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| **Biology Teaching & Learning Framework (Block)**  |
| **Unit 1****1 week** | **Unit 2****3 weeks** | **Unit 3****3 weeks** | **Unit 4****3 weeks** | **Unit 5****3 weeks**  | **Unit 6** **2 weeks** | **EOG Review and Exam** **1 week**  |
| **Biology Overview** | **Cells** **SB1**  | **Genetics****SB2, SB3** | **Evolution** **SB5** | **Organisms****SB4** | **Ecology****SB4**  |  |
| **Science and Engineering Practice:****Planning and Conducting Investigations*** Plan and conduct an investigation in a safe and ethical manner including considerations of environmental, social, and personal impacts.

• Select appropriate tools to collect, record, analyze, and evaluate data. | **SB1. Obtain, evaluate, and communicate information to analyze the nature of relationships between structures and functions in living cells**Explain homeostasis maintenance by the interaction of cell structures and organelles (SB1a)Model the role of cellular reproduction in maintaining genetic continuity (SB1b)Argue how the structure of macromolecules is related to their interactions in cellular processes (SB1c)Investigate the role of cellular transport in maintaining homeostasis (SB1d)Explain the roles of photosynthesis and respiration in the cycling of matter and flow of energy within a cell (SB1e)  | **SB2. Obtain, evaluate, and communicate information to analyze how genetic information is expressed in cells**Explain how DNA and RNA lead to expression of info in the cell through replication, transcription, and translation (SB2a)Argue to support the claim that inheritable genetic variations may result from new genetic combinations through meiosis, non-lethal errors during replication, and heritable mutations caused by environmental factors (SB2b)Communicate information about the use and ethical considerations of biotechnology (SB2c)**SB3 Obtain, evaluate, and communicate information to analyze how biological traits are passed on to successive generations**Mendel’s laws and the role of meiosis in reproductive variability (SB3a)Predict and explain patterns of inheritance (SB3b)Argue the advantages and disadvantages of sexual and asexual reproduction (SB3c) | **SB6. Obtain, evaluate, and communicate information to assess the theory of evolution.** Explain how understandings of Earth’s history, emergence of new species, and genetics have influenced our understanding of biology (SB6a)Analyze and interpret data to explain patterns of diversity that result from speciation (SB6b)Argue the claim that all living organisms are related by way of common descent using evidence from comparative morphology, embryology, biochemistry, and genetics (SB6c)Model mathematically how genetic changes in natural selection and genetic drift have led to changes in populations (SB6d)Model the role of natural selection in biological resistance (SB6e) | **SB4. Obtain, evaluate, and communicate information to illustrate the organization of interacting systems within single-celled and multi-celled organisms.**Argue/explain patterns in structure and function among clades of organisms (archaea, bacteria, eukaryotes) (SB4a)Analyze and interpret data to develop models based on patterns of common ancestry and theory of evolution to determine relationships among major groups of organisms (SB4b)Argue to compare and contrast the characteristics of viruses and organisms (SB4c) | **SB5 Obtain, evaluate, and communicate information to assess the interdependence of all organisms on one another and their environment.** Investigate and explain factors affecting ecosystems’ biodiversity and populations (SB5a)Model the cycling of matter and flow of energy within ecosystems (photosynthesis, respiration, food webs, energy pyramids, nutrient cycles) (SB5b)Argue and predict the impact of environmental change on an ecosystem (SB5c)Design a solution to reduce human impact on the environment (SB5d)Explain and predict an organism’s ability to survive within changing environmental limits (SB5e) |  |
| These units were written to build upon concepts from prior units, so later units contain tasks that depend upon the concepts addressed in earlier units. |

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| **Biology Teaching & Learning Framework (Yearly)**  |
| **Unit 1****2 weeks** | **Unit 2****6 weeks** | **Unit 3****6 weeks** | **Unit 4****6 weeks** | **Unit 5****6 weeks**  | **Unit 6** **4 weeks** | **EOG Review and Exam** **1 week**  |
| **Biology Overview** | **Cells** **SB1**  | **Genetics****SB2**  | **Evolution** **SB5** | **Organisms****SB3** | **Ecology****SB4**  |  |
| **Science and Engineering Practice:****Planning and Conducting Investigations*** Plan and conduct an investigation in a safe and ethical manner including considerations of environmental, social, and personal impacts.

• Select appropriate tools to collect, record, analyze, and evaluate data. | **SB1. Obtain, evaluate, and communicate information to analyze the nature of relationships between structures and functions in living cells**Explain homeostasis maintenance by the interaction of cell structures and organelles (SB1a)Model the role of cellular reproduction in maintaining genetic continuity (SB1b)Argue how the structure of macromolecules is related to their interactions in cellular processes (SB1c)Investigate the role of cellular transport in maintaining homeostasis (SB1d)Explain the roles of photosynthesis and respiration in the cycling of matter and flow of energy within a cell (SB1e)  | **SB2. Obtain, evaluate, and communicate information to analyze how genetic information is expressed in cells**Explain how DNA and RNA lead to expression of info in the cell through replication, transcription, and translation (SB2a)Argue to support the claim that inheritable genetic variations may result from new genetic combinations through meiosis, non-lethal errors during replication, and heritable mutations caused by environmental factors (SB2b)Communicate information about the use and ethical considerations of biotechnology (SB2c)**SB3 Obtain, evaluate, and communicate information to analyze how biological traits are passed on to successive generations**Mendel’s laws and the role of meiosis in reproductive variability (SB3a)Predict and explain patterns of inheritance (SB3b)Argue the advantages and disadvantages of sexual and asexual reproduction (SB3c) | **SB6. Obtain, evaluate, and communicate information to assess the theory of evolution.** Explain how understandings of Earth’s history, emergence of new species, and genetics have influenced our understanding of biology (SB6a)Analyze and interpret data to explain patterns of diversity that result from speciation (SB6b)Argue the claim that all living organisms are related by way of common descent using evidence from comparative morphology, embryology, biochemistry, and genetics (SB6c)Model mathematically how genetic changes in natural selection and genetic drift have led to changes in populations (SB6d)Model the role of natural selection in biological resistance (SB6e) | **SB4. Obtain, evaluate, and communicate information to illustrate the organization of interacting systems within single-celled and multi-celled organisms.**Argue/explain patterns in structure and function among clades of organisms (archaea, bacteria, eukaryotes) (SB4a)Analyze and interpret data to develop models based on patterns of common ancestry and theory of evolution to determine relationships among major groups of organisms (SB4b)Argue to compare and contrast the characteristics of viruses and organisms (SB4c) | **SB5 Obtain, evaluate, and communicate information to assess the interdependence of all organisms on one another and their environment.** Investigate and explain factors affecting ecosystems’ biodiversity and populations (SB5a)Model the cycling of matter and flow of energy within ecosystems (photosynthesis, respiration, food webs, energy pyramids, nutrient cycles) (SB5b)Argue and predict the impact of environmental change on an ecosystem (SB5c)Design a solution to reduce human impact on the environment (SB5d)Explain and predict an organism’s ability to survive within changing environmental limits (SB5e) |  |
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