

Jasper City Schools

Pacing Guide 08.14.2018

7th Grade Life Science			
First Nine Weeks	Second Nine Weeks	Third Nine Weeks	Fourth Nine Weeks
<p><u>Scientific Methods, Living Things, Cells, DNA, Heredity,</u></p> <p>ALCOS</p> <ol style="list-style-type: none"> Engage in argument from evidence to support claims of the cell theory Gather and synthesize information to help explain how prokaryotic and eukaryotic cells differ in structure and function, including the methods of asexual and sexual reproduction Construct an explanation of the function of specific cell structures (nucleus, cell membrane, cell wall, ribosomes, mitochondrion, chloroplasts, and vacuoles) for maintaining a stable environment Construct and use models (monohybrid crosses using Punnett squares, diagrams, simulations) to explain that genetic variations between parent and offspring (different alleles, mutations) occur as a result of genetic differences in randomly inherited genes located on chromosomes and that additional variations may arise from alteration of genetic information. 	<p><u>Ecology</u></p> <p>ALCOS</p> <ol style="list-style-type: none"> Examine the cycling of matter between abiotic and biotic parts of ecosystems to explain the flow of energy and the conservation of matter. <ol style="list-style-type: none"> Obtain, evaluate, and communicate information about how food is broken down through chemical reactions to create new molecules that support growth and/or release energy as it moves an organism Generate a scientific explanation based on evidence for the role of photosynthesis and cellular respiration in the cycling of matter and flow of energy into and out of organisms. Analyze and interpret data to provide evidence regarding how resource availability impacts individual organisms as well as populations of organisms within an ecosystem. Use empirical evidence from 	<p><u>Unity and Diversity, Classification, Plants</u></p> <p>ALCOS</p> <ol style="list-style-type: none"> Use evidence and scientific reasoning to explain how characteristic animal behaviors (ex. building nests to protect young from cold, herding to protect young from predators, attracting mates for breeding by producing special sounds and displaying colorful plumage, transferring pollen or seeds, creating conditions for seed germination and growth) and specialized plant structures (ex. flower brightness, nectar, and odor attracting birds that transfer pollen; hard outer shells on seeds providing protection prior to germination) affect the probability of successful reproduction of both animals and 	<p><u>Animals and Human Body Systems</u></p> <p>ALCOS</p> <ol style="list-style-type: none"> Construct models and representations of organ systems (ex. circulatory, digestive, respiratory, muscular, skeletal, and nervous) to demonstrate how multiple interacting organs and systems work together to accomplish specific functions.

<p>13. Construct an explanation from evidence to describe how genetic mutations result in harmful, beneficial, or neutral effects to the structure and function of an organism.</p> <p>14. Gather and synthesize information regarding the impact of technologies (hand pollination, selective breeding, genetic engineering, genetic modification, gene therapy) on the inheritance and/or appearance of desired traits in organisms.</p>	<p>patterns and data to demonstrate how changes to physical or biological components of an ecosystem (ex. deforestation, succession, drought, fire, disease, human activities, invasive species can lead to shifts in populations.</p> <p>8. Construct an explanation to predict patterns of interactions on different ecosystems in terms of the relationships between and among organisms (ex. competition, predation, mutualism, commensalism, and parasitism).</p> <p>9. Engage in argument to defend the effectiveness of a design solution that maintains biodiversity and ecosystem services (ex. using scientific, economic, and social considerations regarding purifying water, recycling nutrients, preventing soil erosion).</p>	<p>plants.</p> <p>11. Analyze and interpret data to predict how environmental conditions (ex. weather, availability of nutrients, location) and genetic factors (ex. selective breeding of cattle or crops) influence the growth of organisms (ex. drought decreasing plant growth, adequate supply of nutrients for maintaining normal plant growth, identical plant seeds growing at different rates on different weather conditions, fish growing larger in large ponds than in small ponds).</p> <p>15. Analyze and interpret data for patterns of change in anatomical structures of organisms using the fossil record and the chronological order of fossil appearance in rock layers</p> <p>16. Construct an explanation based on evidence (cladograms, phylogenetic tree) for the anatomical similarities and differences among modern organisms and between modern and fossil organisms, including living fossils (alligator, horseshoe crab, nautilus, and coelacanth).</p> <p>17. Obtain and evaluate pictorial data to compare patterns in the</p>	
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<p>ACT/CCRS IOD 201- Select one piece of data from a single data presentation IOD 202- Identify basic features of a table, graph, or diagram (ex. units of measurements) IOD 203- Find basic information in text that describes a simple data presentation IOD 301 Select two or more pieces of data from a simple data presentation IOD 302- Understand basic scientific terminology IOD 403- Translate information into a table, graph, or diagram (Punnett square, pedigree, cladogram, dichotomous key) EMI 201-Find basic conceptual information in a model EMI 301-Understand the methods used in a model (Punnett square) EMI 302- Determine which models present certain basic information (Punnett squares, pedigree, cladogram, dichotomous key) EMI 401- Determine which simple hypothesis, prediction, or conclusion is, or is not, consistent with a data presentation. EMI 402 Identify key assumptions in a model EMI 403 Determine which models imply certain information EMI 404- Identify similarities and differences between model</p>	<p>ACT/CCRS IOD 201- Select one piece of data from a single data presentation IOD 202- Identify basic features of a table, graph, or diagram IOD 203- Find basic information in text that describes a simple data presentation IOD 301 Select two or more pieces of data from a simple data presentation IOD 302 Understand basic scientific terminology IOD 403 Translate information into a table, graph, or diagram SIN 201- Find basic information in text that describes a simple experiment SIN 301- Understand the methods used in a simple experiment SIN 302- Understand the tools and functions of tools used in a simple experiment SIN 401- Understand a simple experimental design SIN 403- Identify a control in an experiment EMI 201 Find basic information in a model EMI 301 Id implications in a model EMI 302 Determine which models present certain basic information EMI 401- Determine which simple hypothesis, prediction, or conclusion is, or is not, consistent with a data presentation. EMI 404- Identify similarities and differences between models</p>	<p>embryological development across multiple species to identify relationships not evident in the adult anatomy 18. Construct an explanation from evidence that natural selection acting over generations may lead to the predominance of certain traits that support successful survival and reproduction of a population and the suppression of other traits.</p> <p>ACT/CCRS IOD 302- Understand basic scientific terminology EMI 201-Find basic conceptual information in a model (ex. flower part) EMI 301-Identify implications in a model EMI 302- Determine which models present certain basic information (cladogram)</p>	<p>ACT/CCRS: IOD 302- Understand basic scientific terminology SIN 302- Understand the tools and functions of tools used in a simple experiment (ex. dissection of specimen) EMI 201-Find basic conceptual information in a model (ex. organ system parts) EMI 301-Identify implications in a model EMI 302- Determine which models present certain basic information EMI 404- Identify similarities and differences between models</p>
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Power Standards*

1. I will know that science is a way of learning about the natural world and uses practical criteria, sound argument, and skeptical review.
2. I will know that scientific inquiry uses multiple processes to investigate questions and propose explanations about the natural world.
3. I will demonstrate proper safety procedures, equipment use, measurement techniques, and mathematical analysis for use in field research and laboratory use.
4. I will know that all living things are composed of one or more cells that carry on the many functions needed to sustain life.
5. I will know that traits are determined by information contained in genes that are inherited through asexual or sexual reproduction.
6. I will explain how living things change over time.
7. I will explain how human interaction with organisms can have devastating effects such as extinction or disease.
8. I will know that natural systems can contain a variety of organisms that interact with and depend on one another.
9. I will explain what different systems in the human body do and how they work together to sustain life.