



5th Grade Science: AIMS, Inquiry, and the Ohio Academic Standards for Math

Instructional Goals

5th grade science class activities come from AIMS, ODE, and other Inquiry Science resources. Instructional goals come from:

Ohio Academic Standards for 5th Grade Science

Ohio's state standards include science facts and the knowledge required for scientific investigations. My goal is for students to apply science facts and recognize relationships. They need to be able to design investigations, draw conclusions, and apply knowledge to new situations. Students must be able to express these science skills in writing, and read informational science text as well.

Assessment

Assessments and grades will come from a variety of sources, such as labs, quizzes, tests, projects, homework, and informal assessments such as participation and teacher-observed performance.

Science is a tested area on the 5th Grade Ohio Achievement Test. Science instruction from 3rd and 4th grade will also be included on this 5th grade test, so students will be getting reviews on those topics as well. Because it is a tested area, science grades will be calculated using a formula that keeps test performance as a top priority. While it is important to monitor the progress of students as they work on *all* of their goals, it is especially critical to stress their *mastery* of the program goals and Ohio's Academic Standards. To accomplish this, I will be applying the following weights to your child's math grades:

- **Concept, Unit, and Achievement Practice Tests: Weight = 50%** of the grading period's grade will be tests given on the Ohio 5th Grade Indicators and Program Goals in the Everyday Math program.
- **Everything Else: Weight = 50%** of the grading period's grade will be from Labs, Daily Work, Informal Assessments, Homework, Projects, Quizzes, Related Reading and Writing, etc.

Thanks for all you do to send your child to school ready to learn!

Mrs. Nettling's Ohio 5th Grade Science Standards Checklist

1	2	3	4	Grading period in which this standard is covered
				Earth and Space Science
				1. Describe how night and day are caused by Earth's rotation.
				2. Explain that Earth is one of several planets to orbit the sun, and that the moon orbits Earth.
				3. Describe the characteristics of Earth and its orbit about the sun (e.g., three-fourths of Earth's surface is covered by a layer of water [some of it frozen], the entire planet surrounded by a thin blanket of air, elliptical orbit, tilted axis and spherical planet).
				4. Explain that stars are like the sun, some being smaller and some larger, but so far away that they look like points of light.
				5. Explain how the supply of many non-renewable resources is limited and can be extended through reducing, reusing and recycling but cannot be extended indefinitely.
				6. Investigate ways Earth's renewable resources (e.g., fresh water, air, wildlife and trees) can be maintained.
				Life Sciences
				1. Explain how almost all kinds of animals' food can be traced back to plants.
				2. Describe the role of producers in the transfer of energy entering ecosystems as sunlight to chemical energy through photosynthesis..
				3. Trace the organization of simple food chains and food webs (e.g., producers, herbivores, carnivores, omnivores and decomposers).
				4. Summarize that organisms can survive only in ecosystems in which their needs can be met (e.g., food, water, shelter, air, carrying capacity and waste disposal). The world has different ecosystems and distinct ecosystems support the lives of different types of organisms.
				5. Support how an organism's patterns of behavior are related to the nature of that organism's ecosystem, including the kinds and numbers of other organisms present, the availability of food and resources, and the changing physical characteristics of the ecosystem.
				6. Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).
				Physical Sciences
				1. Define temperature as the measure of thermal energy and describe the way it is measured..
				2. Trace how thermal energy can transfer from one object to another by conduction.
				3. Describe that electrical current in a circuit can produce thermal energy, light, sound and/or magnetic forces.
				4. Trace how electrical current travels by creating a simple electric circuit that will light a bulb.
				5. Explore and summarize observations of the transmission, bending (refraction) and reflection of light.
				6. Describe and summarize observations of the transmission, reflection, and absorption of sound.
				7. Describe that changing the rate of vibration can vary the pitch of a sound.

1	2	3	4	Grading period in which this standard is covered
				Science and Technology
				1. Investigate positive and negative impacts of human activity and technology on the environment.
				2. Revise an existing design used to solve a problem based on peer review.
				3. Explain how the solution to one problem may create other problems.
				Scientific Inquiry
				1. Select and safely use the appropriate tools to collect data when conducting investigations and communicating findings to others (e.g., thermometers, timers, balances, spring scales, magnifiers, microscopes and other appropriate tools).
				2. Evaluate observations and measurements made by other people and identify reasons for any discrepancies.
				3. Use evidence and observations to explain and communicate the results of investigations.
				4. Identify one or two variables in a simple experiment.
				5. Identify potential hazards and/or precautions involved in an investigation.
				6. Explain why results of an experiment are sometimes different (e.g., because of unexpected differences in what is being investigated, unrealized differences in the methods used or in the circumstances in which the investigation was carried out, and because of errors in observations).
				Scientific Ways of Knowing
				1. Summarize how conclusions and ideas change as new knowledge is gained.
				2. Develop descriptions, explanations and models using evidence to defend/support findings.
				3. Explain why an experiment must be repeated by different people or at different times or places and yield consistent results before the results are accepted.
				4. Identify how scientists use different kinds of ongoing investigations depending on the questions they are trying to answer (e.g., observations of things or events in nature, data collection and controlled experiments).
				5. Keep records of investigations and observations that are understandable weeks or months later.
				6. Identify a variety of scientific and technological work that people of all ages, backgrounds and groups perform.