

Jackson Area Catholic Schools

**Science Academic Standards
for
Seventh Grade**

Scientific Inquiry

- SI.07.01** The student will generate scientific questions based on observations, investigations, and research.
- SI.07.02** The student will design and conduct scientific investigations.
- SI.07.03** The student will use tools and equipment appropriate to scientific investigations.
- SI.07.04** The student will use metric measurement devices in an investigation.
- SI.07.05** The student will construct charts and graphs from data and observations.
- SI.07.06** The student will identify patterns in data.
- SI.07.07** The student will analyze information from data tables and graphs to answer scientific questions.
- SI.07.08** The student will evaluate data, claims, and personal knowledge through collaborative science discourse.
- SI.07.09** The student will communicate and defend findings of observations and investigations.
- SI.07.10** The student will draw conclusions from sets of data from multiple trials of a scientific investigation.
- SI.07.11** The student will use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.
- SI.07.12** The student will describe limitations in personal and scientific knowledge.
- SI.07.13** The student will identify the need for evidence in making scientific decisions.

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Scientific Inquiry (cont.)

- SI.07.14** The student will evaluate scientific explanations based on current evidence and scientific principles.
- SI.07.15** The student will demonstrate scientific concepts through various illustrations, performances, models, exhibits and activities.
- SI.07.16** The student will design solutions to problems through the use of technology.
- SI.07.17** The student will describe the effect humans and other organisms have on the balance of the natural world.
- SI.07.18** The student will describe what science and technology can and cannot reasonably contribute to society.
- SI.07.19** The student will describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.

Life Science

- LS.07.01** The student will identify the living and nonliving components of an ecosystem.
- LS.07.02** The student will identify the factors in an ecosystem that influence changes in population size.
- LS.07.03** The student will distinguish between prokaryotic and eukaryotic.
- LS.07.04** The student will describe the differences between unicellular and multicellular organisms.
- LS.07.05** The student will identify the levels of cell specialization.
- LS.07.06** The student will describe and identify the structure and function of cell organelles.
- LS.07.07** The student will describe the cell processes of respiration, diffusion, osmosis and active transport.

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Life Science (cont.)

- LS.07.08** The student will describe growth and development in terms of increase of cell number and/or cell size.
- LS.07.09** The student will define mitosis and explain chromosome behavior during mitosis.
- LS.07.10** The student will compare and contrast the advantages and disadvantages of sexual versus asexual reproduction.
- LS.07.11** The student will name the seven levels of classification.
- LS.07.12** The student will name the six Kingdoms of living organisms and list characteristics of each.
- LS.07.13** The student will define binomial nomenclature.
- LS.07.14** The student will classify organisms based on similar characteristics in structure.
- LS.07.15** The student will identify seed parts and the conditions necessary for
- LS.07.16** The student will identify the structure and function of plant parts (roots, stems, leaves, flowers, cones).
- LS.07.17** The student will describe the life cycles of plants.
- LS.07.18** The student will recognize the importance of photosynthesis, and identify the chemical reaction in general terms.
- LS.07.19** The student will describe evidence that plants make, use, and store food.
- LS.07.20** The student will describe the structure and life cycle of a virus, and give examples of viral diseases/benefits.
- LS.07.21** The student will give examples of bacterial diseases/benefits.
- LS.07.22** The student will recognize the importance of adaptation to survival.
- LS.07.23** The student will identify the interactions among the populations of living things in terms of energy flow.
- LS.07.25** The student will list examples of behaviors of a healthy life style.

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Life Science (cont.)

- LS.07.26** The student will recognize the importance of proper hygiene and give examples of behaviors that support it.
- LS.07.27** The student will identify the structure and function of the muscular, skeletal, digestive, circulatory, skin/excretory, respiratory and nervous systems, and recognize ways to maintain these systems.
- LS.07.28** The student will name the six nutrient groups, and identify their functions within the body.

Earth Science

- ES.07.01** The student will identify the role of fossils in understanding how the Earth has changed.
- ES.07.02** The student will differentiate between the natural and human manipulation of the Earth's surface.
- ES.07.03** The student will explain how human activities change the surface of the Earth and affect the survival of organisms. (E.ES.07.41)
- ES.07.04** The student will describe the origins of pollution in the atmosphere, geosphere, and hydrosphere, and how pollution impacts habitats, changes climate, and threatens or endangers species. (E.ES.07.42)

Physical Science

- PS.07.01** The student will describe various forms and sources of energy.
- PS.07.02** The student will explain energy conversions.
- PS.07.03** The student will identify atomic structure and differentiate between elements, compounds, and mixtures.
- PS.07.04** The student will describe chemical and physical changes of matter.
- PS.07.05** The student will describe and demonstrate the force and motion of machines.
- PS.07.06** The student will recognize and measure properties of matter.

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Physical Science (cont.)

PS.07.07 The student will identify that nuclear reactions take place in the sun producing heat and light.

PS.07.08 The student will explain how only a tiny fraction of light energy from the sun is transformed to heat energy on Earth.