

**USD 203 Piper Curriculum
Science**

Grade 5

Standard	Benchmark	Knowledge Base Indicators
1--Science as Inquiry	The student will develop the abilities to do scientific inquiry, be able to demonstrate how scientific inquiry is applied, and develop understandings about scientific inquiry.	
▲ Recommended Grade 7 Assessed Indicator	1--Scientific Inquiry	Demonstrate abilities necessary to do the processes of scientific inquiry.
		1.1.1. ▲ Identifies questions that can be answered through scientific investigations.
		1.1.2. ▲ Designs and conducts scientific investigations safely using appropriate tools, mathematics, technology, and techniques to gather, analyze, and interpret data.
		1.1.3. ▲ Identifies the relationship between evidence and logical conclusions.
		1.1.4. ▲ Communicates scientific procedures, results and explanations.
	2--Application	Apply different kinds of investigations to different questions.
		1.2.2. Differentiates between qualitative and quantitative data in an investigation.
	3--Analyze	Analyze how science advances through the interaction of new ideas, scientific investigations, skepticism, and examinations of evidence of varied explanations.
		1.3.1. After completing an investigation, generates alternative methods of investigation and/or further questions for inquiry.
		1.3.2. ▲ Evaluates the work of others to determine evidence which scientifically supports or contradicts the results, identifying faulty reasoning or conclusions that go beyond evidence and/or are not supported by data.
2--Physical Science	The student will apply process skills to develop and understanding of physical science including: properties, changes of properties of matter, motion and forces, and transfer of energy.	
3--Life Science	The student will apply process skills to explore and understand structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms.	
4--Earth and Space Science	The student will apply process skills to explore and develop and understanding of the structure of the Earth system, Earth's history, and Earth in the solar system.	
	1--Earth Structure	Understand that the structure of the Earth systems is continuously changing due to earth's physical and chemical processes.
		4.1.1 ▲ Identifies properties of the solid earth, the oceans and fresh water, and the atmosphere.
		4.1.2. ▲ Models Earth's cycles, constructive and destructive processes, and weather systems.
	2--Earth Processes	Understand past and present Earth processes and their similarity.
		4.2.1. ▲ Understands that earth processes observed today (including movement of lithospheric plates, constructive and destructive forces, and changes in atmospheric conditions) are similar to those that occurred in the past; earth history is also influenced by occasional catastrophes, such as the impact of a comet or asteroid.
	3--Solar System	Identify and classify stars, planets, and other solar system components.
		4.3.1. ▲ Compares and contrasts the characteristics of stars, planets, moons, comets, and asteroids.
		4.3.2. Models spatial relationships of the earth/moon/planets/sun system to scale.
		4.3.3. Identifies past and present methods used to explore space.
	4--Earth Phenomena	Model motions and identify forces that explain Earth phenomena.
		4.4.1. ▲ Demonstrates and models object/space/time relationships that explain phenomena such as the day, the month, the year, seasons, phases of the moon, eclipses and tides.

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		4.4.2. Describes how the angle of incidence of solar energy striking Earth's surface affects the amount of heat energy absorbed at Earth's surface.
5--Science and Technology	The student will demonstrate abilities of technological design and understanding about science and technology.	
	1--Technological Design	Demonstrate abilities of technological design.
		5.1.1. Identifies appropriate problems for technological design, designs a solution or product, implements the proposed design, evaluates the product, and communicates the process of technological design.
	2--Similarities, Differences, Relationships	Develop understandings of the similarities, differences, and relationships in science and technology.
		5.2.3. Identifies contributions to science and technology by many people and many cultures.
6--Science in Personal and Environmental Perspectives	The student will apply process skills to explore and develop an understanding of issues of personal health, population, resources and environment, and natural hazards.	
	1--Personal Health	Understand scientific knowledge relative to personal health.
		6.1.1. ▲ Identifies individual nutrition, exercise, and rest needs based on science and uses a scientific approach to thinking critically about personal health, lifestyle choices, risks and benefits.
	3--Natural Hazards	Understand that natural hazards are dynamic examples of earth processes which cause us to evaluate risks.
		6.3.2. Evaluates the risks involved with a natural hazard and identify appropriate actions in response to a natural hazard.
7--History and Nature of Science	The student will examine and develop an understanding of science as a historical human endeavor.	
	1--Scientific Habits of Mind	Develop scientific habits of mind.
		7.1.1. Practices intellectual honesty, demonstrates skepticism appropriately, displays open-mindedness to new ideas, and bases decisions on evidence.