

Naperville North High School Principles of Biology Syllabus 2026/2027



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D203 Profile of A Learner	Profile of a Learner guides our efforts in creating educational experiences that are relevant, engaging, and impactful and outlines the key competencies and descriptors our community has identified as essential for our students: Adaptability, Communication, Critical Thinking, Learner's Mindset, Global Citizen.
Course Description	Biology is a course that investigates the interconnections of life. Scientific inquiry, or questioning, engages students in the study of the relationships among organisms, energy flow, the cell, heredity, how ecosystems affect species over time, and the relationship between structure and function.
Course Textbook & Resources	You should come to class with the following materials each day: ● Assignment Notebook (will use everyday) ● Chromebook (bring charged) ● Chromebook Charger (I cannot guarantee there will be one in class) ● Current Unit Packet ● Homework ● 3 Ring Binder or Folder ● Notebook/Paper ● Pens/Pencils
Course Standards & Weights	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. HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms HS-LS1-3. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis. HS-LS1-5. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy. 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. 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. 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. HS-LS2-4. Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. 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. HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales. 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. 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.

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HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

HS-LS2-8. Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.

HS-LS4-6. Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

HS-LS1-4. Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms

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.

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.

HS-LS3-3. Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

HS-LS4-1. Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

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.

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.

HS-LS4-4. Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

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.

SEL Standards

1C.4b. Apply strategies to overcome obstacles to goal achievement. 2B.4b. Demonstrate respect for individuals from different social and cultural groups. 3B.4a. Evaluate personal abilities to gather information, generate alternatives, and anticipate the consequences of decisions.

Units of Study:

Semester 1

Scientific Method

Homeostasis

Energy & Photosynthesis

Cells

Ecosystems

Semester 2

Mitosis

Meiosis

DNA/Genetics

Evolution

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in the process for the final product OR formative assessments are aligned to standards, allow students to practice in the same assessment format, and gain feedback for improvement before the summative assessment.	assessments. ☐ A one-time performance on an assessment does not reflect the student's level of proficiency leading up to the assessment. ☐ Summative assessment score is below 85%.
Not eligible for reassessment	Eligible for reassessment if all three statements above are true.

- Reassessment Parameters:
- The reassessment opportunity will require designated learning experiences that demonstrate readiness as assigned by the teacher.
 - Reassessments MUST be completed within 5 school days of the student receiving feedback unless otherwise determined by the instructor. The reassessment deadline should be communicated in an IC comment.
 - The final reassessment score will be capped at 85%.

Student Communication

- Students are encouraged to communicate with teachers regarding questions.
- Teachers make every effort to respond to emails and phone calls within 24 hours during the workweek.
- The best way to communicate with teachers is through email; however, if you haven't received a response within 48 hours, please resend the email or call their voicemail. Your email may have been filtered.

Additional Resources for Support

- You can utilize WIN or make an appointment with your teacher should you need additional instruction or support in learning material.
- You can attend peer tutoring in the Lit Center during lunch periods to receive extra support or to work on assignments.
- You can drop in to work with a peer tutor during lunch periods or before school in the Literacy Center.

Parents or Guardians Partnership

- Naperville North believes in a collective partnership with parents/guardians which provides students the best opportunities for success.
- Some ways parents/guardians can support their student's learning are:
- Actively check Infinite Campus for their student's grades.
 - Infinite Campus is a tool to progress monitor student work until the final course grade is posted.
 - Monthly progress grades are posted and represent the current grade of a student in the course at that moment in time.
 - Discuss missing assignments, reiterate due dates, help organize folders, materials, assignment notebooks, and review upcoming projects and assessments.