

# Course Syllabus

## Science, Grade K

Grade K Science, Final  
Guardian Angels School

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The ITBS Form A for science measures the skills and achievement of students.

The MEAP assesses student progress in Science.

The Science performance standards are built upon the National Research Council's "National Science Education Standards" (1996) and the American Association for the Advancement of Science's Project 2061 "Benchmarks for Science Literacy" (1993).

Science is a way of making sense of the natural world. Scientists seek to describe its complexity, to explain its systems and events, and to find the patterns that allow for predictions. Science is the basis for the design of technologies that solve real world problems.

Not all students will become scientists or engineers. But science and technology occupy ever-expanding places in our everyday lives. As citizens, we are asked to make decisions about social issues that involve science and technology. As workers, we have occupations that increasingly involve science and technology. In the 21st century, adults will need to be comfortable and competent in a complex, scientific and technological world. Schools have the responsibility of preparing students for the future. Schools must prepare all students -- regardless of their future aspirations -- to be scientifically literate.

Therefore, all graduates of our schools should be:

\*knowledgable about the important concepts and theories of the three major branches of scientific study: earth, life, and physical sciences;

\*able to think scientifically and use scientific knowledge to make decisions about real world problems;

\*able to construct new knowledge for themselves through research, reading, and discussion;

\*familiar with the natural world, and respectful of its unity, diversity, and fragility;

\*able to make informed judgments on statements and

debates claiming to have a scientific basis; and,

\*able to reflect in an informed way on the role of science in human affairs.

To make this happen, education needs to:

1. emphasize understanding, not content coverage;
2. promote learning that is useful and relevant;
3. emphasize scientific literacy for ALL students; and,
4. promote interdisciplinary learning.

The "Michigan Content Standards and Benchmarks" describe three broad categories of activities that are common in scientifically literate individuals: using scientific knowledge; constructing new scientific knowledge, and reflecting o knowledge. The content strands are directly related to these types of activities.

The Michigan Science Curriculum Framework provides standards and benchmarks for students in grades K-5.

### Earth and Space Science

The Earth and Space Science unit addresses the composition, structure, exploration, and history of the earth and space. Topics include plate tectonics, the atmosphere, geological cycles and processes, weather, climate, the solar system, and the universe.

- The learner will be able to understand the earth's composition.
- The learner will be able to comprehend the internal and/or external structure of the Earth.
- The learner will be able to understand the characteristics of the universe.

### Life Science

The Life Science unit addresses the characteristics and cycles of and relationships between living things and their environments. Topics include cellular organization, classification, ecosystems, genetics, and human health issues.

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- The learner will be able to comprehend the life cycles of living things.
- The learner will be able to understand human health issues.
- The learner will be able to show comprehension of the structure of organisms.

### Physical Science

The Physical Science unit includes concepts related to matter, forces, motion, and energy, as well as their interactions. Topics include chemical and physical changes, electricity, magnetism, heat, light, sound, machines, work and power.

- The learner will be able to understand the composition of matter.
- The learner will be able to comprehend the physical and chemical properties of matter.
- The learner will be able to understand forces and motion.
- The learner will be able to have a comprehension of mechanics.

### Research and Inquiry

The Research and Inquiry unit focuses on the knowledge, processes, and real world issues associated with science and technology. Topics include experimentation, data analysis, science related careers, and technological advances.

- The learner will be able to recognize the safe method of doing things in any science activity.
- The learner will be able to understand the skills required to do scientific inquiry.
- The learner will be able to understand methods of scientific inquiry.
- The learner will be able to comprehend that analysis and interpretation are components of scientific inquiry.