

# Mississippi Department of Education



## Title 7: Education K-12

Part 15: Student Performance Level Descriptors MS Science Curriculum  
Grade 5

**Fifth Grade Science**  
Performance Level Descriptors

Performance Level	Descriptors for Inquiry Content Strand <b>Competency 1</b>
Advanced	<p>1a. Design a fair scientific investigation including analyzing the data, forming conclusions, manipulating variables and using experimental controls.</p> <p>1d. Justify a conclusion based upon data</p> <p>1g. Justify that data are significant</p>
Proficient	<p>1a. Form a hypothesis and predict outcomes, based upon a fair investigation that includes manipulating variables and using experimental controls.</p> <p>1b. Distinguish between observations and inferences.</p> <p>1c. Use precise measurement (e.g. “to the nearest millimeter”) in conjunction with simple tools and technology to perform tests and collect data.</p> <p>1d. Organize and interpret data tables and graphs to construct explanations and draw conclusions.</p> <p>1e. Use drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.</p> <p>1f. Make and compare different proposals when designing a solution or product.</p> <p>1g. Evaluate whether data results are significant or insignificant.</p> <p>1h. Infer and describe alternate explanations and predictions.</p>
Basic	<p>1a. Identify the components of a fair investigation (hypothesis, prediction or outcome, manipulating variables, or experimental control).</p> <p>1c. Identify a simple tool and its associated unit of measurement used to collect data.</p> <p>1d. Recognize data patterns</p> <p>1f. Identify an appropriate design for the solution for a problem</p>

Performance Level	Descriptors for Physical Science Content Strand <b>Competency 2</b>
Advanced	2a. Predict how an object will act and interact based on its properties. 2c. Predict the motion of an object based on position, direction of motion, and speed. 2g. Evaluate a marketable application of conductors and/or insulators.
Proficient	2a. Determine how the properties of an object affect how it acts and interacts. 2b. Differentiate between elements, compounds, and mixtures and between chemical and physical changes. 2c. Investigate the motion of an object in terms of its position, direction of motion, and speed. 2d. Categorize examples of potential energy as gravitational, elastic, chemical. 2e. Differentiate between the properties of light as reflection, refraction, and absorption. 2f. Describe physical properties of matter including mixtures and solutions. 2g. Categorize materials as conductors or insulators and discuss their real life applications.
Basic	2b. Identify elements, compounds, mixtures, chemical changes or physical changes. 2e. Recognize the effect of prisms, lenses, mirrors, and eyeglasses on the characteristics of light. 2f. Define mass, density, boiling point, freezing point and other physical properties of matter.

Performance Level	Descriptors for Life Science Content Strand <b>Competency 3</b>
Advanced	3a. Predict how structural or behavioral adaptations of an organism will allow that organisms to continue living in a changing environment. 3e. Predict how possible changes in the food web or environment will affect the flow of energy.
Proficient	3a. Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes. 3b. Research and classify the organization of living things. 3c. Research and cite evidence of the work of scientists as it contributed to the discovery and prevention of disease. 3d. Distinguish between asexual and sexual reproduction. 3e. Give examples of how consumers and producers are related in food chains and food webs.
Basic	3a. Identify the adaptation that allows an organism to live in their particular environment. 3b. Identify the components (e.g., cells, organs, organ systems) within an organized, living system. 3d. Identify reproduction as asexual or sexual. 3e. Identify the levels of organization in a food chain or food web (e.g., producers, consumers, herbivores, carnivores, omnivores)

Performance Level	Descriptors for Earth and Space Science Content Strand <b>Competency 4</b>
Advanced	<p>4b. Explain how constructive processes combine with destructive processes to create certain land features</p> <p>4c. Predict weather based on the season and collected data.</p> <p>4d. Critique ways to conserve natural resources.</p> <p>4e. Compare the movement patterns of the moon around the Earth to the movement pattern of the Earth around the sun over a specific time period.</p>
Proficient	<p>4a. Categorize Earth's materials.</p> <p>4b. Explain how surface features caused by constructive processes differ from destructive processes.</p> <p>4c. Summarize how weather changes.</p> <p>4d. Describe changes caused by humans on the environment and natural resources and cite evidence from research of ways to conserve natural resources in the United States, including Mississippi.</p> <p>4e. Predict the movement patterns of the sun, moon, and Earth over a specified time period.</p> <p>4f. Compare and contrast the physical characteristics of the planets.</p> <p>4g. Conclude that the supply of many Earth resources is limited and critique a plan to extend the use of Earth's resources.</p>
Basic	<p>4a. Identify Earth's materials.</p> <p>4b. Identify surface features formed from constructive or destructive processes.</p> <p>4c. Identify tools used for collecting weather data</p> <p>4e. Identify the location of the sun, moon, or Earth at a specific time period.</p> <p>4f. Identify physical characteristics (e.g. mass, surface gravity, moons) of a planet</p>