (science) and design solutions (engineering) * Engage in an argument from evidence * Obtain, evaluate, and communicate information |

|  |  |  |  |
| --- | --- | --- | --- |
| **Standards Pacing By Quarter** | | | |
| **Quarter 1** | **Quarter 2** | **Quarter 3** | **Quarter 4** |
| **Micro-evolution & Macro-evolution**  **How can populations change over time?**  **(13 weeks)** | **Cells and Genetics**  **How are there so many different kinds of organisms (and health conditions)?**  **(5 weeks)** | **Ecology and Metabolism**  **How can we make a positive impact on Earth and organisms?**  **(10 weeks)** | **Earth, Biodiversity and Human Impact**  **How can we make a positive impact on Earth and organisms?**  **(8 weeks)** |
| **Storyline 1: Why Don't Antibiotics Work Like They Used To?**  **Bend 1 – Addie (7 wks)**   **(HS-LS4-2) 9-12.LS4.B.1\*\***. Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.    **(HS-LS4-3) 9-12.LS4.B.2\*\***  Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.    **(HS-LS4-4)  9-12.LS4.C.1\*\*\***  Construct an explanation based on evidence for how natural selection leads to adaptation of populations.    **(HS-LS4-5) 9-2.LS4.C.2\*\***  Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.    **(HS-ETS1-3) ETS1.B.1\***. Evaluate a solution to a complex real world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.    **(HS-LS4-1) 9-12.LS4.A.1\*\*\***  Communicate scientific information that common ancestry and bio evolution are supported by multiple lines of empirical evidence | **Storyline 1: Why Don't Antibiotics Work Like They Used To?**  **Bend 2 – Juncos (6 wks)**  **(HS-LS4-3) 9-12.LS4.B.2\*\***Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.    **(HS-LS4-5) 9-12.LS4.C.2\*\*** Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.    **(HS-LS4-6) 9-12.LS-4.C.3\*** Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity    **(HS-LS4-1) 9-12.LS4.A.1\*\*\***Communicate scientific information that common ancestry and bio evolution are supported by multiple lines of empirical evidence    **Storyline 2: How Can Science Help Make Our Lives Better?**  **Bend 1 – DMD (4 wks)**  **(HS-LS1-1) 9-12.LS1.A.1\*\*\***. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.    **(HS-LS1-4) 9-12.LS1.B.1\*\*\***. Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.    **(HS-LS3-1) 9-12.LS3.A.1\*\*\***Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.    **(HS-LS3-2) 9-12.LS3.B.3\*\***Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.    **(HS-LS3-3) 9-12.LS3.B.4\*\*\***Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population. | **Storyline 3: How Do Small Changes Make Big Impacts on Ecosystems?**  **Bend 1 - Serengeti (4 wks)**  **Bend 2 – Trees (6 wks)**    **(HS-LS2-1) 9-12.LS2.A.1\*\*\*.** Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.  **(HS-LS2-4) 9-12.LS2.B.2\*\*\*.** Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.  **(HS-LS2-6) 9-12.LS2.C.1\*\*.** Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.    **Storyline 3: How Do Small Changes Make Big Impacts on Ecosystems?**  **Bend 2**  **(HS-LS1-2) 9-12.LS1.A.2\*\***. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.  **(HS-LS1-3) 9-12.LS1.A.3\*\***. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.  **(HS-LS1-5) 9-12.LS1.C.1\*\***. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.  **(HS-LS1-6) 9-12.LS1.C.2\*\***. Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.  **(HS-LS1-7) 9-12.LS1.C.3\*\*** Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.  **(HS-LS2-3) 9-12.LS2.B.1\*\*** Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.  **(HS-LS2-5) 9-12.LS2.B.3\*\*** Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.  **(HS-LS2-7) 9-12.LS2.C.2\*** Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.  **(HS-ETS1-1) 9-12.ETS1.A.1\***Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.  **(HS-LS4-3) 9-12.LS.B.2\*\***Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.  **(HS-LS4-4) 9-12.LS4.C.1\*\*\*** Construct an explanation based on evidence for how natural selection leads to adaptation of populations.  **(HS-LS4-5) 9-12.LS4.C.2\*\*** Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.1  **(HS-ETS1-3) 9-12.ETS1.B.1\***. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts. | **(HS-ESS1-5) 9-12.ESS1.C.1\*** Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.    **(HS-ESS1-6) 9-12.ESS1.C.2\***. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth’s formation and early history.    **(HS-ESS2-7) 9-12.ESS2.E\***. Construct an argument based on evidence about the simultaneous coevolution of Earth’s systems and life on Earth.    **(HS-ESS3-1) 9-12.ESS3.A.1\*\*** Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.    **(HS-ESS3-3) 9-12.ESS3.C.1\*** Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.  **(HS-ESS3-4) 9-12.ESS3.C.2\*** Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.    **(HS-ETS1-2) 9-12.ETS1.A.2\***  Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.    **(HS-ETS1-4) 9-12.ETS1.B.2\***  Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem. |

**Biology - Year at a Glance**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Standards-Based Curriculum** | | | **Aligned Instructional Resources** | | **Assessment for Student Learning** |
| **Standard** | **Topic** | **Essential Questions** | **Text/Print Resources** | **Resources for Blended Instruction and Research Based Intervention** | **Assessment** |
| [**7 CCCs**](https://www.nextgenscience.org/sites/default/files/Appendix%20G%20-%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf)  **of** [**3 dimensional learning**](https://www.nextgenscience.org/three-dimensions) **(NGSS)** | Unit 0 Building towards 7 CCCs and SEPs and technology that will be used throughout the year | HOW do scientists THINK? (CCCs)  WHAT do scientists DO? (SEPs) | [Unit 0 Lesson Plans and Resources](https://drive.google.com/open?id=1tg1u3OahjAZGDyCFoF7PKkZoTwk20yZs) | [Unit 0 Student HyperDoc](https://docs.google.com/document/d/1vb4yiT_T7ESXF9fo7v_ZP3siIv2OmzDr3R-WmHedx5o/view?usp=sharing) Folder | **Formative Assessments:**  Do Now  Activity Sheets  Homeworks |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Quarter 1** | | | | | |
| **Standards Based Curriculum** | | | **Aligned Instructional Resources** | | **Assessment for Student Learning** |
| **Standard(s) & Proficiency Scales** | **Topic** | **Essential Questions** | **Text/Print Resources** | **Resources for Blended Instruction and Research Based Intervention** | **Assessment & Proficiency Scales** |
| [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  Construct an explanation based on evidence for how natural selection leads to adaptation of populations. | **Quarter 1**  **Storyline 1 Bend 1** [**Addie**](https://docs.google.com/document/d/1C6mWem4DTHkDjbYhnLX6JAjN9bp7PdOHSTwtejzt5U8/edit)  **Overview:**  In this first part of this two-part unit on evolution, students investigate the case of Addie, a young girl who gets bacterial infections that cause her to almost die. The students develop models on the evolution of bacteria and develop bacteria experiments to provide evidence of the mechanism for Natural Selection. An optional component of the unit is for students to complete their mission as citizen scientists, developing more effective infographics to sway individual health choices related to the misuse of antibiotics. | **Lesson 1.1:**  How did Addie get so sick? What is bacterial infection?  **Lesson 1.2:**  How common is bacterial infection? Can it happen to me? | [Lesson Plan 1.1](https://docs.google.com/document/d/1-tkSfT18CFj_Wq88sKLFVHgwIO8svhjffR04CxaYGM0/edit) (90 min)  [L1.1 Student Activity Sheet](https://drive.google.com/file/d/1PjdZrAy4_HA8UdkMAOVnhDSprvvjseEX/view?usp=sharing)  [Lesson Plan 1.2](https://drive.google.com/open?id=1pVh32yyWxLLxOb-bF4HNp7MoIbxWI4f0) (90 min)  [L1.2 Student Activity Sheet](https://drive.google.com/file/d/1Aoyu2aadHHEeNfK6qyxtQwLhAOS5hEV1/view?usp=sharing) | **Resources for Blended Instruction**  [L1.1 Student HyperDoc](https://drive.google.com/file/d/1B-THLxM6JUa7x2wQI_yL8tOcH2km8kY4/view?usp=sharing)  [L1.2 Student HyperDoc](https://drive.google.com/file/d/13P1r5ibNu4qGr_wxyot5Ctl04ShBglzM/view?usp=sharing)  *(Teachers personalize embedded collaborative platforms)*  **Intervention – Remediation:**  Lesson 1.2: There might be a need to review terms and concepts of natural selection, antibiotic resistance, transmission of MRSA, hospital-acquired MRSA. | **Formative Assessments:**  Do Nows  Exit Slips  Activity/Lab Sheets  Quizzes  Transfer Tasks  Homeworks  **District Common Formative Assessment (CFA):** Storyline 1 Pre-Assessment    **Summative Assessments:**  Unit Tests  Projects  **District Common Summative Assessment (CSA):** Bend 1 Assessment  **Proficiency Scales:**  [HS-LS4-2 (9-12.LS4.B.1)](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)\*\*  [HS-LS4-4 (LS4.C.1)](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)\*\*\*  [HS-LS4-5 (9-12.LS4.C.2)](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)\*\* |
| **Lesson 1.3a:**  Where are the bacteria around us?  **Lesson 1.3b:**  How do our petri dishes samples compare?  **Lesson 1.4 :**  How are antibiotics used? | [Lesson PLan 1.3a](https://drive.google.com/open?id=1d1-YTq89aXNqVru_R_VWpXc2IY3c8uxb) (90 min)  [L1.3a Student Activity Sheet](https://drive.google.com/file/d/1U5YMOLdYDltEn4ign7lvJeIVFIV3RHYB/view?usp=sharing)  [Lesson Plan 1.3b](https://drive.google.com/open?id=1FAtiIiV3zncc-rW_yw_bv0bilaYgxegf) (50 min)  [L1.3b Student Activity Sheet](https://drive.google.com/file/d/11xJAyRm6teiRsruuR6eNW6Nztgc63_GE/view?usp=sharing)    [Lesson Plan 1.4](https://drive.google.com/open?id=11OD4DHB4b5poRi-SzmIajF9--fVZh52u) (50 min)  [L1.4 Student Activity Sheet](https://drive.google.com/file/d/1_yHHA931p93c3cgX7TOCZlZyIGsSWO9c/view?usp=sharing) | **Resources for Blended Instruction**  [L1.3 Plating Lab Student HyperDoc](https://docs.google.com/document/d/19vAhYhksNE1T0kOG4WAQfo7gveSFdaFVAHHkq5jHjzc/edit?usp=sharing)  [L1.3 Virtual Lab Student HyperDoc](https://drive.google.com/file/d/1tmdmiyb99A6wU62-O_6QiFbuWx-a9F_w/view?usp=sharing)  *(Teachers personalize embedded collaborative platforms)*  **Intervention – Remediation:**  Lesson 1.3a: Differentiate between fungi and bacteria growth in petri dishes  Lesson 1.3b: Review [prokaryote vs eukaryotes](https://drive.google.com/file/d/1paaY_lfhjgYED1kOkzfRAQ_pULf2_ZVr/view?usp=sharing). Review [asexual vs sexual reproduction](https://drive.google.com/file/d/1GhNZmMffVi5e1DfvgtHJ6qZ_afLxjUBm/view?usp=sharing).  **Intervention Enrichment:** |
| **Lesson 1.5:**  How do bacteria grow?  **Lesson 1.6**:  How do bacteria grow in simulated environment? | [Lesson Plan 1.5](https://drive.google.com/open?id=13gwAzhqXIvSNd_BHBq6aSGVHIXfOKFJO) (50 min)  [L1.5 Student Activity Sheet](https://drive.google.com/file/d/1F4GP5WSsL703Uir7oRrqIkoCcx44JCBm/view?usp=sharing)  [Lesson Plan1.6](https://drive.google.com/open?id=1kz2OUJYpOFTAZaD9sore0fqgaf4EO414) (75 min)  [L1.6 Student Activity Sheet](https://drive.google.com/file/d/1--Bwnufrl0AOIzDuHE3ZNT39OufMNA5q/view?usp=sharing)  . | **Resources for Blended Instruction:**  [L1.4-L1.5 Student HyperDoc](https://drive.google.com/file/d/1RnsEjKqDKtgLJZCjZcYXhdN2l-jrp98m/view?usp=sharing)  [L1.6 Student HyperDoc](https://drive.google.com/file/d/15jYiCYZoe9xIkhWCE1B3gBei5AqS8N_R/view?usp=sharing)  *(Teachers personalize embedded collaborative platforms)*  **Intervention – Remediation:**  Lesson 1.6: Review [limiting factors](https://nhpbs.org/natureworks/nwep12a.htm#:~:text=In%20the%20natural%20world%2C%20limiting,disease%20can%20also%20impact%20populations.&text=Sometimes%20a%20population%20will%20grow%20too%20large%20for%20the%20environment%20to%20support.) in natural selection.  [Bacterial Growth Video](https://www.youtube.com/watch?v=KIpcCyuypzg)  Familiarize yourself with Net Logo web. Review limiting factors (space). Competition for an environment’s limited supply of the resources  **Intervention – Enrichment:** |
| **Lesson 1.7:**  How do bacteria get killed?  ***NOTE: Lessons 8a-c will be combined into one brief discussion using pictures. (90 min)***  **Lesson 1.8a**:  How do antibiotics affect the bacteria when they are put together?  **Lesson 1.8b:**  What’s happening with our antibiotic experiment?  **Lesson 1.8c:**  What is happening with our antibiotic experiment?  **Lesson 1.9:**  What is happening with our antibiotic experiment? | [Lesson Plan1.7](https://drive.google.com/open?id=14SB7w1Bu0UxhwISarZwxv0snjsXU1t_3) (75 min)  [L1.7 Student Activity Sheet](https://drive.google.com/file/d/1eniImuNz__11Yv6QGkwe--NaZXRrE1vQ/view?usp=sharing)  [Lesson Plan 1.8a](https://drive.google.com/open?id=1aceNnq6IvYxrTnog-PUdyXfS9C8lUW5x) (30 min)  [L1.8a Student Activity Sheet](https://drive.google.com/file/d/1WaF4-OVp1zwsbbFRKHonIkU_zyzbnNsb/view?usp=sharing)  [Lesson Plan 1.8b](https://drive.google.com/open?id=1TpQEL-iEQmRId7WmMeFvOP1-A_AJA-uY) (30 min)  [L1.8b Student Activity Sheet](https://drive.google.com/file/d/1xsQhhndv9sScHi5eAXBbu5Ss00SrManf/view?usp=sharing)  [L1.8b Homework](https://drive.google.com/file/d/1L73SMh_8kbcNNM793nL6DzAYMI5W6lt0/view?usp=sharing)  [Lesson Plan 1.8c](https://drive.google.com/open?id=17rTZ9NKp-49aFHtBu_1DHcI08WuUs84x) (30 min)  [L1.8c Student Activity Sheet](https://drive.google.com/file/d/1DAv5_l1BqQ8CfqsBMUzA5VmSwwRZjuFM/view?usp=sharing)  [L1.8c Student Safety Guidelines](https://drive.google.com/file/d/1otX7iTqcKC3Zjjey2m8cF69TyOfOdraR/view?usp=sharing)  [Lesson Plan 1.9](https://drive.google.com/open?id=18o6tx750XBFaBq83vTj8IjrXKUcIlasT) (50 min)  [L1.9 Student Activity Sheet](https://drive.google.com/file/d/1PrVddigI6zB08nz6iS_b6iUrsr7QTIbA/view?usp=sharing) | **Resources for Blended Instruction:**  [L1.7 Student HyperDoc](https://docs.google.com/document/d/1IciB3IGwVMiyKPuSG4Z2sKZUgkYmXp5BugOnP6xAQK8/view?usp=sharing)  *(Teachers personalize embedded collaborative platforms)*  **Intervention – Remediation**   * [Evolution and Natural Selection](https://nhpbs.org/natureworks/nwepevolution.htm) * [Evolution and NS POGIL](https://drive.google.com/file/d/1cm8YR3KkvAkStHHiC9DB-GlviOJFrJzm/view?usp=sharing) * PhET Simulation: [Natural Selection](https://phet.colorado.edu/en/simulation/natural-selection)   **Intervention – Enrichment**  HHMI: [The Biology of Skin Color](https://www.biointeractive.org/classroom-resources/biology-skin-color)  BiteScis: Malaria and Sickle Cell Anemia [Reading](https://docs.google.com/document/d/15iilqje3uFR11GuX7tAhyck3wol4RTAdCsJtc-m06mM/view#heading=h.2fks0dqsy8ok) and [Student Sheet](https://docs.google.com/document/d/1uOLZD7CFI0tMg2-aIqxBRR4_Fwtrdf7tdgPneO5if5U/view#heading=h.mbix9e13ao8e) |
| [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  [**HS-LS4-5 (9-12.LS4.C.2)**](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)**\*\*** | **Lesson 1.10:** How does a bacterial population change in a simulated infection?  **Lesson 1.11:**  How does moving bacteria that survive antibiotic doses from one environment to another affect the population over time? | [Lesson Plan 1.10](https://drive.google.com/open?id=1qnH_O6a0qU7ttm-lmzEqpT7kjQLKljfR) (100 min)  [L1.10 Student Activity Sheet](https://drive.google.com/file/d/1JW_2kBYsZejRmOBVDLTA2ApGawHGF8Gv/view?usp=sharing)  [L1.10 Homework](https://drive.google.com/file/d/17usMKFaU4DEb4ufrw24ijeDwhmipxI3J/view?usp=sharing)  [Lesson Plan 1.11](https://drive.google.com/open?id=18KP_GLf7-3qTOUfcWj2toAXYtRYMSYLJ) (90 min)  [L1.11 Student Activity Sheet](https://drive.google.com/file/d/10DFn_8Lntr-hYhKetG-nUN8OtmUf_nT2/view?usp=sharing)  [L1.11 Homework a](https://drive.google.com/file/d/1gkDg3gTuNzMb_4ED1oiygtlt7oIMy4vy/view?usp=sharing)  [L1.11 Homework b](https://drive.google.com/file/d/1msSJzoz729l9YAdQV3-CSBbNMppv7DC5/view?usp=sharing)  Possible to do on Smart Board as whole class.  Includes Home Assignments | **Resources for Blended Instruction:**  (coming soon)  [L1.10 Student HyperDoc](https://docs.google.com/document/d/1xx4QO8A-0WsWFUJo3OajSSCdm9mof6d95l_e5HpCk8g/view?usp=sharing)  [L1.11 Student HyperDoc](https://docs.google.com/document/d/1emj40EDkquS5wDNozC96b3KdQWUpKqQoBkztekpjIOQ/view?usp=sharing)  *(Teachers personalize embedded collaborative platforms)*  **Intervention – Remediation:**   * [Amoeba Sisters Video Natural Selection](https://www.youtube.com/watch?v=7VM9YxmULuo) * Review [5 points of Natural Selection](https://drive.google.com/file/d/1cm8YR3KkvAkStHHiC9DB-GlviOJFrJzm/view?usp=sharing) * [5 Points of NS ANSWER KEY](https://drive.google.com/file/d/14WyhgP5y5T6xHBCNr1Cj7h59xdUd81Pl/view?usp=sharing)   **Intervention – Enrichment:**   * BiteScis: Antibiotic Resistance [Reading](https://docs.google.com/document/d/1dDnTlWQvDkVwzJZ5grme7jh9mUxqHW8J5oE3f7zRycA/view) and [Student Sheet](https://docs.google.com/document/d/1pzJtT1MQOpuVPvpxaVQDqPEfkgdsKU63E1geBKcbMKM/view), Evolution and E. Coli [Reading](https://docs.google.com/document/d/1Y0YGZiJHLUz5K2j_91j0XuRJ4IPHyJuonJeepZtn0Pg/view?usp=sharing) and [Student Sheet](https://docs.google.com/document/d/1YAQhUmjVdyY86dj_cGxzTPRVsMrZvsyp0BYXkqPkUJI/view) |
| **Lesson 1.12**:  How did the bacteria population become more resistant in Addie and in our community?  **Lesson 1.13**: What questions can we answer about bacteria and Addie’s situation? | [Lesson Plan 1.12](https://drive.google.com/open?id=1EKPPNUuY4Jsg00_iks5pdfsOVEEGTDDy) (50 min)  [L1.12 Student Activity Sheet](https://drive.google.com/file/d/1OCX_1p8YUMzLgmBkj86U4QQjS81WV1NT/view?usp=sharing)  [L1.12 Homework](https://drive.google.com/file/d/1h2-KMeK_JTMCp5MY_UmcylHh8qLsHzPs/view?usp=sharing)  [Lesson Plan 1.13](https://drive.google.com/open?id=19qRIA7KLwBX9xkR0ucQYwmCGBA7geYbf)  (90 min)  [L1.13 Student Activity Sheet](https://drive.google.com/file/d/1SlDArO_POJjUqC2YfHQPjW6HNMJHAEXw/view?usp=sharing) | **Resources for Blended Instruction:**  (coming soon)  [L1.12 Student HyperDoc](https://docs.google.com/document/d/1q7ylrofEFvltDiX-HOjW4a8EHE51Zd_vG1WnWLu28uk/view?usp=sharing)  *(Teachers personalize embedded collaborative platforms)*  **Intervention – Remediation:**  [TedED NS Video](https://www.youtube.com/watch?v=znnp-Ivj2ek)  **Intervention – Enrichment**   * Reading: [Pesticides can have Long-Term Effect on Bumble Bee Learning](https://www.sciencenewsforstudents.org/ngss/hs-ls4-5) * BiteScis: Antibiotic Resistance [Reading](https://docs.google.com/document/d/1dDnTlWQvDkVwzJZ5grme7jh9mUxqHW8J5oE3f7zRycA/view) and [Student Sheet](https://docs.google.com/document/d/1pzJtT1MQOpuVPvpxaVQDqPEfkgdsKU63E1geBKcbMKM/view), Evolution and E. Coli [Reading](https://docs.google.com/document/d/1Y0YGZiJHLUz5K2j_91j0XuRJ4IPHyJuonJeepZtn0Pg/view?usp=sharing) and [Student Sheet](https://docs.google.com/document/d/1YAQhUmjVdyY86dj_cGxzTPRVsMrZvsyp0BYXkqPkUJI/view) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Quarter 2** | | | | | |
| **Standards Based Curriculum** | | | **Aligned Instructional Resources** | | **Assessment for Student Learning** |
| **Standards & Proficiency Scales** | **Topic** | **Essential Questions** | **Text/Print Resources** | **Resources for Blended Instruction and Research Based Intervention** | **Assessments & Proficiency Scales** |
| [**HS-LS4-1 (9-12.LS4.A.1)**](https://drive.google.com/file/d/1WHtrL5xTp8mnGiSZpGmpvEUOMhP1PO4n/view?usp=sharing)**\*\*\***  [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  [**HS-LS4-5 (9-12.LS4.C.2)**](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)**\*\***  [**HS-LS4-6 (9-12.LS4.C.3)**](https://drive.google.com/file/d/1aELI6z5S3FftogTq3T0_QBIG0qbc62rX/view?usp=sharing)**\*** | **Storyline 1**  **Bend 2** [**Juncos**](https://docs.google.com/document/d/1C70imQdeXXTn3LyZrrpViYDj84K-2Loq8dFyO3Z7PtQ/edit)  **Overview:**  In this second part of this unit on evolution, students investigate the case of the UCSD juncos. These birds appear to be far bolder than other juncos that they are closely related to. This case sparks questions about whether behavior can be inherited. Students analyze data from this case study, as they wrap up their experiments with antibiotics and bacteria. They use what they figure out from both the juncos and their bacteria experiments, to complete their mission as citizen scientists, developing more effective infographics to sway individual health choices related to the misuse of antibiotics. | **Lesson 1.14:**  Which aspects of our natural selection model apply to other organisms?  **Lesson 1.15:**  What is happening in this new case of the UCSD juncos?  **Lesson 1.16:**  Just how different are these two populations of juncos from one another? | [Lesson Plan 1.14](https://drive.google.com/open?id=1OFmmGop4JJrgqMzIVjwbfoofcrj_UkCX) (50 min)  [L1.14 Student Activity Sheet](https://drive.google.com/file/d/1GlGKfwkmGyXpJ0MJSIZQSioZlKdk_V5q/view?usp=sharing)  [Lesson Plan 1.15](https://drive.google.com/open?id=1wknC38bqUz2SNRK8EE-bAmrRR1zguHGr) (90 min)  [L1.15 Student Activity Sheet](https://drive.google.com/file/d/1C-Hge0iQBr5x_Pt6XtmuVwLTZ-KvIYAZ/view?usp=sharing)  [L1.15 Homework a](https://drive.google.com/file/d/1PWsdAU5whxUXDcxnPXSsCSYR7Avf0O21/view?usp=sharing)  [L1.15 Homework b](https://drive.google.com/file/d/1Yzmxz8ZMwI6kl9cAXAkQYTbwOUNwJdww/view?usp=sharing)  [Lesson Plan 1.16](https://drive.google.com/open?id=1mjSO3GLOZfT9vI7bgSeIgG7-kKYmeu02) (90 min)  [L1.16 Student Activity Sheet](https://drive.google.com/file/d/1rwnZbdBkaH_Gk3Cn8EeTAD1sXSfXJMx5/view?usp=sharing)  [L1.16 Investigation C Methodology](https://drive.google.com/file/d/1E04HdRdBlWzifqJ50l4HfpBrCzdwOqDT/view?usp=sharing)  [L1.16 Investigation C Data](https://drive.google.com/file/d/1oGn6G_s2wkr_Mg3NJuz4fWjIBORCM9cc/view?usp=sharing)  [L1.16 Investigation B Data](https://drive.google.com/file/d/1pjkIjhXrO3Tg8WN4MkltHPGK42iNGuZ1/view?usp=sharing) | **Resources for Blended Instruction:**  [L1.15 Student HyperDoc](https://docs.google.com/document/d/151av81oT4fV9QS_YP5CwKp3wmUtvU5wOwcD7cRcEiEA/view?usp=sharing)  [L1.16 Student HyperDoc](https://docs.google.com/document/d/13baS0ODiN_0UWxcakerCIfUN4uy4UxdDwuObxn7L8lU/view?usp=sharing)  **Intervention – Remediation**  Simulation: [Summary of Natural Selection](https://drive.google.com/file/d/0B75yqMdTFq9oNThXREZhSExFNjg/view) | **Formative Assessments:**  [Bend 2 IMT](https://drive.google.com/open?id=1ormXiT1WbJ9_GcJ1StoP6pkLyODX2Wr8)  Do Nows  Exit Slips  Activity/Lab Sheets  Quizzes  Transfer Tasks  Homeworks  **District Common Formative Assessment (CFA):** Storyline 1 Pre-Assessment    **Summative Assessments:**  Unit Tests  Projects  **District Common Summative Assessment (CSA):** Storyline1 Post-Assessment  **Proficiency Scales:**  [HS-LS4-2 (9-12.LS4.B.1)](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)\*\*  [HS-LS4-4 (9-12.LS4.C.1)](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)\*\*\*  [HS-LS4-5 (9-12.LS4.C.2)](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)\*\*  [HS-LS4-1 (9-12.LS4.A.1)](https://drive.google.com/file/d/1WHtrL5xTp8mnGiSZpGmpvEUOMhP1PO4n/view?usp=sharing)\*\*\*  [HS-LS4-6 (9-12.LS4.C.3)](https://drive.google.com/file/d/1aELI6z5S3FftogTq3T0_QBIG0qbc62rX/view?usp=sharing)\*  [HS-LS3-1 (9-12.LS3.A.1](https://drive.google.com/file/d/1Q0HGwdd2Y6qH5hTVg6Z-MJtOZ-oZNson/view?usp=sharing))\*\*\*  [HS-LS4-3 (9-12.LS4.B.2)](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)\*\*  **Formative Assessments:**  Do Nows  Exit Slips  Activity/Lab Sheets  Quizzes  Transfer Tasks  Homeworks  **District Common Formative Assessment (CFA):** Storyline 2 Pre-Assessment    **Summative Assessments:**  Unit Tests  Projects  **District Common Summative Assessment (CSA):** Storyline 2 Post-Assessment  **Proficiency Scales:**  [HS-LS1-1 (LS1.A.1)](https://drive.google.com/file/d/1b8FRJnVNqCNxksoq-ymXZi0lspHe9Jss/view?usp=sharing)\*\*\*  [HS-LS3-1 (9-12.LS3.A.1](https://drive.google.com/file/d/1Q0HGwdd2Y6qH5hTVg6Z-MJtOZ-oZNson/view?usp=sharing))\*\*\*  [MS-LS3-1 (9-12.LS3.B.2)](https://drive.google.com/file/d/1s06RhJ-etQVLdMbGXrx9y4SeMpRN-IcV/view?usp=sharing)\*\*  [HS-LS3-2 (9-12.LS3.B.3)](https://drive.google.com/file/d/1045_MaEn8DdtMWNsx5HCZ5-mHkl8ApEV/view?usp=sharing)\*\*  [HS-LS3-3 (9-12.LS3.B.4)](https://drive.google.com/file/d/1lC6U66UaNeUw4fCJ3f2a6RjK2x43Gyif/view?usp=sharing)\*\*\* |
| [**HS-LS4-1 (9-12.LS4.A.1)**](https://drive.google.com/file/d/1WHtrL5xTp8mnGiSZpGmpvEUOMhP1PO4n/view?usp=sharing)**\*\*\***  [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (9-12.LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  [**HS-LS4-5 (9-12.LS4.C.2)**](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)**\*\***  [**HS-LS4-6 (9-12.LS4.C.3)**](https://drive.google.com/file/d/1aELI6z5S3FftogTq3T0_QBIG0qbc62rX/view?usp=sharing)**\***  [**HS-LS3-1 (9-12.LS3.A.1**](https://drive.google.com/file/d/1Q0HGwdd2Y6qH5hTVg6Z-MJtOZ-oZNson/view?usp=sharing)**)\*\*\*** | **Lesson 1.17:**  How are physical traits like wing color or wing length inherited?  **Lesson 1.18:** Just how different is the UCSD birds’ behavior?  **Lesson 1.19:**  How do scientists tell if a behavior trait is inherited or learned? | [Lesson Plan 1.17](https://drive.google.com/open?id=1930AfHuHRQY7OfnXSttDRI3YZF74tSxd) (90 min)  [L1.17 Student Activity Sheet](https://drive.google.com/file/d/1fuk6MdyfbOg2pOtkoGP3Oi6k26P_HNjj/view?usp=sharing)  [L1.17 Student Data Summary](https://drive.google.com/file/d/1581-Pp850HQorAdW0g7LyQ6wd9dFw31r/view?usp=sharing)  [Lesson Plan 1.18](https://drive.google.com/open?id=1SNN8dLqwNUUNKu4unSllyGbAf_GqQbwb) (90 min)  [L1.18 Student Packet](https://drive.google.com/drive/folders/1gFPA2eElIEkQ5jUlCzyteSj9OqnjNu0v?usp=sharing)  [Lesson Plan 1.19](https://drive.google.com/open?id=1f1atkdyRFOTrnNomLxBxRtHodiB3bla-) (50 min)  [L1.19 Student Packet](https://drive.google.com/drive/folders/18Y5bGjwVz9_kZrywI1tNr4x4QXx5gI14?usp=sharing) | **Resources for Blended Instruction:**  [L1.18 Student HyperDoc](https://docs.google.com/document/d/1DI41zD0ITs-R2VKwEF2_e4zVeXwElukmVO2QR0H-5sw/view?usp=sharing)  **Intervention – Remediation**  HHMI: [Stickleback Evolution Virtual Lab](https://www.biointeractive.org/classroom-resources/stickleback-evolution-virtual-lab), [Thermoregulations in Dinosaurs](https://www.biointeractive.org/sites/default/files/Dinosaur-StudentHO-DP.pdf), [The Origins of Birds](https://www.biointeractive.org/classroom-resources/activity-origin-birds) |
| [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (9-12.LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  [**HS-LS4-5 (9-12.LS4.C.2)**](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)**\*\***  [**HS-LS4-6 (9-12.LS4.C.3)**](https://drive.google.com/file/d/1aELI6z5S3FftogTq3T0_QBIG0qbc62rX/view?usp=sharing) | **Lesson 1.20:**  Do juncos learn to be bolder or is this behavior something they inherited?  **Lesson 1.21:**  Are there differences inside the birds that would explain why they behave differently?  **Lesson 1.22:**  How did the UCSD population become bolder than the mountain population over the last 60 years? | [Lesson Plan 1.20](https://drive.google.com/open?id=1hgCWp8GW75-u4poXemlnOMZsnGK1kqg6) (50 min)  [L1.20 Resource Folder](https://drive.google.com/drive/folders/1ChjyB2F-AjCDeHXeLvLkTlBTA_m9a7y4?usp=sharing)  [Lesson Plan 1.21](https://drive.google.com/open?id=1WaneXt4xg_WFnNr2u3wxv49VDb7Rob_4) (50 min)  [L1.21 Resource Folder](https://drive.google.com/drive/folders/1i1T8K9o7CqzUHHw363aheQwd9owSN1Jm?usp=sharing)  [Lesson Plan 1.22](https://drive.google.com/open?id=1QjxEee_l7LEDrR62_TbtspmFIFUblex3) (90 min)  [L1.22 Student Activity Sheet](https://drive.google.com/file/d/164jQ689uhOt7cDAB1uQKnjS1LgXmdFEY/view?usp=sharing)  [L1.22 Homework](https://drive.google.com/file/d/1L786zT3w2dHl0BUkqvZTr_yKyo959B96/view?usp=sharing) | **Resources for Blended Instruction:**  [L1.22 Student HyperDoc](https://docs.google.com/document/d/1m59CR5DzUIVtMyyjkNlP9K-mGozznriKrWZc43yVnh0/view?usp=sharing)  **Intervention – Remediation**  HHMI: [Developing an Explanation for Mouse Fur Color](https://www.biointeractive.org/classroom-resources/developing-explanation-mouse-fur-color)  **Intervention – Enrichment**  [Gene pool and speciation](https://drive.google.com/file/d/1MNH8dP6v2isI5gszNAz3cYRCdvTX8WNI/view?usp=sharing) |
| [**HS-LS4-1 (9-12.LS4.A.1)**](https://drive.google.com/file/d/1WHtrL5xTp8mnGiSZpGmpvEUOMhP1PO4n/view?usp=sharing)**\*\*\***  [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (9-12.LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\*** | **Lesson 1.23:**  Why did some of the juncos stay in San Diego in the first place instead of migrating back to the mountains with the rest of the juncos?  **Lesson 1.24:** How else have these two populations changed since they split apart?  **Lesson 1.25:** What other juncos do we find in North America? | [Lesson Plan 1.23](https://drive.google.com/open?id=1znzd32MuXdtt2mTYDmi0FjV0rT5eYRCH) (50 min)  [L1.23 Resource Folder](https://drive.google.com/drive/folders/1zREC9pmMnrcVVw-E74XdbqVJB8wEliqV?usp=sharing)  [Lesson Plan 1.24](https://drive.google.com/open?id=1hlwxiV4WihA4goSbkYzyHXu_5jusqll6) (75 min)  [L1.24 Resource Folder](https://drive.google.com/drive/folders/1OZ5OJoR1zX-joDZ6oECM22uODtQ8VsE2?usp=sharing)  [Lesson Plan 25](https://drive.google.com/open?id=1TZ72voI8uV5tofusQY-d4JuQzjAGe_h4) (50 min)  [L1.25 Resource Folder](https://drive.google.com/drive/folders/1jLnSGDR8oEwXJfGV_op6hAzMzMe4ibop?usp=sharing) | **Resources for Blended Instruction:**  [L1.24 Student HyperDoc](https://docs.google.com/document/d/16_JoCUlzoFhgEYRnGH4tEmr0hk5pCf_nib1_srChBUI/view?usp=sharing) |
| [**HS-LS4-1 (9-12.LS4.A.1)**](https://drive.google.com/file/d/1WHtrL5xTp8mnGiSZpGmpvEUOMhP1PO4n/view?usp=sharing)**\*\*\***  [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  [**HS-LS4-5 (9-12.LS4.C.2)**](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)**\*\*** | **Lesson 1.26:** Are the UCSD juncos now a separate species from the mountain juncos?  **Lesson 1.27** How can DNA help us figure out how closely related two different juncos are?  **Lesson 1.28** Where do new heritable trait variations come from? | [Lesson Plan 1.26](https://drive.google.com/open?id=1kjLLD_svnNkMC9Jduhkhv2i36YiwT7WB) (50 min)  [L1.26 Resource Folder](https://drive.google.com/drive/folders/1EbcxMmJBAPTQp3vYaGrZ6xZ0CSd8X6O_?usp=sharing)  [Lesson Plan 1.27](https://drive.google.com/open?id=1qiUTAuSJuzVMrj1Xaff4a5fd2ch85A_8) (90 min)  [L1.27 Resource Folder](https://drive.google.com/drive/folders/1Fx-QY1O3eUhOrM7ZtGPIsc_RwthS6pT5?usp=sharing)  [Lesson Plan 1.28](https://drive.google.com/open?id=1aXtdp1pSGNVy3vY5faqJbAzJ2gAvcn0J) (90 min)  [L1.28 Resource Folder](https://drive.google.com/drive/folders/1s2-vgA5g6XZgadTQbduAoNeFiB29uHPI?usp=sharing) | **Resources for Blended Instruction:**  [L1.27 Student HyperDoc](https://docs.google.com/document/d/1-7abvaHeZdtGBxDV8lhAyCD3Y9Z2-7HQbEj4SECC_vE/view?usp=sharing)  **Intervention – Remediation**  Nature: [Each Organism’s Traits Are Inherited From A Parent Through Transmission of DNA](https://www.nature.com/scitable/topicpage/each-organism-s-traits-are-inherited-from-6524917/) |
| [**HS-LS4-1 (9-12.LS4.A.1)**](https://drive.google.com/file/d/1WHtrL5xTp8mnGiSZpGmpvEUOMhP1PO4n/view?usp=sharing)**\*\*\***  [**HS-LS4-2 (9-12.LS4.B.1)**](https://drive.google.com/file/d/16WAUHuZLdWPn8PGy9Vx-DSQAC-eBpag2/view?usp=sharing)**\*\***  [**HS-LS4-3 (9-12.LS4.B.2)**](https://drive.google.com/file/d/12mRJh7LGdkGorZ0xvJihchF5ROUwPBGx/view?usp=sharing)**\*\***  [**HS-LS4-4 (9-12.LS4.C.1)**](https://drive.google.com/file/d/18bTU9SPZeM_h46RuMQzeu37kkPXXafu2/view?usp=sharing)**\*\*\***  [**HS-LS4-5 (9-12.LS4.C.2)**](https://drive.google.com/file/d/1Kqhaw-4uW83FgUjCdy-OnUS6p0L1xgOH/view?usp=sharing)**\*\*** | **Lesson 1.29**  How can our model explain how life on Earth has changed over time? | Lesson Plan 1.29 (150 min)  [L1.29 Resource Folder](https://drive.google.com/drive/folders/1YVZw3OBO7GjeH3vjqza1Kupuy04Cyayz?usp=sharing) |  |
| [**HS-LS1-1 (9-12.LS1.A.1)**](https://drive.google.com/file/d/1b8FRJnVNqCNxksoq-ymXZi0lspHe9Jss/view?usp=sharing)**\*\*\***  [**HS-LS3-1 (9-12.LS3.A.1**](https://drive.google.com/file/d/1Q0HGwdd2Y6qH5hTVg6Z-MJtOZ-oZNson/view?usp=sharing)**)\*\*\***  [**HS-LS3-2 (9-12.LS3.B.3)**](https://drive.google.com/file/d/1045_MaEn8DdtMWNsx5HCZ5-mHkl8ApEV/view?usp=sharing)**\*\***  [**MS-LS3-1 (9-12.LS3.B.2)**](https://drive.google.com/file/d/1s06RhJ-etQVLdMbGXrx9y4SeMpRN-IcV/view?usp=sharing)**\*\*** | [**Storyline 2**](https://docs.google.com/document/d/1Gc9tdiOAcci6tZxjaAM2h2kVoB3k2DJB6DGJNatfWMw/edit)  **DMD**  **Overview:** In this unit on genetics and heredity, students ask questions about a group of boys with Duchenne Muscular Dystrophy. Students investigate the role of proteins, DNA, and inheritance in the disorder. Students figure out how heritable traits and disorders are related to the structure and function of proteins. Students then ask questions about how we can use genetic engineering technologies to cure genetic disorders and explore the ethical implications of need technologies such as, CRISPR-Cas9. | **Lesson 2.1**  How is life similar and/or different for the kids in the video?  **Lesson 2.2**  What is happening to the muscles of the boys in the video? | [Lesson Plan 2.1](https://drive.google.com/drive/folders/1ctVpcfZ6AVLJzMQRlbtJIQSEaHaPcGKJ) (75 min)  [L2.1 Resource Folder](https://drive.google.com/drive/folders/1ctVpcfZ6AVLJzMQRlbtJIQSEaHaPcGKJ?usp=sharing)  [Lesson Plan 2.2](https://drive.google.com/drive/folders/1dRZO02EFnYKv58LOnBIa_6d7gAJfc1Nb) (50 min)  [L2.2 Resource Folder](https://drive.google.com/drive/folders/1dRZO02EFnYKv58LOnBIa_6d7gAJfc1Nb?usp=sharing) | **Resources for Blended Instruction:**  [L2.1 Student HyperDoc](https://docs.google.com/document/d/175_-VxY6KzVA_H9z6EzHFH1_8fYPSQUbc-BQlD_vCF8/view?usp=sharing)  [L2.2 Student HyperDoc](https://docs.google.com/document/d/1KsK3VQscOiNaVWlxRmr6aD2m9veSgUPoxkBQdEw46ow/view?usp=sharing) |
| [**HS-LS3-2 (9-12.LS3.B.3)**](https://drive.google.com/file/d/1045_MaEn8DdtMWNsx5HCZ5-mHkl8ApEV/view?usp=sharing)**\*\***  [**MS-LS3-1 (9-12.LS3.B.2)**](https://drive.google.com/file/d/1s06RhJ-etQVLdMbGXrx9y4SeMpRN-IcV/view?usp=sharing)**\*\***  [**HS-LS1-1 (9-12.LS1.A.1)**](https://drive.google.com/file/d/1b8FRJnVNqCNxksoq-ymXZi0lspHe9Jss/view?usp=sharing)**\*\*\*** | **Lesson 2.3** Why do healthy people get stronger with exercise but the people with DMD don’t? | [Lesson Plan 2.3](https://drive.google.com/drive/folders/1rRoo2CQJIFc1QjC1MjFMSs0pZtbY7Yl7) (160 min)  [L2.3 Resource Folder](https://drive.google.com/drive/folders/1rRoo2CQJIFc1QjC1MjFMSs0pZtbY7Yl7?usp=sharing) | **Resources for Blended Instruction:**  [L2.3 Student HyperDoc](https://docs.google.com/document/d/1lNxYEoQaAKUh5-LF_hlDxSbbAVtD86QW_d98rO4kWko/view?usp=sharing)  **Intervention – Remediation:**  Lesson 2.3: [Review](https://www.khanacademy.org/science/high-school-biology/hs-biology-foundations/hs-biological-macromolecules/a/hs-biological-macromolecules-review) and [practice](https://www.khanacademy.org/science/high-school-biology/hs-biology-foundations/hs-biological-macromolecules/e/biological-macromolecules) structure and function of macromolecules ([proteins](https://www.khanacademy.org/science/high-school-biology/hs-biology-foundations/hs-biological-macromolecules/v/introduction-to-proteins-and-amino-acids)). |
| [**HS-LS1-1 (9-12.LS1.A.1)**](https://drive.google.com/file/d/1b8FRJnVNqCNxksoq-ymXZi0lspHe9Jss/view?usp=sharing)**\*\*\***    [**HS-LS3-3 (9-12.LS3.B.4)**](https://drive.google.com/file/d/1lC6U66UaNeUw4fCJ3f2a6RjK2x43Gyif/view?usp=sharing)**\*\*\*** | **Lesson 2.4** Why don’t people with DMD make dystrophin? | [Lesson Plan 2.4](https://drive.google.com/drive/folders/1trXwG8Z2DpEylZZDU4BWLr88odageUsN) (160 min)  [Lesson 2.4 Resource Folder](https://drive.google.com/drive/folders/1trXwG8Z2DpEylZZDU4BWLr88odageUsN)  1.Transcription/translation practice (codon wheel)  2.Review vocab: chromosome, gene, allele, DNA  3.Mutations (point & frame shift) | **Resources for Blended Instruction:**  [L2.4 Student HyperDoc](https://docs.google.com/document/d/1AK9fS91x0Ovzsjq6KP4RWMSfcCREDI29VowW-mETaFk/view?usp=sharing)  **Intervention – Remediation:**  Lesson 2.4: Review vocab: [chromosome, gene, allele, DNA](https://socratic.org/questions/how-are-dna-chromosomes-genes-and-alleles-related)  **Intervention – Enrichment:**  Lesson 2.4: Transcription and translation (codon wheel); mutations (point & frame shift) [overview](https://www.khanacademy.org/science/biology/gene-expression-central-dogma/central-dogma-transcription/a/the-genetic-code-discovery-and-properties) and [practice (with answers)](https://www.nederland.k12.tx.us/view/13434.pdf) |
| [**HS-LS1-1 (9-12.LS1.A.1)**](https://drive.google.com/file/d/1b8FRJnVNqCNxksoq-ymXZi0lspHe9Jss/view?usp=sharing)**\*\*\***  [**HS-LS3-3 (9-12.LS3.B.4)**](https://drive.google.com/file/d/1lC6U66UaNeUw4fCJ3f2a6RjK2x43Gyif/view?usp=sharing)**\*\*\***  [**HS-LS3-2 (9-12.LS3.B.3)**](https://drive.google.com/file/d/1045_MaEn8DdtMWNsx5HCZ5-mHkl8ApEV/view?usp=sharing)**\*\*** | **Lesson 2.4**  Why don’t people with DMD make dystrophin?  **Lesson 2.5:**  What do different proteins do? | [Lesson Plan 2.4](https://drive.google.com/drive/folders/1trXwG8Z2DpEylZZDU4BWLr88odageUsN) (90 min)  [Lesson 2.4 Resource Folder](https://drive.google.com/drive/folders/1trXwG8Z2DpEylZZDU4BWLr88odageUsN)  1.Review parts of a reaction: product/reactant  2. Clarify proteins and enzymes  [Lesson 2.5](https://drive.google.com/drive/folders/1oicSXZDfC34BYjebBcIu3sGnwvSNL49G) (90 min)  [Lesson 2.5 Resource Folder](https://drive.google.com/drive/folders/1oicSXZDfC34BYjebBcIu3sGnwvSNL49G) | **Resources for Blended Instruction:**  [L2.5 Student HyperDoc](https://docs.google.com/document/d/1nJ1ZTkgiRDVHr9MMh-re7Pr_8pQxXPryy11usY3rApI/view?usp=sharing)  **Intervention – Remediation:**  Lesson 2.4:  1.Review [parts of a reaction: product/reactant](https://courses.lumenlearning.com/cheminter/chapter/reactants-and-products/#:~:text=The%20substance(s)%20to%20the,the%20arrow%20are%20called%20products%20.)  2. Clarify [proteins and enzymes](https://www.nature.com/scitable/topicpage/protein-function-14123348/) |
| [**HS-LS1-1 (9-12.LS1.A.1)**](https://drive.google.com/file/d/1b8FRJnVNqCNxksoq-ymXZi0lspHe9Jss/view?usp=sharing)**\*\*\***  [**HS-LS3-1 (9-12.LS3.A.1**](https://drive.google.com/file/d/1Q0HGwdd2Y6qH5hTVg6Z-MJtOZ-oZNson/view?usp=sharing)**)\*\*\***  [**HS-LS3-2 (9-12.LS3.B.3)**](https://drive.google.com/file/d/1045_MaEn8DdtMWNsx5HCZ5-mHkl8ApEV/view?usp=sharing)**\*\***  [**HS-LS3-3 (9-12.LS3.B.4)**](https://drive.google.com/file/d/1lC6U66UaNeUw4fCJ3f2a6RjK2x43Gyif/view?usp=sharing)**\*\*\*** | **Lesson 2.6** How did the boys in the video get the mutation that results in DMD?  **Lesson 2.7**  Why is DMD affecting mostly boys?  **Lesson 2.8**  Assessment | [Lesson Plan 2.6](https://drive.google.com/drive/folders/1GoIX-G6qDrcH1Zyfa8WQgt2nSsoOcYPS) (75 min) [Lesson 2.6 Resource Folder](https://drive.google.com/drive/folders/1GoIX-G6qDrcH1Zyfa8WQgt2nSsoOcYPS)  1. Reinforce inheritance.  2. Review genes, alleles, chromosomes, DNA  3. Reinforce mutations: changes in DNA cause changes in amino acids  4. Vocab: haploid, diploid, sex-linked trait  [Lesson Plan 2.7](https://drive.google.com/drive/folders/1M7OHEjyVrxgvOBOtJXiSeCPpR_VYavzP)(90 min) [Lesson 2.7 Resource Folder](https://drive.google.com/drive/folders/1M7OHEjyVrxgvOBOtJXiSeCPpR_VYavzP)  [Lesson Plan 2.8](https://drive.google.com/drive/folders/12-A2kCCCJzOKYb3vFfJupBQnMchduzaM) (75 min)  [Lesson 2.8 Resource Folder](https://drive.google.com/drive/folders/12-A2kCCCJzOKYb3vFfJupBQnMchduzaM) | **Resources for Blended Instruction:**  [L2.6 Student HyperDoc](https://docs.google.com/document/d/1Fkxpwb7xNr4g8gzxnm3odUrfOK41vfyflSP2qWQ0-70/view?usp=sharing)  [L2.7 Student HyperDoc](https://docs.google.com/document/d/1jluLlgnbceb5mOTdd9c3mFOuZzfSpv7P1PQS-sI33Eg/view?usp=sharing) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Quarter 3** | | | | | |
| **Standards Based Curriculum** | | | **Aligned Instructional Resources** | | **Assessment for Student Learning** |
| **Standards & Proficiency Scales** | **Topic** | **Essential Questions** | **Text/Print Resources** | **Resources for Blended Instruction and Research Based Intervention** | **Assessment & Proficiency Scales** |
| [**HS-LS2-1 (9-12.LS2.A.1)**](https://drive.google.com/file/d/1bmLW3f6wIhsqB0h95wZ3ZnU2zc5t6fNS/view?usp=sharing)**\*\*\***  [**HS-LS2-2 (9-12.LS2.A.2)**](https://drive.google.com/file/d/1aWYi2cdzIBdueTpTnyvCg7uqC6BlCi7R/view?usp=sharing)**\*\***  [**HS-LS2-6 (9-12.LS2.C.1)**](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)**\*\***  [**HS-LS2-4 (9-12.LS2.B.2)**](https://drive.google.com/file/d/1ujwv1DStAvkQfNiyQsxat5NgbhnPoz6z/view?usp=sharing)**\*\*\*** | **Storyline 3**  **Bend 1:** [**Serengeti**](https://docs.google.com/document/d/1EKvFOyAwTW32SCZwI_cDNEwKXXWp_iU9PZsZwhoLHIE/edit)  **Overview:** In this high school unit on ecosystems, students investigate the case of the rapid increase and decline of the buffalo population in the Serengeti. It motivates students to ask questions and develop initial hypotheses for what could have changed in the ecosystem to create such drastic population changes. Students analyze data from many populations of organisms in the Serengeti to figure out how disease eradication in the 1960s led to the major changes we see in the Serengeti today. | **Lesson 3.1**  What explains why the population of the buffalos of the Serengeti changes so much?  **Lesson 3.2** What do buffaloes eat and is there more of it for them to eat now? | [Lesson Plan 3.1](https://drive.google.com/drive/folders/1W8FgLzTkjTPoIOBpGKfYpeVEIjFOcTKT) (90 min)  [Lesson 3.1 Resource Folder](https://drive.google.com/drive/folders/1W8FgLzTkjTPoIOBpGKfYpeVEIjFOcTKT)  [Lesson Plan 3.2](https://drive.google.com/drive/folders/1TNi6NugPBrQCU1ZXqb6zgauWRJig1RLa) (50 min)  [Lesson 3.2 Resource Folder](https://drive.google.com/drive/folders/1TNi6NugPBrQCU1ZXqb6zgauWRJig1RLa) | **Resources for Blended Instruction:**  [L3.1 Student HyperDoc](https://docs.google.com/document/d/1KA8JxS5ElEYk3TkYlHM4Tv6TSCvQsTmu7cVHJIJbx1A/view?usp=sharing)  [L3.2 Student HyperDoc](https://docs.google.com/document/d/1mB7ppti3HGVVQIAh92XqCEpM09tvw-VI_X_RmFcqqUM/view?usp=sharing)  **Intervention – Remediation for HS-LS2-1 (9-12.LS2.A.1)\*\*\*:**  NetLogo: [Wolf Sheep Predation](http://ccl.northwestern.edu/netlogo/models/WolfSheepPredation)  Interactive [Lion Population Modeling](https://smartgraphs-activities.concord.org/activities/225-african-lions-modeling-populations/student_preview/)  [Population Dynamics based on Availability of Resources](https://online.ucpress.edu/abt/article/78/5/396/110105/Population-Dynamics-Based-on-Resource-Availability)  **Intervention – Enrichment for HS-LS2-1 (9-12.LS2.A.1)\*\*\*:**  [Population Explosion](https://learn.concord.org/resources/658/population-explosion) | **Formative Assessments:**  Do Nows  Exit Slips  Activity/Lab Sheets  Quizzes  Transfer Tasks  Homeworks  **District Common Formative Assessment (CFA):** Storyline 3 Pre-Assessment (Bends 1+2)    **Summative Assessments:**  Unit Tests  Projects  **District Common Summative Assessment (CSA):** Storyline Bend 1 Post-Assessment  **Proficiency Scales:**  [HS-LS2-1 (9-12.LS2.A.1)](https://drive.google.com/file/d/1bmLW3f6wIhsqB0h95wZ3ZnU2zc5t6fNS/view?usp=sharing)\*\*\*  [HS-LS2-2 (9-12.LS2.A.2)](https://drive.google.com/file/d/1aWYi2cdzIBdueTpTnyvCg7uqC6BlCi7R/view?usp=sharing)\*\*  [HS-LS2-6 (9-12.LS2.C.1)](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)\*\*  [HS-LS2-4 (9-12.LS2.B.2)](https://drive.google.com/file/d/1ujwv1DStAvkQfNiyQsxat5NgbhnPoz6z/view?usp=sharing)\*\*\* |
| [**HS-LS2-6 (9-12.LS2.C.1)**](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)**\*\*** | **Lesson 3.3:**  Is the changing buffalo population size caused by a changing predator population size?  **Lesson 3.4**  Is the changing buffalo population size caused by a changing predator population size? | [Lesson Plan 3.3](https://drive.google.com/drive/folders/1il6sjcqTZ4M42xcS1gmhcpp6KIv8sSul) (50 Min)  [Lesson 3.3 Resource Folder](https://drive.google.com/drive/folders/1il6sjcqTZ4M42xcS1gmhcpp6KIv8sSul?usp=sharing)  [Lesson Plan 3.4](https://drive.google.com/drive/folders/1pUGFSt8tRX7gCv-XqzxNr7cd5vCpn55I) (50 min)  [Lesson 3.4 Resource Folder](https://drive.google.com/drive/folders/1pUGFSt8tRX7gCv-XqzxNr7cd5vCpn55I?usp=sharing) | **Resources for Blended Instruction:**  [L3.3 Student HyperDoc](https://docs.google.com/document/d/1oemFoXShDl1Th2DMLEwpnWjPrEvjOfV74uA3uyPPtF8/view?usp=sharing)  [L3.4 Student HyperDoc](https://docs.google.com/document/d/1RPC9zI1-GgAcqiyD7-tXXCjB2oOcDxu-XYGtyclT0eA/view?usp=sharing)    **Intervention – Remediation for HS-LS2-6 (9-12.LS2.C.1)\*\***  HHMI: [Dead Zones in Coastal Ecosystems](https://www.biointeractive.org/classroom-resources/dead-zones-coastal-ecosystems)  [Ecology Disrupted – Unintended Consequences of Human Daily Life](https://www.amnh.org/learn-teach/curriculum-collections/ecology-disrupted/bighorn-sheep/lesson-plans/ecology-disrupted)  **Intervention – Enrichment for HS-LS2-6 (9-12.LS2.C.1)\*\***  [Understanding Causal Relationship in Food Webs](http://www.nabtjournal.com/nabtjournal/october_2016?pg=19#pg19)  HHMI: [Modeling Ecosystems on Termite Patterns](https://www.biointeractive.org/classroom-resources/modeling-ecosystem-effects-termite-mound-patterns) |
| [**HS-LS2-1 (9-12.LS2.A.1)**](https://drive.google.com/file/d/1bmLW3f6wIhsqB0h95wZ3ZnU2zc5t6fNS/view?usp=sharing)**\*\*\***  [**HS-LS2-6 (9-12.LS2.C.1)**](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)**\*\*** | **Lesson 3.5** Is there a disease that affected the buffalo population?  **Lesson 3.6** What happened to other herbivores on the Serengeti after the big change created by disease? | [Lesson Plan 3.5](https://drive.google.com/drive/folders/1nadLZ1s-UVNwrgLHWKxYb-kqbTYwEnaa) (90 min)  [Lesson 3.5 Resource Folder](https://drive.google.com/drive/folders/1nadLZ1s-UVNwrgLHWKxYb-kqbTYwEnaa)  [Lesson Plan 3.6](https://drive.google.com/drive/folders/1AtfZvNaS47VEKOj6pMOhZggj9fVCOHrl) (50 min)  [Lesson 3.6 Resource Folder](https://drive.google.com/drive/folders/1AtfZvNaS47VEKOj6pMOhZggj9fVCOHrl) | **Resources for Blended Instruction:**  [L3.5 Student HyperDoc](https://docs.google.com/document/d/1yaVih02-DVJzlLyEqRHYW65xi_FcB0JPO0T2Sm9fd28/view?usp=sharing)  [L3.6 Student HyperDoc](https://docs.google.com/document/d/1SlQkWZfQlkxYdXHR--1rXJlu581tYbZA3XOjEuV-ZQk/view?usp=sharing) |
| [**HS-LS2-6 (9-12.LS2.C.1)**](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)**\*\*** | **Lesson 3.7** How do we know whether or not a population will continue to grow, stay stable, or decline?  **Lesson 3.8** Can a systems comparison help us understand what happened to the buffalo and wildebeest between 1975 and 2000? | [Lesson Plan 3.7](https://drive.google.com/drive/folders/1TP8Tx3jSlbde_VI-QmoajR7-7WcQo9dn) (90 min)  [Lesson 3.7 Resource Folder](https://drive.google.com/drive/folders/1TP8Tx3jSlbde_VI-QmoajR7-7WcQo9dn)  [Lesson Plan 3.8](https://drive.google.com/drive/folders/18FRZ3mc7udLubfHEolMliyet3ifSzIMW) (90 min)  [Lesson 3.8 Resource Folder](https://drive.google.com/drive/folders/18FRZ3mc7udLubfHEolMliyet3ifSzIMW) | **Resources for Blended Instruction:**  [L3.7 Student HyperDoc](https://docs.google.com/document/d/1zb3tFnect0Qqu7MCcXS12Jf3ulEG_fevM2AaNzGkp1M/view?usp=sharing)  [L3.8 Student HyperDoc](https://docs.google.com/document/d/14gyvuSFWLtTRWjOOlazQpyb1clqp6RqwoSmohJwsP-M/view?usp=sharing) |
| [**HS-LS2-1 (9-12.LS2.A.1)**](https://drive.google.com/file/d/1bmLW3f6wIhsqB0h95wZ3ZnU2zc5t6fNS/view?usp=sharing)**\*\*\***  [**HS-LS2-2 (9-12.LS2.A.2)**](https://drive.google.com/file/d/1aWYi2cdzIBdueTpTnyvCg7uqC6BlCi7R/view?usp=sharing)**\*\***  [**HS-LS2-6 (9-12.LS2.C.1)**](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)**\*\*** | **Lesson 3.9**  Is there something special about wildebeest on the Serengeti?  **Lesson 3.10** How can we apply the rules of our model to explain population changes in other ecosystems? | [Lesson Plan 3.9](https://drive.google.com/drive/folders/1FXmBt_aVhEQ5EQpqHbDqOaYpJqfi_XBw) (90 min)  [Lesson 3.9 Resource Folder](https://drive.google.com/drive/folders/1FXmBt_aVhEQ5EQpqHbDqOaYpJqfi_XBw)  [Lesson Plan 3.10](https://drive.google.com/drive/folders/1t1FYs4hBryBoq2O2nvt8v3OrBknJ087j) (50 min)  [Lesson 3.10 Resource Folder](https://drive.google.com/drive/folders/1t1FYs4hBryBoq2O2nvt8v3OrBknJ087j) | **Resources for Blended Instruction:**  **Intervention – Remediation for HS-LS2-2 (9-12.LS2.A.2)\*\***  DataNuggets: [Green Crabs – Invaders in the Great Marsh](http://datanuggets.org/2015/10/green-crabs-invaders-in-the-great-marsh/), [Make Way For Mumichogs](http://datanuggets.org/2016/04/make-way-for-mummichogs/)  HHMI: [Biome Viewer](https://www.biointeractive.org/classroom-resources/biomeviewer)  NetLogo: [Rabbits, Grass, Weeds – An Ecosystem Model](http://ccl.northwestern.edu/netlogo/models/RabbitsGrassWeeds)  **Intervention – Enrichment for HS-LS2-2 (9-12.LS2.A.2)\*\***  [Seeing the Forest From The Trees](https://www.scienceintheclassroom.org/research-papers/seeing-forest-trees)  Science Citizen: [Determining Mosquito Distribution from Egg Data](http://www.citizenscience.us/imp/docs/determiningmosquitodistribution.pdf)  Project: [Bug Lyphe! A Next Generation-Linked to Observational Study in Biodiversity](http://kbsgk12project.kbs.msu.edu/blog/2013/09/15/bug-lyphe-a-next-generation-linked-observational-study-in-biodiversity/) |
| [**HS-LS1-2 (9-12.LS1.A.2)**](https://drive.google.com/file/d/1av4m229XJJrdm45N92O2vB0UCXgf2j3i/view?usp=sharing)**\*\***  [**HS-LS1-5 (9-12.LS1.C.1)**](https://drive.google.com/file/d/1-1qC2EJ2llnHp-F3qF6WfISmGu8B8YM2/view?usp=sharing)**\*\***  [**HS-LS1-6 (9-12.LS1.C.3)**](https://drive.google.com/file/d/147ttIyELHAysKJhN8e1WLGrQrA27Wpxu/view?usp=sharing)**\*\***  [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\*** | **Storyline 3**  **Bend 2:** [**Trees**](https://docs.google.com/document/d/1vkk-1PnnYDCqeC4ZwdIGU4HWZpEfLS8zWnsiusAg07I/edit)  **Overview:**  In Bend 2, students evaluate the claim that trees store carbon and can reduce the impact of climate change. Students figure out how photosynthesis and cellular respiration are key mechanisms to explaining the role of trees in climate mitigation. Finally, students explore and compare climate change mitigation solutions. | **Lesson 3.11**  How can we reduce the negative impacts of human activity on climate?  **Lesson 3.12**  Do trees really change the composition of the atmosphere around us? | [Lesson Plan 3.11](https://drive.google.com/drive/folders/19Brx4KzmiTc1vK1nA5PhYh4UCO1W-PtB) (90 min)  [Lesson 3.11 Resource Folder](https://drive.google.com/drive/folders/19Brx4KzmiTc1vK1nA5PhYh4UCO1W-PtB)  Research background info about Colorado’s carbon emissions  [Lesson Plan 3.12](https://drive.google.com/drive/folders/1uhzAnf9V6Qk12Bd17Q9bWZUJuKfGCHrB) (90 min)  [Lesson 3.12 Resource Folder](https://drive.google.com/drive/folders/1uhzAnf9V6Qk12Bd17Q9bWZUJuKfGCHrB)  Review gas exchange cycle | **Resources for Blended Instruction:**  [L3.11 Student HyperDoc](https://docs.google.com/document/d/1aQHtN7wh9ToA9o-xjjq8HYPCnCqh0aHUqC7T8-kL-4o/view?usp=sharing)  **Intervention – Remediation for HS-LS1-2 (9-12.LS1.A.2)\*\***  HHMI: [How we get our skin color](https://www.biointeractive.org/classroom-resources/interactive-exploration-how-we-get-our-skin-color)  Reading: [Enzymes Help Us Digest Food](https://serendipstudio.org/exchange/waldron/enzymes)  **Intervention – Enrichment for HS-LS1-2 (9-12.LS1.A.2)\*\***  Gizmo Simulation: [Designing a Digestive System](https://www.explorelearning.com/index.cfm?method=cResource.dspDetail&ResourceID=1050) |
| [**HS-LS1-2 (9-12.LS1.A.2)**](https://drive.google.com/file/d/1av4m229XJJrdm45N92O2vB0UCXgf2j3i/view?usp=sharing)**\*\***  [**HS-LS1-3 (9-12.LS1.A.3)**](https://drive.google.com/file/d/1JZbobb1cwLR2hli2Mad9nHMk5Nwb4d5e/view?usp=sharing)**\*\***  [**HS-LS1-5 (9-12.LS1.C.1**](https://drive.google.com/file/d/1-1qC2EJ2llnHp-F3qF6WfISmGu8B8YM2/view?usp=sharing)**)\*\***  [**HS-LS1-6 (9-12.LS1.C.3)**](https://drive.google.com/file/d/147ttIyELHAysKJhN8e1WLGrQrA27Wpxu/view?usp=sharing)**\*\***  [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\*** | **Lesson 3.13**  How does carbon dioxide get into a tree and what does the tree do with it?  **Lesson 3.14**  How does a tree get the water it needs for photosynthesis? | [Lesson Plan 3.13](https://drive.google.com/drive/folders/1N7yBXbjrigLGpjyns_WrF06mCmD4GVmA) (90 min)  [Lesson 3.13 Resource Folder](https://drive.google.com/drive/folders/1N7yBXbjrigLGpjyns_WrF06mCmD4GVmA)  [Lesson Plan 3.14](https://drive.google.com/drive/folders/159TIugLYz_O7ReTzuqlAxPK0Nf21WqLf) (90 min)  [Lesson 3.14 Resource Folder](https://drive.google.com/drive/folders/159TIugLYz_O7ReTzuqlAxPK0Nf21WqLf) | **Resources for Blended Instruction:**  [L3.13-3.14 Student HyperDoc](https://docs.google.com/document/d/12_ltLm_MRjYot9HJipihA4hmVnbFSgJFZbwTuyXQPpQ/view?usp=sharing)  **Intervention – Remediation:**  Lesson 3.13: [Review structure of chloroplasts and chemical equation for photosynthesis](https://www.nature.com/scitable/topicpage/photosynthetic-cells-14025371/#:~:text=In%20plants%2C%20the%20so%2Dcalled,the%20aforementioned%20chlorophyll%20pigments%20reside.&text=The%20chloroplast%20is%20involved%20in,(O2)%20is%20released.), Britanica Video: [Structure of Chloroplast and Its Role in Photosynthesis](https://www.britannica.com/video/152175/Chloroplasts-photosynthesis-role-process)  Lesson 3.14: Review [passive cell transport and tonicities](https://courses.lumenlearning.com/nemcc-biology1/chapter/passive-transport/)  **Intervention – Enrichment** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Quarter 4** | | | | | |
| **Standards Based Curriculum** | | | **Aligned Instructional Resources** | | **Assessment for Student Learning** |
| **Standards & Proficiency Scales** | **Topic** | **Essential Questions** | **Text/Print Resources** | **Resources for Blended Instruction and Research Based Intervention** | **Assessment & Proficiency Scales** |
| [**HS-LS1-2 (9-12.LS1.A.2)**](https://drive.google.com/file/d/1av4m229XJJrdm45N92O2vB0UCXgf2j3i/view?usp=sharing)**\*\***  [**HS-LS1-5 (9-12.LS1.C.1)**](https://drive.google.com/file/d/1-1qC2EJ2llnHp-F3qF6WfISmGu8B8YM2/view?usp=sharing)**\*\***  [**HS-LS1-6 (9-12.LS1.C.3)**](https://drive.google.com/file/d/147ttIyELHAysKJhN8e1WLGrQrA27Wpxu/view?usp=sharing)**\*\***  [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\***  [**HS-LS2-7 (9-12.LS2.C.2)**](https://drive.google.com/file/d/1fev3Wmph3XgaWfISzCO3jTt-XcN9tTzp/view?usp=sharing)**\*** | **Storyline 3**  **Bend 2:** [**Trees**](https://docs.google.com/document/d/1vkk-1PnnYDCqeC4ZwdIGU4HWZpEfLS8zWnsiusAg07I/edit)  **Overview:**  In Bend 2, students evaluate the claim that trees store carbon and can reduce the impact of climate change. Students figure out how photosynthesis and cellular respiration are key mechanisms to explaining the role of trees in climate mitigation. Finally, students explore and compare climate change mitigation solutions. | **Lesson 3.15**  How does a tree move substances like water and glucose around?  **Lesson 3.16**  Do other parts of the plant need glucose, how does the plant use it? | [Lesson Plan 3.15](https://drive.google.com/drive/folders/16-xMj-w43ZBAY9E48mb9a5-zVA04U8jV) (90 min)  [Lesson 3.15 Resource Folder](https://drive.google.com/drive/folders/16-xMj-w43ZBAY9E48mb9a5-zVA04U8jV)  Capillary action demonstration with celery and food coloring. Review how to use a microscope.  [Lesson Plan 3.16](https://drive.google.com/drive/folders/1mdsFQlsCWoVQejwlKauhOR_Pkor77cQv) (90 min)  [Lesson 3.16 Resource Folde](https://drive.google.com/drive/folders/1mdsFQlsCWoVQejwlKauhOR_Pkor77cQv)r | **Resources for Blended Instruction:**  [L3.15 Student HyperDoc](https://docs.google.com/document/d/13TW-TDGkcC9KUuUv2OxMF0CcW9TfRL-hwJNLrZvzQHA/view?usp=sharing)  [L3.16 Student HyperDoc](https://docs.google.com/document/d/1O_qbRsVwnSny3YgRcOxA0OYfEBrbiSPq04E9jEObDOM/view?usp=sharing)  **Intervention – Remediation for HS-LS1-5 (9-12.LS1.C.1)\*\***  NetLogo [Simulation: Leaf Photosynthesis](https://learn.concord.org/resources/651/leaf-photosynthesis)  **Intervention – Enrichment for HS-LS1-5 (9-12.LS1.C.1)\*\***  [Carbon Time: Plants](https://carbontime.bscs.org/plants) | **Formative Assessments:**  Do Nows  Exit Slips  Activity/Lab Sheets  Quizzes  Transfer Tasks  Homeworks    **Summative Assessments:**  Unit Tests  Projects  Transfer Tasks  **District Common Summative Assessment (CSA):** Storyline 3 Post-Assessment  **Proficiency Scales:**  [HS-LS1-2 (9-12.LS1.A.2)](https://drive.google.com/file/d/1av4m229XJJrdm45N92O2vB0UCXgf2j3i/view?usp=sharing)\*\*  [HS-LS1-3 (9-12.LS1.A.3)](https://drive.google.com/file/d/1JZbobb1cwLR2hli2Mad9nHMk5Nwb4d5e/view?usp=sharing)\*\*  [HS-LS1-5 (9-12.LS1.C.1)](https://drive.google.com/file/d/1-1qC2EJ2llnHp-F3qF6WfISmGu8B8YM2/view?usp=sharing)\*\*  [HS-LS1-6 (9-12.LS1.C.3)](https://drive.google.com/file/d/147ttIyELHAysKJhN8e1WLGrQrA27Wpxu/view?usp=sharing)\*\*  [HS-LS2-5 (9-12.LS2.B.3)](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)\*\*  [HS-LS2-7 (9-12.LS2.C.2)](https://drive.google.com/file/d/1fev3Wmph3XgaWfISzCO3jTt-XcN9tTzp/view?usp=sharing)\*  [HS-LS1-7 (9-12.LS1.C.2)](https://drive.google.com/file/d/1Vdg9_Lr6lDPuw5eUacAUGdprX3a4iN8k/view?usp=sharing)\*\*  [HS-LS2-4 (9-12.LS2.B.2)](https://drive.google.com/file/d/1ujwv1DStAvkQfNiyQsxat5NgbhnPoz6z/view?usp=sharing)\*\*\*  [HS-ESS3-3 (9-12.ESS3.C.1](https://drive.google.com/file/d/1UQl2MHXTQVUFFloODpemhSP7SGd4VGvJ/view?usp=sharing))\* |
| [**HS-LS1-2 (9-12.LS1.A.2)**](https://drive.google.com/file/d/1av4m229XJJrdm45N92O2vB0UCXgf2j3i/view?usp=sharing)**\*\***  [**HS-LS1-5 (9-12.LS1.C.1)**](https://drive.google.com/file/d/1-1qC2EJ2llnHp-F3qF6WfISmGu8B8YM2/view?usp=sharing)**\*\***  [**HS-LS1-6 (9-12.LS1.C.3**](https://drive.google.com/file/d/147ttIyELHAysKJhN8e1WLGrQrA27Wpxu/view?usp=sharing)**)\*\***  [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\***  [**HS-LS1-7 (9-12.LS1.C.2)**](https://drive.google.com/file/d/1Vdg9_Lr6lDPuw5eUacAUGdprX3a4iN8k/view?usp=sharing)**\*\*** | **Lesson 3.17**  How does glucose turn into cellulose and starch and why?  **Lesson 3.18**  Where does a tree get the energy for growth?  **Lesson 3.19**  What model can we make to connect everything we have learned so far to explain how trees can reverse climate change? | [Lesson Plan 3.17](https://drive.google.com/drive/folders/1mAXxe5GaE8JwDaR1NX-sIF3ZqXM0vpdw) (50 min)  [Lesson 3.17 Resource Folder](https://drive.google.com/drive/folders/1mAXxe5GaE8JwDaR1NX-sIF3ZqXM0vpdw)  [Lesson Plan 3.18](https://drive.google.com/drive/folders/1si9qN3qf9FagbWagdelxJV3RcoRvBqo1) (75 min)  [Lesson 3.18 Resource Folder](https://drive.google.com/drive/folders/1si9qN3qf9FagbWagdelxJV3RcoRvBqo1)  [Lesson Plan 3.19](https://drive.google.com/drive/folders/1DRDVbL2Q3bP1pDOGp8Wh8XJZphuIy4tq) (75 min)  [Lesson 3.19 Resource Folder](https://drive.google.com/drive/folders/1DRDVbL2Q3bP1pDOGp8Wh8XJZphuIy4tq) | **Resources for Blended Instruction:**  [L3.17 Student HyperDoc](https://docs.google.com/document/d/1KzAK9yEEna69R7_ryq6-4jxtu3DVVWxFpU7W_CT-pQI/view?usp=sharing)  [L3.18 Student HyperDoc](https://docs.google.com/document/d/16Xrb-3jDVgXOzUv3rI5MOXRkpXaPge8N521twgLelAI/view?usp=sharing)  [L3.19 Student HyperDoc](https://docs.google.com/document/d/1H1oPhQLnhzwCaXNV2oOJhvbi--67wMn5dhkukqXuR_0/view?usp=sharing)  **Intervention – Remediation for HS-LS1-6 (9-12.LS1.C.3)\*\***  Sophia: [HS-LS1-6](https://www.sophia.org/ngss-standard-hs-ls1-6-pathway)  HHMI: [Molecular Structure of Fat](https://www.biointeractive.org/classroom-resources/molecular-structure-fat), [Fate of Fat](https://www.biointeractive.org/classroom-resources/fate-fat)  **Intervention – Enrichment for HS-LS1-6 (9-12.LS1.C.3)\*\***  Carbon Time**:** [Decomposers](https://carbontime.bscs.org/decomposers), [Plants](https://carbontime.bscs.org/plants), [Animals](https://carbontime.bscs.org/animals) |
| [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\***  [**HS-LS2-6 (9-12.LS2.C.1)**](https://drive.google.com/file/d/1dHHsYu6lN9W896YIop-2eSw5PXbcNJmM/view?usp=sharing)**\*\***  [**HS-ETS1-2 (9-12.ETS1.A.2)**](https://docs.google.com/document/d/1QkaGum0lp6YxyRJ6AthAAGtFegWJ9PTktzDMT9op1To/edit?usp=sharing)**\*** | **Lesson 3.20**  Just how much carbon can a million trees store?  **Lesson 3.21**  Should we plant a million of the same kind of tree and why or why not? | [Lesson Plan 3.20](https://drive.google.com/drive/folders/165rsQAfGxvGamPr_paNUnsXtLZ8mOlP1) (50 min)  [Lesson 3.20 Resource Folder](https://drive.google.com/drive/folders/165rsQAfGxvGamPr_paNUnsXtLZ8mOlP1)  [Lesson Plan 3.21](https://drive.google.com/drive/folders/1ynTwdA8k1pGVtZ37xeklP5jD9BYLaLDT) (75 min)  [Lesson 3.21 Resource Folder](https://drive.google.com/drive/folders/1ynTwdA8k1pGVtZ37xeklP5jD9BYLaLDT) | **Resources for Blended Instruction:**  [L3.20 Student HyperDoc](https://docs.google.com/document/d/1b-a85fTp93b_OIdAtfRehP9krM_mNYlKwt5MepIK-c0/view?usp=sharing)  **Intervention – Remediation for HS-LS2-5 (9-12.LS2.B.3)\*\***  CalcAdemy: [Timelapse: Photosynthesis Seen From Space](https://www.calacademy.org/educators/timelapse-photosynthesis-seen-from-space)  HHMI: [Trends in Atmospheric Carbon Dioxide](https://www.biointeractive.org/classroom-resources/trends-atmospheric-carbon-dioxide)  **Intervention – Enrichment for HS-LS2-5 (9-12.LS2.B.3)\*\***  Annenberg Learned: [Carbon Lab](https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/carbon-lab/) |
| [**HS-LS2-3 (9-12.LS2.B.1)**](https://drive.google.com/file/d/1bCl9-NssCETT0N1OoWn506u3t2VdLH8S/view?usp=sharing)**\*\***  [**HS-LS2-4 (9-12.LS2.B.2)**](https://drive.google.com/file/d/1ujwv1DStAvkQfNiyQsxat5NgbhnPoz6z/view?usp=sharing)**\*\*\***  [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\*** | **Lesson 3.22**  How long does a tree store carbon? Where does it go if the tree dies?  **Lesson 3.23**  How long does a tree store carbon? Where does it go if the tree dies? | [Lesson Plan 3.22](https://drive.google.com/drive/folders/1IcChyNbSWIDEr4fkGGam-F2e9X23dOSN) (75 min)  [Lesson 3.22 Resource Folder](https://drive.google.com/drive/folders/1IcChyNbSWIDEr4fkGGam-F2e9X23dOSN)  [Lesson Plan 3.23](https://drive.google.com/drive/folders/1IcChyNbSWIDEr4fkGGam-F2e9X23dOSN?usp=sharing) (75 min)  [Lesson 3.23 Resource Folder](https://drive.google.com/drive/folders/1IcChyNbSWIDEr4fkGGam-F2e9X23dOSN?usp=sharing) | **Resources for Blended Instruction:**  (coming soon)  L3.22 Student HyperDoc  L3.23 Student HyperDoc  **Intervention – Remediation for HS-LS2-3 (9-12.LS2.B.1)\*\***  [Fermentation in a bag](https://www.glbrc.org/outreach/educational-materials/fermentation-bag)  [Yellowstone: Food Webs and Energy Pyramids](https://serendipstudio.org/exchange/bioactivities/foodweb) |
| [**HS-LS2-4 (9-12.LS2.B.2**](https://drive.google.com/file/d/1ujwv1DStAvkQfNiyQsxat5NgbhnPoz6z/view?usp=sharing)**)\*\*\***  [**HS-LS2-5 (9-12.LS2.B.3)**](https://drive.google.com/file/d/1dSZ7A84BKgYlUNUWsYIq8OkP0thEK2Tw/view?usp=sharing)**\*\***  [**HS-LS2-7 (9-12.LS2.C.2)**](https://drive.google.com/file/d/1fev3Wmph3XgaWfISzCO3jTt-XcN9tTzp/view?usp=sharing)**\***  [**HS-ESS3-3 (9-12.ESS3.C.1**](https://drive.google.com/file/d/1UQl2MHXTQVUFFloODpemhSP7SGd4VGvJ/view?usp=sharing)**)\*** [**HS-ESS3-4 (9-12.ESS3.C.2)**](https://drive.google.com/file/d/1VC9NS8AXZwa07fwWxGoCfZI9AX4-pZGV/view?usp=sharing)**\***  [**HS-ETS1-2 (ETS1.A.2)**](https://docs.google.com/document/d/1QkaGum0lp6YxyRJ6AthAAGtFegWJ9PTktzDMT9op1To/edit?usp=sharing)**\***  [**HS-ETS1-4 (ETS1.B.2)**](https://docs.google.com/document/d/1EnagEvIPYU9KT-UipM8FeSI7KtKQ4lO8fAfoeZSS-Ac/edit?usp=sharing)**\*** | **Lesson 3.24**  How does planting trees compare to other solutions for climate change? | [Lesson Plan 3.24](https://drive.google.com/drive/folders/16YAEv84kYTktMg6ntu4WHL-mIepcAy-z?usp=sharing) (150 min)  [Lesson 3.24 Folder](https://drive.google.com/drive/folders/16YAEv84kYTktMg6ntu4WHL-mIepcAy-z?usp=sharing) | **Resources for Blended Instruction:**  (coming soon)  L3.24 Student HyperDoc  **Intervention – Enrichment for HS-LS2-7 (9-12.LS2.C.2)\*\***  [Solution Design to a Human Impact Environmental Problem](https://sharemylesson.com/teaching-resource/human-impact-environment) |