

Alignment of OAE Biology 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	
Life Sciences (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; 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	
0003	Understand the relationships between biology, engineering, technology, mathematics, and society.	Unifying Concepts: A.5 Bio: A.11; B.18; B.21	2	Science Inquiry and Application	Gr. 6-12: 1-2; 4
<u>Biochemistry and Cell Biology</u>					

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0004	Understand the chemistry of living systems.	Bio: A.1; B.13	2	Bio: Cells	
0005	Understand cell structure, function, and bioenergetics.	Bio: A.8; B.13-B.14	2	Bio: Cells	
<u>Genetics and Evolution</u>					
0006	Understand molecular genetics.	Bio: A.7; B.15	2	Bio: Cells; Heredity	
0007	Understand patterns and processes of inheritance.	Bio: A.4; A.7; B.16	2	Bio: Heredity	
0008	Understand the mechanisms of biological evolution.	Bio: A.4; A.6-A.7; B.15	2	Bio: Evolution	
0009	Understand the scientific explanations and evidence for the history of life on Earth.	Bio: A.2-A.4; B.16	2	Bio: Heredity; Evolution	
<u>Biological Unity and Diversity</u>					
0010	Understand the structures and functions of organisms and their life cycles.	Bio: A.1-A.2; A.8-A.10	2	Bio: Diversity and interdependence of life	

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0011	Understand how organisms obtain, store, and use energy and matter to maintain homeostasis.	Bio: A.1-A.2; A.10; B.13-B.14;	2	Bio: Cells; Diversity and Interdependence of Life	
0012	Understand the anatomy and physiology of human organ systems.	Bio: A.1; A.8-A.10; A.12; B.14; B.17	2	Bio: Cells; Diversity and Interdependence of Life	
<u>Ecology and Environment</u>					
0013	Understand populations and communities.	Bio: A.1; A.5-A.6; A.9; B.14	2	Bio: Cells; Diversity and Interdependence of Life	
0014	Understand ecosystems and biomes.	Bio: A.1; A.5; B.14	2	Bio: Cells; Diversity and Interdependence of Life	
0015	Understand the effects of human activities on the biosphere.	Bio: A.5; A.12; B.18		Bio: Cells; Diversity and Interdependence of Life	