

SCIENCE SKILLS AND REASONING

- one credit -

This course is **not** a required prerequisite for Biology I; however, if selected as a science elective, *Science Skills and Reasoning* should not be taken after successful completion of Biology I. This course will provide students with an overview of basic Biology with an emphasis on organizational skills, critical thinking, reasoning skills, and methods of science. Students will be introduced to the laboratory and scientific literature as investigative tools of science with an emphasis on critical analysis and concept comprehension. Students will learn to effectively interpret and communicate results of experiments and research in a variety of formats including written and oral presentations, graphs, charts, diagrams, multimedia presentations, etc. Concepts covered in this course include scientific problem solving, research, experimental design, laboratory safety, measurement, graphing, characteristics of life, cell structure and function, energy transfer in biological systems, genetics, and diversity of life.

The competencies are printed in bold face type and are required to be taught. Content strands include **Life Science**, **Physical Science** and **Earth and Space Science** competencies. Process Strands, which should be incorporated into all content strands are: **Unifying Concepts and Processes, Science as Inquiry, Science and Technology, Science in Personal and Social Perspectives, and the History and Nature of Science**. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings. The competencies may relate to one, many or all the science curriculum strands and may be combined and taught with other competencies throughout the school year. Competencies are not listed in order of importance, rather the sequence of competencies relates to the broader K-12 framework. Competencies provide a general guideline of ongoing instruction, not isolated units, activities or skills.

The suggested teaching objectives are optional. Objectives indicate concepts that enable the fulfillment of competencies, describe competencies in further detail, or show the progression of concepts throughout the grades. School districts may adopt or modify the objectives and are encouraged to write their own objectives to meet the needs of students in their school district. Through actively investigating and discussing scientific ideas using a variety of tools, students will become confident scientific thinkers.

The framework introduction, materials and equipment lists, technology and literature connections, and a glossary and reference section that are also a part of this document are available online at <http://www.mde.k12.ms.us/acad/id/science>.