

Fayette R-III

CMS- Curriculum Guide for 6th Grade Science

Fayette R-III Mission: To educate all students to be ethical, successful citizens.

The 6th grade Science Learning Goals are based on the Missouri Learning Standards. The Missouri Learning Standards define the knowledge and skills students need to succeed in college, other postsecondary training and careers. This document is designed to make clear what each child should know and be able to do by the end of 6th grade science.

Course Description: Sixth grade science consists of 4 basic units of study: **Natural Resources:** Students will use evidence to determine how the earth's population affects the rate of change in natural resources and the impact of human activity on the environment. **Cell Structure:** Students will study the structure of cells, unicellular organisms and how the cell carries out the function of life. **Ecosystems:** Students will explore how organisms are interdependent with one another and with their environment. They will develop models to describe the cycling of matter and flow of energy among parts of the ecosystem. Students will evaluate benefits and limitation of different solutions for maintaining ecosystems. **Weather:** Students will find and analyze data to show how the flow of air causes changes in weather. Students will analyze and interpret data on natural hazards to forecast future catastrophic events.

Students will be given opportunities to use scientific measurement and experimental design skills to answer testable questions. Technology is used as a tool throughout the units to support learning and to give evidence of learning. Students will develop skills in scientific literacy, by asking questions, reading relevant research, testing ideas through prediction and experimentation, observing and analyzing data, synthesizing current results with the work of past scientists and communicating findings and further refining ideas. They will be expected to conduct investigations that involve systematic observations, carefully collected and relevant data, and develop logical conclusions.

Course Rationale: The Science Department of the Fayette School District believes that science is a diverse subject that encompasses many fields of investigation and interests. The primary goals of Fayette science courses are to equip students with an understanding of scientific concepts and principles, to develop students' critical thinking and problem solving skills in a variety of contexts, and to foster students' clear communication of their knowledge with others. We recognize that it is important to teach students methods of using current technology and outside resources to research information and help them make informed decisions for the purpose of better participation in the world around them. To accomplish these goals, students will participate in a variety of instructional activities and will develop information gathering, reading, writing, comprehension, and problem-solving skills both as individuals and as group members.

6 th Grade Science Student Learning Goals	Standard Alignment
1. Students will be able to evaluate the principles of scientific inquiry and utilize scientific measurement and design to conduct experiments.	6-8 ETS.1, 6-8 ETS.3
2. Students will explain and give examples of competition, predation and symbiotic relationships between organisms.	LS2.A.2

3. Students will investigate and explain the effects of resource availability on populations of organisms in an ecosystem.	LS2.A.1, LS2.C.1
4. Students will develop models to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	LS2.B.1
5. Students will develop models to describe the cycling of water through Earth's systems.	ESS2.C.1
6. Students will evaluate benefits and limitation of differing design solutions for maintaining an ecosystem.	LS2.C.2
7. Students will identify relationships between human activity and their environmental impact and design solutions to minimize human impact on the environment.	ESS3.C.1, ESS3.C.2, ESS3.D.1
8. Students will construct scientific explanations for how geoscience processes and human activity are responsible for the uneven distributions of Earth's mineral, energy, and groundwater resources.	ESS3.A.1
9. Students will use a model to describe the function of a cell and its organelles and explain that cells are the building blocks of all organisms.	LS1.A.1, LS1.A.2
10. Students will research, collect and analyze data to explain how air mass movement results in changes to weather conditions and heating and rotation of the Earth determines regional climates.	ESS2.C.2, ESS2.C.3
11. Students will use data to make predictions about future catastrophic events caused by natural hazards and severe weather and determine how technology can help to mitigate their effects.	ESS3.B.1

Resources:

Textbook –Prentice Hall- Science Explorer, Nitty Gritty Science Interactive Notebook

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