Ohio Science

Grade 7

Adopted 2018

Earth and Space Science	1. **The hydrologic cycle illustrates the changing states of water as it moves through the lithosphere, biosphere, hydrosphere and atmosphere.** 7.ESS.1
	2. **Thermal-energy transfers in the ocean and the atmosphere contribute to the formation of currents, which influence global climate patterns.** 7.ESS.2
	3. **The atmosphere has different properties at different elevations and contains a mixture of gases that cycle through the lithosphere, biosphere, hydrosphere and atmosphere.** 7.ESS.3
	4. **The relative patterns of motion and positions of Earth, moon and sun cause solar and lunar eclipses, tides and phases of the moon.** 7.ESS.4
	5. **The relative positions of Earth and the sun cause patterns we call seasons.** 7.ESS.5
Life Science	1. **Energy flows and matter is transferred continuously from one organism to another and between organisms and their physical environments.** 7.LS.1
	2. **In any particular biome, the number, growth and survival of organisms and populations depend on biotic and abiotic factors.** 7.LS.2
Physical Science	1. **Elements can be organized by properties.** 7.PS.1
	2. **Matter can be separated or changed, but in a closed system, the number and types of atoms remains constant.** 7.PS.2
	3. **Energy can be transformed or transferred but is never lost.** 7.PS.3
	4. **Energy can be transferred through a variety of ways.** 7.PS.4

Nature of Science (K-8)

Scientific Inquiry, Practice and Applications

1. All students must use these scientific processes with appropriate laboratory safety techniques to construct their knowledge and understanding in all science content areas. 68.NS.1
    1. Apply knowledge of science content to real-world challenges. 68.NS.1.1
    2. Identify questions that can be answered through scientific investigations. 68.NS.1.2
    3. Design and conduct scientific investigations using appropriate safety techniques. 68.NS.1.3
    4. Use appropriate mathematics, tools and techniques to gather data and information. 68.NS.1.4
    5. Analyze and interpret data. 68.NS.1.5
    6. Develop descriptions, models, explanations and predictions. 68.NS.1.6
    7. Think critically and logically to connect evidence and explanations. 68.NS.1.7
    8. Recognize and analyze alternative explanations and predictions. 68.NS.1.8
    9. Communicate scientific procedures and explanations. 68.NS.1.9
    10. Design technological/engineering solutions. 68.NS.1.10

Science is a Way of Knowing

2. Science assumes the universe is a vast single system in which basic laws are consistent. Natural laws operate today as they did in the past and they will continue to do so in the future. Science is both a body of knowledge that represents a current understanding of natural systems and the processes used to refine, elaborate, revise and extend this knowledge. 68.NS.2
    1. Science is a way of knowing about the world around us based on evidence from experimentation and observations. 68.NS.2.1
    2. Science is a continual process and the body of scientific knowledge continues to grow and change. 68.NS.2.2
    3. Science assumes that objects and events occur in consistent patterns that are understandable through measurement and observation. 68.NS.2.3
    4. Science should carefully consider and evaluate all data including outliers. 68.NS.2.4
    5. Science is based on observable phenomena and empirical evidence. 68.NS.2.5
    6. Science disciplines share common rules for obtaining and evaluating empirical evidence. 68.NS.2.6

Science is a Human Endeavor

3. Science has been, and continues to be, advanced by individuals of various races, genders, ethnicities, languages, abilities, family backgrounds and incomes. 68.NS.3
    1. Individuals from different social, cultural, and ethnic backgrounds work as scientists and engineers. 68.NS.3.1
    2. Scientists and engineers are guided by habits of mind, such as intellectual honesty, tolerance of ambiguity, skepticism and openness to ideas. 68.NS.3.2
    3. Scientists and engineers rely on human qualities such as persistence, precision, reasoning, logic, imagination and creativity. 68.NS.3.3

Scientific Knowledge is Open to Revision in Light of New Evidence

4. Science is not static. Science is constantly changing as we acquire more knowledge. 68.NS.4
    1. Science explanations are subject to revision and improvement in light of additional scientific evidence or new understanding of scientific evidence. 68.NS.4.1