Springfield Public Schools
K-5 SCIENCE

COURSE DESCRIPTION

Science in fifth grade will be taught four to five times a week for 40 – 50 minutes within a regular classroom. Students will be introduced to objectives within the areas of life science and the interaction of living systems with the physical world. The program emphasizes a scientific inquiry hands-on approach.

FIFTH GRADE
MAJOR INSTRUCTIONAL GOALS

The intent of the Springfield R-12 Science Program is:

1. **The student will design and conduct hands-on scientific investigations using appropriate tools and techniques and data collection to construct a reasonable explanation to observable phenomenon**.
   a. Identify questions that can be answered through scientific investigations. (SC 7; **1.1**; **3.1**)
   b. Understand that changes in variables produce different outcomes in scientific investigations. (SC 7; **1.6**; **2.1**; **3.5**)
   c. Use the metric system in measurements and calculations of scientific data. (SC 7; **1.6;** 1.8)

2. **The student will understand that women and men of various backgrounds work in teams and alone, but all communicate extensively with others.**
   a. Solve a problem by designing a plan or product that provides an appropriate solution. (SC 8; **3.5**; 3.7; **4.1**)
   b. Determine the impact science has on various careers and occupations. (SC 8; 1.10; 2.6; 4.8)
   c. Research the history of space exploration and report on future space exploration initiatives. (SC 8; **1.3**; 1.4; **2.1**; **4.1**)
   d. Demonstrate an understanding that safety is an important part of science investigations and that following safety rules prevent injuries in school and the workplace. (SC 8; **3.5;** 4.7)
   e. Research and report on well-known scientists or scientific events. (SC 8; 1.2; **2.1**; 2.2)

3. **The student will show specific examples of the effects that science and technology has on human populations throughout the world.**
   a. Describe and define the inventions process and identify factors that promote inventions. (SC 8; 2.3; **3.6**)
   b. Identify and analyze ways in which advances in science and technology have affected society. (SC 8; 2.4; **3.2**; **3.6**)

c. Research and explain how information received from telescopes and space probes has either confirmed or modified scientific theories concerning physical properties and conditions of the solar system. (SC 8; **1.7**; **4.1**; 2.7)

4. **The student will demonstrate an understanding of living organisms and their relationship to natural resources and the environment.**
   a. Identify and describe physical and behavioral adaptations of organisms that affect their chances for survival. (SC 4; **1.5**; 1.8; 2.4;).
   b. Describe the basic survival needs of plants/animals, and how they obtain energy and nutrients from their environment. (SC 3; **1.1**; 1.2)
   c. Identify common organisms and classify within their kingdom. (SC 3 , 1.1; 1.8; 3.7)
   d. Identify common plants and animals and classify them according to their similarities and differences. (SC 3; **1.6**)
   e. Describe and compare the internal and external structures of different plant and animal species, which perform a common function, and explain how the structure enhances the organism's ability to survive. (SC 3; **1.3**; 1.4; 2.3; **3.5**)
   f. Explain the process of photosynthesis and conduct simple experiments with green plants to determine its requirements and products. (SC 3; 1.2; **1.3**; 1.8; 4.6)
   g. Collect and organize data, information, and ideas to explain the stages through which a fertilized egg or seed changes into its adult form. (SC 3; **1.1**; 1.8; 4.6)

5. **Explore the relationship between abiotic factors and population rates of living organisms in ecosystems**.
   a. Examine fossils and discuss how they give evidence of the nature of the environment and the plants and animals that lived long ago. (SC 4; 1.2; **1.6**)
   b. Conduct research and evaluate current theories regarding the existence of life forms on other planets. (SC 4; **1.3**; 1.4; 2.3; **4.1**)
   c. Use information to show how changes in populations occur as a result of gradual or catastrophic changes in environmental conditions. (SC 3; 1.4; **2.1**; 3.1; **3.3**)
   d. Explain why the number of organisms an ecosystem can support is dependent on abiotic factors (e.g. quantity of light, water, range of temperature and soil composition) and the availability of resources. (SC 4; SC 8; **2.1**; 2.4; 3.6)

6. **The student will explore the interdependence of living systems and basic properties of matter and energy**.
   a. Use information to explain that living organisms obtain and use energy and materials from the environment and depend on one another for energy and raw materials. (SC 4; **1.2**; 1.4; **1.6**; **3.5**)
   b. Interpret and create a food chain or web to show the energy flow from one organism to another, and predict adjustments that will occur naturally within the system. (SC 4; 1.8; **3.5**)

*Processing skills in **bold print** are assessed by the Missouri Assessment Program at this grade level.