Ohio Science

Grade 4

Adopted 2018

Earth and Space Science

1. **Earth's surface has specific characteristics and landforms that can be identified.** 4.ESS.1
2. **The surface of Earth changes due to weathering.** 4.ESS.2
3. **The surface of Earth changes due to erosion and deposition.** 4.ESS.3

Life Science

1. **Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.** 4.LS.1
2. **Fossils can be compared to one another and to present-day organisms according to their similarities and differences.** 4.LS.2

Physical Science

1. **When objects break into smaller pieces, dissolve, or change state, the total amount of matter is conserved.** 4.PS.1
2. **Energy can be transferred from one location to another or can be transformed from one form to another.** 4.PS.2

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. 35.NS.1
    1. Observe and ask questions about the world that can be answered through scientific investigations. 35.NS.1.1
    2. Design and conduct scientific investigations using appropriate safety techniques. 35.NS.1.2
    3. Use appropriate mathematics, tools and techniques to gather data and information. 35.NS.1.3
    4. Develop and communicate descriptions, models, explanations and predictions. 35.NS.1.4
    5. Think critically and ask questions about the observations and explanations of others. 35.NS.1.5
    6. Communicate scientific procedures and explanations. 35.NS.1.6
    7. Apply knowledge of science content to real-world challenges. 35.NS.1.7

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. 35.NS.2
    1. Science is both a body of knowledge and processes to discover new knowledge. 35.NS.2.1
    2. Science is a way of knowing about the world around us based on evidence from experimentation and observations. 35.NS.2.2
    3. Science assumes that objects and events occur in consistent patterns that are understandable through measurement and observation. 35.NS.2.3

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. 35.NS.3
    1. People from many generations and nations contribute to science knowledge. 35.NS.3.1
    2. People of all cultures, genders, and backgrounds can pursue a career in science. 35.NS.3.2
    3. Scientists often work in teams. 35.NS.3.3
    4. Science affects everyday life. 35.NS.3.4
    5. Science requires creativity and imagination. 35.NS.3.5

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. 35.NS.4
    1. Science develops theories based on a body of scientific evidence. 35.NS.4.1
    2. Science explanations can change based on new scientific evidence. 35.NS.4.2