ILEARN Performance Level Descriptors (PLDs)
Biology

Performance Level Descriptors (PLDs) serve as a foundational resource in the assessment development process to inform item development, and characterize student performance based on Indiana Academic Standards. PLDs are written from three perspectives: Policy PLDs, Range PLDs and Threshold PLDs.

Policy PLDs: Policy PLDs provide overarching claims about a student's performance and are used by policymakers and stakeholders to articulate expectations about a state's performance standards.

Range PLDs: Range PLDs provide content-specific claims across each Indiana Academic Standard to represent the range of expectations for student performance within each proficiency level.

Threshold PLDs: Threshold PLDs provide content-specific claims across each Academic Standard to represent expectations for student performance surrounding each cut point as a model for standard setting. The Threshold PLDs will be created by panelists during standard setting in Summer 2019 to help define the threshold for "just barely" meeting the expectation for each performance level.

The Policy PLDs approved by the Indiana State Board of Education for ILEARN consist of the following:

LEVEL 1: Below Proficiency
Indiana students below proficiency have not met current grade level standards. Students may require significant support to develop the knowledge, application, and analytical skills needed to be on track for college and career readiness.

LEVEL 2: Approaching Proficiency
Indiana students approaching proficiency have nearly met current grade level standards by demonstrating some basic knowledge, application, and limited analytical skills. Students may require support to be on track for college and career readiness.

LEVEL 3: At Proficiency
Indiana students at proficiency have met current grade level standards by demonstrating essential knowledge, application, and analytical skills to be on track for college and career readiness.

LEVEL 4: Above Proficiency
Indiana students above proficiency have mastered current grade level standards by demonstrating more complex knowledge, application, and analytical skills to be on track for college and career readiness.

The subsequent pages highlight the Range PLDs for each Indiana Academic Standard. These PLDs can be used to inform instructional practices as educators consider proficiency of the content. Additionally, educators may use the content examples to consider how to remediate or extend key instructional concepts to transition students across proficiency levels of performance.

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Review this sample which models ways you can use the PLDs to think about the expectations across the continuum of proficiency. The sample provides context around how you could think about the way the descriptors differentiate student performance across the continuum and how you could use those descriptors in your classroom.

	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
Biology Standard: B.1.5	Identify the hierarchical organization of interacting systems (cell, tissue, organ, organ system)	Use a model to describe the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.	Develop and use a model to illustrate the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms	Develop, use and evaluate a model to illustrate the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.

Classroom Implications	The key difference between Below Proficiency and Approaching Proficiency lies in a student's ability to identify interacting biological systems from the most simple to the most complex . When thinking about moving students into Approaching Proficiency, focus on the functions of each part of the biological system.	Students who are Approaching Proficiency can use a model to identify the hierarchy of the different biological systems as well as identify the specific function the systems serve. When moving students into At Proficiency, guide students toward thinking about how the different levels of the biological system interact to help a multicellular organism to survive.	The main difference between students At Proficiency and Above Proficiency is the ability of students to develop a model to show the organization of biological systems in a multicellular organism. When moving students into Above Proficiency, ask students to review an existing model of interacting biological systems and identify how the model should be revised.

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	Standard	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
Developing and Using Models to Explain Processes					
B.1.3	Develop and use models that illustrate how a cell membrane regulates the uptake of materials essential for growth and survival, while removing or preventing harmful waste materials from accumulating, through the processes of active and passive transport.	Identify active and passive transport.	Use models that illustrate how a cell membrane regulates the uptake of materials essential for growth and survival, while removing or preventing harmful waste materials from accumu-lating through the processes of active and passive transport.	Develop and use models that illustrate how a cell membrane regulates the uptake of materials essential for growth and survival, while removing or preventing harmful waste materials from accumulating through the processes of active and passive transport.	Develop and use models that illustrate how a cell membrane regulates the uptake of materials essential for growth and survival while removing or preventing harmful waste materials from accumulating through the processes of active and passive transport. Apply knowledge of this process to make generalizations to a real-world situation.
B.1.4	Develop and use models to illustrate how specialized struc-tures within cells (i.e., nuclei, ribosomes, Golgi, endoplasmic reticulum) interact to produce, modify, and transport proteins.	Identify the functions of specialized structures within cells (i.e., nuclei, ribosomes, Golgi, endoplasmic reticulum)	Use models to illustrate how specialized structures within cells interact to produce, modify, and transport proteins.	Develop and use models to illustrate how specialized structures within cells interact to produce, modify, and transport proteins.	Develop and use models to illustrate and explain how specialized structures within cells interact to produce, modify, and transport proteins.
B.2.1	Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	Identify the overall reactants and products of photosynthesis.	Identify a model of how photosynthesis transforms light energy into stored chemical energy.	Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	Develop and use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
B.2.2	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.	Identify the overall reactants and products of cellular respiration.	Identify a model that illustrates 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.	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.	Develop and 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.

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	Standard	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
B.2.4	Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.	Identify the role of photosynthesis and cellular respiration in the carbon cycle.	Use a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.	Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.	Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. Apply knowledge of this process to make generalizations to a real-world situation.
B.3.2	Design, evaluate, and refine a model that shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as how these human impacts can be reduced.	Identify how human activities and natural phenomena can change the flow of matter and energy in ecosystems.	Use a model that shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as how these human impacts can be reduced.	Develop and use a model that shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as how these human impacts can be reduced.	Develop, use, and evaluate a model that shows how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and predict how those changes impact the environment and biodiversity of populations in ecosystems of different scales, as well as how these human impacts can be reduced.
B.4.4	Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	Identify the role of cellular division in complex organisms.	Identify a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	Develop and use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
Analyzing Data and Mathematical Thinking					
B.2.3	Use mathematical and/or computational representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	Identify patterns in the cycling of matter and flow of energy among organisms in an ecosystem.	Describe the cycling of matter and flow of energy among organisms in an ecosystem.	Use mathematical or computational representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	Develop and use mathematical or computational representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

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B.3.1	Use mathematical and/or computational representation to explain why the carrying capacity ecosystems can support is limited by the available energy, water, oxygen, and minerals and by the ability of ecosystems to recycle the remains of dead organisms.	Identify factors that limit the carrying capacity ecosystems can support.	Describe why the carrying capacity ecosystems can support is limited by various factors.	Use mathematical or computational representation to explain why the carrying capacity ecosystems can support is limited by various factors.	Develop and use mathematical or computational representation to explain why the carrying capacity ecosystems can support is limited by various factors.
B.4.6	Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	Recall information to answer a question regarding the variation of expressed traits in a population	Calculate the distribution of expressed traits in a population.	Apply concepts of statistics and probability to explain the variation of expressed traits, and correctly calculate the distribution of expressed traits in a population.	Apply concepts of statistics and probability to draw conclusions that explain variation in expressed traits, and correctly calculate the distribution of expressed traits in a population.
B.5.3	Apply concepts of statistics and probability to support a claim that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	Recall that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	Identify data that supports a claim that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	Apply concepts of statistics and probability to support a claim that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	Apply concepts of statistics and probability to draw conclusions that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.
B.5.6	Analyze and interpret data for patterns in the fossil record and molecular data that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.	Identify information to answer a question regarding the existence, diversity, extinction, and change of life forms throughout the history of life on Earth.	Use fossil and molecular data to indicate the existence, diversity, extinction, and change of life forms throughout the history of life on Earth.	Interpret fossil and molecular data for patterns that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth.	Analyze and interpret fossil and molecular data to draw conclusions about the existence, diversity, extinction, and change of life forms throughout the history of life on Earth.

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	Standard	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
SEPS.3	Constructing and performing investigations // Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.	Construct an investigation to answer a scientific question.	Construct an investigation to answer a scientific question. Suggest changes to the experiment to increase data quality.	Construct an investigation using identified variables. Analyze experimental design to evaluate the quality of generated data. Evaluate data to identify and suggest changes to the experiment.	Construct an investigation using identified variables. Analyze experimental design to evaluate the quality of generated data. Analyze and draw conclusions from experimental data, then suggest and justify improvements to the experiment.

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	Standard	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
SEPS.4	Analyzing and interpreting data // Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: "Does this make sense?" "Could my results be duplicated?" and/or "Does the design solve the problem with the given constraints?"	Summarize the results of an investigation.	Summarize the results of an investigation and briefly suggest whether or not the data is valid. Identify potential sources of error in an investigation.	Interpret the results of an investigation and evaluate data for validity. Identify potential sources of error in an investigation.	Analyze the results of an investigation and evaluate data for validity. Analyze an investigation to determine potential sources of error. Suggest modifications to the investigation that would resolve sources of error.

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	Standard	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
SEPS.5	Using mathematics and computational thinking // In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Carry out provided simulations. Predict the behavior of systems.	Carry out provided simulations. Solve equations approximately and identify quantitative relationships when analyzing data. Predict the behavior of systems.	Carry out provided simulations. Solve equations exactly or approximately and apply quantitative relationships when analyzing data. Predict the behavior of systems and test the validity of such predictions.	Carry out provided simulations. Solve equations exactly and explain quantitative relationships when analyzing data. Predict the behavior of systems and justify these predictions. Test the validity of such predictions, and explain the results.
Developing and Using Models to Describe Structure and Function					
B.1.1	Compare and contrast the shape and function of the essential biological macromolecules (i.e. carbohydrates, lipids, proteins, and nucleic acids), as well as, how chemical elements (i.e. carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur) can combine to form these biomolecules.	Identify the function of the essential biological macromolecules.	Identify the shape or function of the essential biological macromolecules. Identify which chemical elements can combine to form these biomolecules.	Compare and contrast the shape or function of the essential biological macromolecules. Describe how chemical elements can combine to form these biomolecules.	Analyze the shape and predict the function of the essential biological macromolecules. Describe how chemical elements can combine to form these biomolecules.

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B.1.2	Analyze how the shape of a molecule determines its role in the many different types of cellular processes (e.g., metabolism, homeostasis, growth and development, and heredity) and understand that the majority of these processes involve proteins that act as enzymes.	Recall that a protein's shape determines its function.	Identify how the shape of a molecule determines its role in the many different types of cellular processes and understand that the majority of these processes involve proteins that act as enzymes.	Analyze how the shape of a molecule determines its role in the many different types of cellular processes and understand that the majority of these processes involve proteins that act as enzymes.	Analyze how the shape of a molecule determines its role in the many different types of cellular processes and understand that the majority of these processes involve proteins that act as enzymes. Predict how a change in shape affects the function of a protein.
B.1.5	Develop and use a model to illustrate the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.	Identify the hierarchical organization of interacting systems (cell, tissue, organ, organ system)	Use a model to describe the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.	Develop and use a model to illustrate the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms	Develop, use and evaluate a model to illustrate the hierarchical organization of interacting systems (cell, tissue, organ, organ system) that provide specific functions within multicellular organisms.
B.4.1	Develop and revise a model that clarifies the relationship between DNA and chromo-somes in coding the instructions for characteristic traits passed from parents to offspring.	Identify the relationship between DNA and chromo-somes in coding the instructions for characteristic traits passed from parents to offspring.	Use a model to clarify the relationship between DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	Develop and use a model that clarifies the relationship between DNA and chromo-somes in coding the instructions for characteristic traits passed from parents to offspring.	Develop, use, and evaluate a model that clarifies the relationship between DNA and chromosomes in coding the instructions for characteristic traits passed from parents to off-spring.
B.4.3	Construct a model to explain that the unique shape and function of each protein is deter-mined by the sequence of its amino acids, and thus is determined by the sequence of the DNA that codes for this protein.	Recall that the unique shape and function of each protein is determined by the sequence of its amino acids.	Use a model to describe that the unique shape and function of each protein is determined by the sequence of its amino acids, and thus is determined by the sequence of the DNA that codes for this protein.	Construct a model to explain that the unique shape and function of each protein is determined by the sequence of its amino acids, and thus is determined by the sequence of the DNA that codes for this protein.	Construct, use, and evaluate a model that explains that the unique shape and function of each protein is determined by the sequence of its amino acids, and thus is determined by the sequence of the DNA that codes for this protein.

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SEPS.2	Developing and using models and tools // A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models. Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.	Identify tools used to conduct a scientific investigation.	Use conceptual models (e.g. mathematical representations, analogies, or diagrams) to predict and explain scientific concepts. Identify appropriate tools used to conduct a scientific investigation.	Develop and use conceptual models (e.g. mathematical representations, analogies, or diagrams) to predict and explain scientific concepts. Identify and use appropriate tools to conduct a scientific investigation.	Develop, use, and evaluate conceptual models (e.g. mathematical representations, analogies, or diagrams) to predict and explain scientific concepts. Identify and use appropriate tools to conduct a scientific investigation.

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Constructing and Communicating an Explanation					
B.4.2	Construct an explanation for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells	Recall that genes code for proteins and that genes are made of DNA.	Identify an explanation for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells	Construct an explanation for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells	Construct an explanation for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. Predict how changes in the DNA will result in changes in the structure of the protein.
B.5.2	Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence including both anatomical and molecular evidence.	Identify an example of anatomical or molecular evidence for common ancestry.	Explain common ancestary using anatomical or molecular evidence.	Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence including both anatomical and molecular evidence.	Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence including both anatomical and molecular evidence. Apply understanding to predict the ancestry of an organism by giving anatomical and molecular evidence.
B.5.5	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.	Identify factors that affect the process of evolution.	Construct an explanation based on evidence that the process of evolution primarily results from some factors.	Construct an explanation based on evidence that the process of evolution primarily results from four factors.	Construct an explanation based on evidence that the process of evolution primarily results from four factors. Predict how altering the any of four factors affects the process of evolution.

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SEPS.1	Posing questions (for science) and defining problems (for engineering) // A practice of science is posing and refining questions that lead to descrip-tions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.	Define a problem and pose a question in the designed or natural world.	Define a problem and pose a question which can be tested through a controlled experiment in the designed or natural world.	Define a problem, identify the constraints, and pose a question that can be tested through a controlled experiment to solve that problem within the designed or natural world.	Define a problem, identify the constraints, and pose a question that can be tested through a controlled experiment to solve that problem within the designed or natural world. Predict possible solutions.
SEPS.6	Constructing explanations (for science) and designing solutions (for engineering) // Scientists and engineers use their results from the investi-gation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.	Identify results from an investigation in the natural or designed world.	Construct explanations from an investigation in the natural or designed world.	Construct explanations in response to data from an investigation in the natural or designed world.	Construct explanations and design solutions in response to data from an investigation in the natural or designed world.

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SEPS.8	Obtaining, evaluating, and communicating information // Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.	State the merit and validity of claims, methods, and designs. Communicate information and ideas.	Evaluate the merit and validity of claims, methods, and designs. Communicate information and ideas clearly.	Critique scientific ideas. Use multiple sources of information to evaluate the merit and validity of claims, methods, and designs. Communicate information and ideas in multiple formats (e.g. using tables, diagrams, graphs, models, and equations, as well as in writing).	Critique scientific ideas using multiple lines of evidence. Use multiple sources of information to evaluate the merit and validity of claims, methods, and designs. Communicate information and ideas in multiple formats (e.g. using tables, diagrams, graphs, models, and equations, as well as in writing).
Evaluating Claims with Evidence					
B.3.3	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, and identify the impact of changing conditions or introducing non-native species into that ecosystem.	Identify the impact of changing conditions or introducing non-native species into an ecosystem.	Summarize the evidence and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, and identify the impact of changing conditions or introducing non-native species into that ecosystem.	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, and identify the impact of changing conditions or introducing non-native species into that ecosystem.	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, and identify the impact of changing conditions or introducing non-native species into that ecosystem. Apply knowledge of these concepts to make generalizations to a real-world situation.

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B.4.5	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 (3) mutations caused by environmental factors.	Identify that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and (3) mutations caused by environmental factors.	Make a claim that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and (3) mutations caused by environmental factors.	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 (3) mutations caused by environmental factors.	Make, defend, and evaluate claims based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and (3) mutations caused by environmental factors.
B.5.1	Evaluate anatomical and molecular evidence to provide an explanation of how organisms are classified and named based on their evolutionary relationships into taxonomic categories.	Recall that organisms are categorized based on their evolutionary relationships.	Use anatomical and molecular evidence to classify organisms based on their evolutionary relationships.	Explain how organisms are classified and named based on their evolutionary relationships into taxonomic categories using anatomical and molecular evidence.	Construct and use a model to explain how organisms are classified and named based on their evolutionary relationships into taxonomic categories using anatomical and molecular evidence.
B.5.4	Evaluate evidence to explain the role of natural selection as an evolutionary mechanism that leads to the adaptation of species, and to support 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/or (3) the extinction of other species.	Recall that natural selection is an evolutionary mechanism that leads to the adaptation of species.	Summarize the role of natural selection as an evolutionary mechanism that leads to the adaptation of species.	Explain, using evidence, the role of natural selection as an evolutionary mechanism that leads to the adaptation of species, and support 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/or (3) the extinction of other species.	Construct a model to explain, using evidence, the role of natural selection as an evolutionary mechanism that leads to the adaptation of species, and support 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/or (3) the extinction of other species.

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	Standard	Below Proficiency	Approaching Proficiency	At Proficiency	Above Proficiency
SEPS.7	Engaging in argument from evidence // Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.	Identify competing ideas and methods. Identify an explanation for a natural phenomenon or a solution to a design problem.	Compare competing ideas and methods based on merit. Identify a reasonable explanation for a natural phenomenon or a reasonable solution to a design problem.	Consider and compare competing ideas and methods based on merits. Use evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem.	Consider, compare, and evaluate competing ideas and methods based on merit. Use evidence to identify and justify the best explanation for a natural phenomenon or the best solution to a design problem.