

| Standard Code | Standards |
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| MS-SCI-LS.E.01.00.0 | Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. |
| MS-SCI-LS.E.01.A.0 | Categorize the relationships between organisms (i.e., producer/consumer, and predator/prey) and provide examples of each. |
| MS-SCI-LS.E.01.B.0 | Use models to trace the flow of energy in food chains and food webs. |
| MS-SCI-LS.E.01.C.0 | Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. (e.g., symbiotic relations and predator prey relationships). |
| MS-SCI-LS.E.01.D.0 | Describe specific examples of how humans have changed the capacity of an environment to support specific life forms (e.g., people create wet lands and nesting boxes ó increase number and range of wood ducks, acid rain -damages amphibian eggs and reduces p |
| MS-SCI-LS.E.01.E.0 | Distinguish between inference and evidence in a newspaper or magazine article relating to the effect of humans on the environment. |
| MS-SCI-LS.E.01.F.0 | Infer the potential effects of humans on a specific food web. |
| MS-SCI-LS.E.01.G.0 | Evaluate and present arguments for and against allowing a specific species of plant or animal to become extinct and relate the argument to the flow energy in an ecosystem. |
| MS-SCI-LS.E.01.H.0 | Describe how each of us is called to be good stewards of God's earth and resources. |
| MS-SCI-LS.E.01.I.0 | Explain why no peaceful society can afford to neglect either the respect for life or the fact that there is integrity to creation. |
| MS-SCI-LS.E.01.J.0 | Explain how we are called by God to be mindful of the dangers, both moral and ecological, of overconsumption. |
| MS-SCI-LS.LO.01.00.0 | Describe the function of a cell and how groups of cells work together. |
| MS-SCI-LS.LO.01.A.0 | Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. |
| MS-SCI-LS.LO.01.B.0 | Describe the cellular theory. |
| MS-SCI-LS.LO.01.C.0 | Use appropriate instruments to observe, describe and compare various types of cells (e.g., plant, hair). |
| MS-SCI-LS.LO.01.D.0 | Observe and distinguish the cell wall, cell membrane, nucleus, chloroplast, and cytoplasm of cells. |
| MS-SCI-LS.LO.01.E.0 | Differentiate between plant/ animal cells and prokaryotic / eukaryotic cells (e.g., microorganisms vs plant cells). |
| MS-SCI-LS.LO.01.F.0 | Model the cell processes of diffusion and osmosis and relate this motion to the motion of particles. |
| MS-SCI-LS.LO.01.G.0 | Gather information to report on how the basic functions of organisms are carried out within cells (e.g., extract energy from food, remove waste). |
| MS-SCI-LS.LO.01.H.0 | Arrange the levels of organization from simple to complex (e.g., cell, tissue, organ, system, organism). |
| MS-SCI-LS.LO.01.I.0 | Match a particular structure to the appropriate level (e.g. heart to organ, tree to organism, muscle to tissue). |
| MS-SCI-LS.LO.02.00.0 | Describe the skeletal, muscular, and integumentary systems. |
| MS-SCI-LS.LO.02.A.0 | Explain four functions of bones (movement, organ protection, blood cell formation, mineral storage). |

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| MS-SCI-LS.LO.02.B.0 | Locate places of cartilage and ligaments on the human body. |
| MS-SCI-LS.LO.02.C.0 | Differentiate between gliding, hinge, and ball-and-socket joint. |
| MS-SCI-LS.LO.02.D.0 | Explain difference between osteoporosis, arthritis, sprains, dislocated joints and fractures. |
| MS-SCI-LS.LO.02.E.0 | Describe the three types of muscles (skeletal, smooth, cardiac) and their location in the body. |
| MS-SCI-LS.LO.02.F.0 | Explain how muscles and tendons move bones. |
| MS-SCI-LS.LO.02.G.0 | Explain difference between a strain and tendinitis. |
| MS-SCI-LS.LO.02.H.0 | List the four functions of skin (protection, feeling, regulates temperature, rids wastes via sweat). |
| MS-SCI-LS.LO.02.I.0 | Label the two skins layers and structures inside the skin. |
| MS-SCI-LS.LO.02.J.0 | Describe difference between skin cancer and acne. |
| MS-SCI-LS.LO.03.00.0 | Describe the circulatory/ cardiovascular system. |
| MS-SCI-LS.LO.03.A.0 | Label the four chambers of the heart and the flow of blood through the heart. |
| MS-SCI-LS.LO.03.B.0 | Differentiate between the three types of blood vessels (arteries, capillaries, veins). |
| MS-SCI-LS.LO.03.C.0 | Describe the two types of circulation (pulmonary and systemic). |
| MS-SCI-LS.LO.03.D.0 | Describe the function of the four main components of blood (plasma, red blood cells, platelets, white blood cells.) |
| MS-SCI-LS.LO.03.E.0 | List the four blood types and the one that is called the universal donor. |
| MS-SCI-LS.LO.03.F.0 | Explain how blood pressure is measured. |
| MS-SCI-LS.LO.03.G.0 | Explain differences between atherosclerosis, hypertension, stroke, heart attack and heart failure. |
| MS-SCI-LS.LO.04.00.0 | Describe the respiratory system. |
| MS-SCI-LS.LO.04.A.0 | Label the parts of the respiratory system (pharynx, larynx, trachea, bronchus, bronchiole, alveoli, diaphragm). |
| MS-SCI-LS.LO.04.B.0 | Demonstrate how the diaphragm works to cause breathing. |
| MS-SCI-LS.LO.04.C.0 | Explain the relationship between the respiratory and circulatory/cardiovascular system. |
| MS-SCI-LS.LO.04.D.0 | Explain differences between asthma, emphysema, and severe acute respiratory syndrome (SARS). |
| MS-SCI-LS.LO.05.00.0 | Describe the digestive system. |
| MS-SCI-LS.LO.05.A.0 | Label the parts of the digestive system (esophagus, stomach, liver, gallbladder, pancreas, small intestine, large intestine, rectum, and anus). |
| MS-SCI-LS.LO.05.B.0 | Describe the three ways that the stomach breaks down food (muscles, enzymes, acids). |
| MS-SCI-LS.LO.05.C.0 | Explain the purpose of the pancreas and liver. |
| MS-SCI-LS.LO.05.D.0 | Describe how the small intestine villi pass nutrients to the blood stream. |
| MS-SCI-LS.LO.05.E.0 | Explain the differences between diabetes, stomach ulcers, and liver cirrhosis. |
| MS-SCI-LS.LO.06.00.0 | Describe the urinary system. |
| MS-SCI-LS.LO.06.A.0 | Label the parts of the urinary system (kidneys, ureters, bladder, urethra). |
| MS-SCI-LS.LO.06.B.0 | Explain how the kidneys filter blood using nephrons. |
| MS-SCI-LS.LO.06.C.0 | Explain the differences between bacterial infections, kidney stones, and kidney disease. |

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| MS-SCI-LS.LO.07.00.0 | Describe the nervous system. |
| MS-SCI-LS.LO.07.A.0 | Differentiate between the central nervous system and the peripheral nervous system. |
| MS-SCI-LS.LO.07.B.0 | Label the parts of a neuron (cell body, dendrite, axon, axon terminal). |
| MS-SCI-LS.LO.07.C.0 | Describe how impulses are sent through the nervous system. |
| MS-SCI-LS.LO.07.D.0 | List and describe the function of the three main areas of the brain (cerebrum, cerebellum, and medulla). |
| MS-SCI-LS.LO.07.E.0 | Contrast the somatic nervous system with the autonomic nervous system. |
| MS-SCI-LS.LO.07.F.0 | Explain the difference between carpal tunnel syndrome and spinal cord injury. |
| MS-SCI-LS.LO.08.00.0 | Describe the reproductive system |
| MS-SCI-LS.LO.08.A.0 | Label the parts of the male and female reproductive systems (ovary, fallopian tube, uterus, cervix, vagina, vas deferens, epididymis, prostate gland, testis, scrotum, penis, and urethra.) |
| MS-SCI-LS.LO.08.B.0 | Describe the journey of a male's sperm from production to leaving the body. |
| MS-SCI-LS.LO.08.C.0 | Describe the journey of a female's egg from production to leaving the body during a menstrual cycle. |
| MS-SCI-LS.LO.08.D.0 | Describe the development of a human person from the womb from fertilized egg to birth. |
| MS-SCI-LS.LO.09.00.0 | Describe body defenses against disease. |
| MS-SCI-LS.LO.09.A.0 | Differentiate between noninfectious and infectious diseases. |
| MS-SCI-LS.LO.09.B.0 | Identify ways that pathogens can be passed around and how to reduce their spread. |
| MS-SCI-LS.LO.09.C.0 | Describe ways the human body protects its self from pathogens. |
| MS-SCI-LS.LO.09.D.0 | Explain how the human body's immune system fights disease. |
| MS-SCI-LS.LO.09.E.0 | Explain the difference between allergies, autoimmune disease, cancer, and AIDS. |
| MS-SCI-LS.LO.09.F.0 | Explain the effects of viruses, bacteria, and microorganisms on our body systems. |
| MS-SCI-LS.LO.10.00.0 | Identify adaptations including genetic factors of plants and animals that help them survive in their environments. |
| MS-SCI-LS.LO.10.A.0 | Predict why certain traits (e.g., structure of teeth, body structure, coloration) are more likely to offer an advantage for survival of an organism. |
| MS-SCI-LS.LO.10.B.0 | Cite examples of traits that provide an advantage for survival in one environment but not other environments. |
| MS-SCI-LS.LO.10.C.0 | Investigate organism growth under various environmental conditions (e.g., differences of light, water, food). |
| MS-SCI-LS.LO.11.00.0 | Explain the process of photosynthesis and cellular respiration and their roles in the cycling of matter and flow of energy into and out of organisms. |
| MS-SCI-LS.LO.11.A.0 | Compare photosynthesis (makes food) and cellular respiration (uses food to get energy). |
| MS-SCI-LS.LO.11.B.0 | Recognize the importance of photosynthesis in using light energy as part of the chemical process that builds plant materials. |
| MS-SCI-LS.LO.11.C.0 | Explain how respiration in animals is the process of converting food energy into mechanical and heat energy. |
| MS-SCI-LS.LO.11.D.0 | Trace the path of energy from the sun to mechanical energy in an organism. |

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| MS-SCI-LS.LO.11.E.0 | Describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism (e.g., cellular respiration and photosynthesis). |
| MS-SCI-LS.LO.11.F.0 | Recognize that life begins at conception, and respect life at all stages. |
| MS-SCI-LS.LO.11.G.0 | Recognize that the nature of all God's processes gives purpose to all molecules and organisms, just as we are fulfilled when we carry out God's purpose in our lives. |
| MS-SCI-LS.LO.11.H.0 | View the body as a temple and dwelling place of the Holy Spirit. |
| MS-SCI-LS.LO.11.I.0 | Justify the dignity of the human person based on our creation in the image and likeness of God that results in our distinction from animals. |
| MS-SCI-LS.LO.12.00.0 | Describe the principles of genetics using Mendel's work with pea plants as a model. |
| MS-SCI-LS.LO.12.A.0 | Describe the discovery of genetic principles by Gregor Mendel by his crossing of pea plants. |
| MS-SCI-LS.LO.12.B.0 | Predict effects of dominant and recessive alleles in a genotype. |
| MS-SCI-LS.LO.12.C.0 | Predict and identify different patterns of genetic inheritance (e.g., sex linked traits, codominance, pedigree charts). |
| MS-SCI-LS.LO.12.D.0 | Research genetic disorders. |
| MS-SCI-LS.LO.12.E.0 | Predict genotype and phenotype of offspring using a Punnett Square. |
| MS-SCI-LS.LO.12.F.0 | Compare and contrast mitosis and meiosis. |
| MS-SCI-LS.LO.12.G.0 | Label and describe the function of the parts of the flower (ovary, ovule, style, stigma, pistil, anther, filament, stamen) |
| MS-SCI-LS.LO.12.H.0 | Explain how plants become pollinated and the difference between cross-pollination and self pollination. |
| MS-SCI-LS.LO.12.I.0 | Describe the process of plant egg fertilization, growth of ovary into a fruit, seed dispersal methods of plants, dormancy during winter, and germination of seed. |
| MS-SCI-LS.LO.12.J.0 | Investigate observable hereditary traits of God's children. |
| MS-SCI-LS.LO.12.K.0 | Defend why everything that God created is good and unique. |
| MS-SCI-LS.LO.12.L.0 | Evaluate how adversities that occur because of nature help to strengthen our dependence on and relationship with Jesus. |
| MS-SCI-LS.LO.13.00.0 | Identify anatomical patterns in current and past organisms |
| MS-SCI-LS.LO.13.A.0 | Using a provided classification scheme, classify things (e.g., shells, leaves, rocks, bones, fossils, weather, clouds, stars, planets). |
| MS-SCI-LS.LO.13.B.0 | Develop a classification system based on observed structural characteristics. |
| MS-SCI-LS.LO.13.C.0 | Generalize rules for classification such as the levels of classification (Kingdom, phylum, class, order, family, genus, species). |
| MS-SCI-LS.LO.13.D.0 | Arrange organisms according to kingdom (i.e., Plant, animal, monera, fungi, protist). |
| MS-SCI-LS.LO.13.E.0 | Use a classification key or field guide to identify organisms. |
| MS-SCI-LS.LO.13.F.0 | Understand that the human soul is specially created and conferred into the human by God. It did not evolve, and it is not inherited from our parents as our bodies are. |

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| MS-SCI-LS.LO.13.G.0 | Emphasize that even with such beautiful diversity, humans are all created in God's image and likeness. |
| MS-SCI-LS.LO.13.H.0 | Acknowledge God's supremacy in the creation of matter and design. He is the first principle of all that exists. |
| MS-SCI-LS.LO.13.I.0 | Understand what the church believes in regards to cell research (e.g., cloning, stem cell research etc.) |
| MS-SCI-LS.LO.13.J.0 | Recognize that the human spiritual soul is not the product of evolution but is created directly by God and conferred into the human body at the moment of conception. |
| MS-SCI-LS.LO.14.00.0 | Use appropriate laboratory apparatuses, technology, and techniques safely and accurately when conducting a scientific investigation. |
| MS-SCI-LS.LO.14.A.0 | Use scientific instruments to record measurement data in appropriate metric units that reflect the precision and accuracy of each particular instrument. |
| MS-SCI-LS.LO.14.B.0 | Conduct a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations. |
| MS-SCI-LS.LO.14.C.0 | Organize and interpret the data from a controlled scientific investigation by using (including calculations in scientific notation, formulas, and dimensional analysis), tables, models, diagrams, and/or technology. |
| MS-SCI-LS.LO.14.D.0 | Evaluate the results of a controlled scientific investigation in terms of whether they refute or verify the hypothesis. |
| MS-SCI-LS.LO.14.E.0 | Differentiate between qualitative and quantitative data in experimental design. |
| MS-SCI-LS.LO.14.F.0 | Use appropriate safety procedures when conducting investigations. |