

Springfield Public Schools
K-5 SCIENCE

COURSE DESCRIPTION

In first grade, science is taught on an average of three to four times weekly for 30 – 45 minutes within a regular self-contained classroom. The program emphasizes a hands-on approach to learning using the scientific process. Curriculum integration with communication arts and mathematics instructional goals is highly encouraged.

FIRST GRADE
MAJOR INSTRUCTIONAL GOALS

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

- 1. The student will communicate scientific inquiry through questioning, observations and participation in simple investigations.**
 - a. Employ simple tools to measure objects (length, mass, capacity, and temperature). (SC 7; 1.4; **1.8**)
 - b. Make observations using the senses and magnification. (SC 7; **1.3; 1.5; 1.8; 2.1; 2.7**)
 - c. Plan and conduct a simple investigation including predictions on the outcome. (SC 7; 1.1; 1.2; **1.8**)
 - d. Use words, pictures, models, and numbers to communicate observations, investigations and explanations. (SC 7; 1.4; **1.5; 1.8**)

- 2. The student will demonstrate an understanding of how science enables people to gain knowledge, create solutions, and invent things.**
 - a. Develop and use strategies to solve simple problems encountered in the school community. (SC 8; 3.1; 3.2; 3.3)
 - b. Investigate the need for team work and sharing of findings. (SC 8; **2.3; 2.4; 4.6**)

- 3. The student will understand that women and men of all ages, backgrounds and groups engage in a variety of scientific work.**
 - a. Investigate major scientific contributions made by men and women throughout history. (SC 8; **1.2; 1.4**)
 - b. Apply the need for observation, comparison of data, and reproducing experiments. (SC 7; 1.2; 1.7; **1.3; 3.5**)

- 4. The student will observe the effects of science and technology on our society.**
 - a. Identify everyday uses of technology and uses of technology in the workplace. (SC 8; **1.3; 2.7**)
 - b. Design and report on an invention that addresses an everyday problem or task. (SC 8; 3.1; 3.2; 3.3; 3.6)

- 5. The student will explore needs and characteristics of living organisms and their interaction with natural and man-made factors.**
 - a. Examine characteristics of plants and describe their basic needs. (SC 3; **1.6**)
 - b. Examine characteristics and describe their basic needs of animals. (SC 3; **1.6**)
 - c. Identify characteristics common to individuals of a species. (SC 3; **1.3; 1.6; 1.8; 2.4**)
 - d. Identify ways living organisms depend on other living organisms and the environment to meet their basic needs. (SC 4; 3.5; 3.6; 4.6)

- e. Demonstrate an awareness that humans are similar to other living organisms. (SC 3; **1.6**; 3.5)
6. **The student will explore the basic elements of the universe and observe objects in the sky.**
- a. Describe the position of an object relative to another object including the sun, earth, and the moon. (SC 6; 1.8; 1.10)
 - b. Identify major sources of water (e.g. oceans, glaciers, rivers, groundwater, and atmosphere). (SC 5; 1.1; **1.2**; **1.3**; 1.4)
 - c. Organize and share information about the earth, moon, sun, and stars to determine patterns, changes, and relationships. (SC 6; **1.2**; **1.3**; 1.8; **2.1**;3.5)
 - d. Describe measurable characteristics of weather such as: temperature, wind direction and speed, and precipitation. (SC 5; 1.1; **1.2**; **1.3**; **2.4**)
7. **The student will investigate the properties of force, matter and motion.**
- a. Demonstrate how forces produce many types of motion (stopping, starting, falling, straight, zigzag, circular, vibration). (SC 2;**1.3**; **2.4**)
 - b. Demonstrate that objects are attached to the Earth by gravitational pull. (SC 2; **2.1**; **2.4**)
 - c. Describe how the motion of objects can be changed by pushing and pulling. (SC 2; 1.1; **1.6**; **2.4**)
 - d. Demonstrate that materials exist in different states and some materials, such as water, can be changed from one state to another by way of heating and cooling. (SC 1; **1.2**; **1.3**; 1.4; **1.6**; **1.8**; 4.1)
 - e. Describe heat as a form of energy; how it can affect common objects and how it is involved in everyday life. (SC 1; **1.2**; **1.3**; **1.6**; **2.1**; 4.1)
 - f. Demonstrate that light travels in a straight line until it strikes an object. (SC 1; **1.2**; **1.3**; **2.1**)

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