

Alignment of OAE Integrated Science Assessment Framework with Ohio-specified Standards

This alignment study identifies the national and/or Ohio educational standards that are addressed in whole or in part by each competency of the assessment framework. An indication of alignment does not necessarily imply complete congruence of the content of an OAE test competency with the relevant standard. The information in this document is subject to change if revisions are made to the assessment framework. Any changes will fully supersede the information contained in this document.

Competencies		Ohio Educational Preparation Standards	Ohio Educator Standards	Ohio Student Standards	
Integrated Science (7-12)		NSTA 2012 Standards for Science Teacher Preparation: Secondary Science Content Analysis Form	Ohio Standards for the Teaching Profession	Ohio Revised Science Standards and Model Curriculum: High School	CCSS - Reading Standards for Literacy in Science and Technical Subjects
<u>Nature of Science</u>					
0001	Understand principles and procedures of scientific inquiry.	Unifying Concepts: A.1-3; Chem: A.12; B.26 Phys: A.10; B.21 Bio: A.11; B.20	2	Science Inquiry and Application	Gr. 6-12: 2-4; 7-8
0002	Understand the history and nature of science.	Unifying Concepts: A.1-A.2; A.4 Chem: B.25 Phys: B.20 Bio: B.19 Earth/Space Sci: B.20	2	Science Inquiry and Application	

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0003	Understand the relationships between science, technology, engineering, mathematics, and society.	Unifying Concepts: A.5 Chem: A.13; B.24; B.27 Phys: A.11; B.22 Bio: A.11; B.18; B.21 Earth/Space Sci: A.12; B.19	2	Science Inquiry and Application	Gr. 6-12: 1-2; 4
<u>Physical Science</u>					
0004	Understand the properties and characteristics of matter.	Chem: A.1; A.3-A4; A.7; B.18; B.26 Phys: A.5-A.7; B.12-B.13; B.15	2	Phys. Sci: Classification of Matter; Atoms; Periodic Trends of the Elements; Reactions of Matter (nuclear reactions)	
0005	Understand chemical bonding, different types of chemical reactions, and stoichiometry.	Chem: A.2; A.5-A.6; A.8	2	Phys. Sci: Bonding and Compounds; Reactions of Matter (chemical reactions)	Gr. 6-12: 4

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0006	Understand the characteristics of energy transformations in physical and chemical systems.	Chem: A.4; B.23 Phys: B.12	2	Phys. Sci: Conservation of Energy; Transfer and Transformation of Energy	
0007	Understand force, motion, and energy.	Phys: A.1-A.4 Earth/Space Sci: B.17	2	Phys. Sci: Motion; Forces; Dynamics; Thermal Energy; Conservation of Energy	
0008	Understand the characteristics and properties of mechanical and electromagnetic waves.	Phys: A.8	2	Phys. Sci: Waves	
0009	Understand electricity and magnetism.	Phys: A.9	2	Phys. Sci: Electricity	
<u>Life Science</u>					
0010	Understand the characteristics, organization, and processes of cells.	Bio: A.1; A.8; B.13	2	Bio: Cells	
0011	Understand the classification and characteristics of organisms.	Bio: A.2-A.3; A.10; B.16-B.17	2	Bio: Diversity and Interdependence of Life	

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0012	Understand concepts and principles related to genetics and evolution.	Bio: A.4; A.7; B.15-B.16; Earth/Space Sci: B.18	2	Bio: Heredity, Evolution	
0013	Understand characteristics of different biomes, relationships among organisms, and the flow of matter and energy through ecosystems.	Bio: A.5-A.6; A.9; B.14; B.18; Earth/Space Sci: B.19	2	Bio: Diversity and Interdependence of Life	
<u>Earth and Space Science</u>					
0014	Understand physical geology and the history of Earth.	Earth/Space Sci: A.1-A.5; A.11; B.13; B.16	2	Phys. Geol: Minerals; Igneous, Metamorphic, and Sedimentary rocks; Earth's History; Plate Tectonics; Earth's Resources; Glacial Geology; Env. Sci: Earth's Resources	
0015	Understand characteristics of the hydrosphere, weather, and climate.	Earth/Space Sci: A.3; A.5-A.7; B.13-B.15; B.19	2	Env. Sci: Earth Systems	
0016	Understand characteristics of the solar system and universe.	Earth/Space Sci: A.8-A.9; B.16-B.18	2	Phys. Sci: The Universe	