

MISSOURI EDUCATOR GATEWAY ASSESSMENTS

Field 076 Chemistry

Content Alignment Study

The Content Alignment Study below provides information about the alignment of knowledge and skills described in the competencies that make up the test framework for this licensure test with the state and national standards designated by the Department of Elementary and Secondary Education for this field. The table indicates those portions of the relevant state and/or national standards that are addressed -- in whole or in part -- by each competency.

Test Competency	Missouri 6–12 Science Grade-Level Expectations	Next Generation Science Standards (NGSS) and National Science Teaching Association (NSTA) Standards
Matter and Its Interactions—Composition and Bonding		
0001 Analyze the properties of matter.	6-8.PS1.A.1, 6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.3, 9-12.PS1.A.4, 9-12.PS1.C.1, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-PS1-1, MS-PS1-2, MS-ETS1-1-4, HS-ETS1-1-4
0002 Analyze chemical bonding and matter interactions and properties.	6-8.PS1.A.1, 6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.4, 9-12.PS1.A.1, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-PS1-2, HS-ETS1-1-4
Matter and Its Interactions—Structure and Periodicity		
0003 Apply knowledge of the structure and naming of chemical substances and periodic properties of the elements.	6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.1, 9-12.PS1.A.3, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-PS1-1, HS-PS1-2, HS-ETS1-1-4
0004 Apply knowledge of the mole and mass relationships in chemical changes	6-8.PS.1.B.1, 6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.2, 9-12.PS1.B.3, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-ETS1-1-4

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Energy		
0005 Analyze energy transfers in chemical and physical processes.	6-8.PS1.B.2, 6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.5, 9-12.PS3.A.1, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-PS1-4, MS-PS1-6, MS-ETS1-1-4, HS-PS1-4, HS-ETS1-1-4
0006 Analyze the types of chemical reactions and their causes.	6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.2, 9-12.PS1.B.1, 9-12.PS1.B.2, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-PS1-5, HS-PS1-6, HS-ETS1-1-4
0007 Apply knowledge of oxidation and reduction reactions and electrochemical cells.	6-8.PS1.B.1, 6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.B.3	MS-PS1-5, MS-ETS1-1-4, HS-PS1-7, HS-ETS1-1-4
0008 Apply knowledge of chemical equilibrium.	6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.B.1, 9-12.PS1.B.2, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-PS1-6, HS-ETS1-1-4
Solutions and Gases and Their Associated Properties		
0009 Demonstrate knowledge of kinetic molecular theory, the nature of phase changes, and the gas laws.	6-8.PS1.A.4, 6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-PS1-4, MS-ETS1-1-4, HS-PS1-5, HS-ETS1-1-4
0010 Demonstrate knowledge of the acid and base nature of substances.	6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-ETS1-1-4

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0011 Analyze the properties of solutions and other aqueous mixtures.	6-8.ETS1.A.1, 6-8.ETS1.B.1-3, 9-12.PS1.A.3, 9-12.ETS1.A.1-2, 9-12.ETS1.B.1-2	MS-ETS1-1-4, HS-ETS1-1-4
Physics		
0012 Apply knowledge of physics concepts.	6-8.PS2.A.1-2, 6-8.PS2.B.1-3, 6-8.PS3.A.1-3, 6-8.PS3.B.1, 6-8.PS4.A.1-2, 9-12.PS2.A.1, 9-12.PS2.A.2, 9-12.PS2.A.3, 9-12.PS2.B.1-2, 9-12.PS3.A.2-3, 9-12.PS3.B.1, 9-12.PS3.C.1, 9-12.PS4.A.1, 9-12.PS4.B.1-2	MS-PS2-1-5, MS-PS3-1, MS-PS3-1-5, MS-PS4-1-2, HS-PS2-1-5, HS-PS3-1, HS-PS3-2, HS-PS3-4-5
Biology		
0013 Apply knowledge of biology concepts.	6-8.LS1.A.1-4, 6-8.LS1.B.1-2, 6-8.LS1.C.1, 6-8.LS2.A.1-2, 6-8.LS2.B.1, 6-8.LS2.C.1, 6-8.LS4.B.1-2, 6-8.LS4.C.1, 9-12.LS1.A.1-3, 9-12.LS1.B.1, 9-12.LS1.C.1-2, 9-12.LS2.A.1, 9-12.LS2.B.1-3, 9-12.LS2.C.1, 9-12.LS3.A.1, 9-12.LS3.B.1-4, 9-12.LS4.A.1-2, 9-12.LS4.B.1-2, 9-12.LS4.C.1-2	MS-LS1-1-4, MS-LS1-6-8, MS-LS2-1-4, MS-LS3-1-2, MS-LS4-1-6, HS-LS1-1-5, HS-LS1-7, HS-LS2-1-6, HS-LS3-1-3, HS-LS4-1-5

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Earth Science		
0014 Apply knowledge of Earth science concepts.	6-8.ESS1.A.1-3, 6-8.ESS1.C.1, 6-8.ESS2.A.1-2, 6-8.ESS2.B.1, 6-8.ESS2.C.1-3, 6-8.ESS3.A.1, 6-8.ESS3.B.1, 6-8.ESS3.C.1-2, 6-8.ESS3.D.1, 9-12.ESS1.A.1-3, 9-12.ESS1.C.1, 9-12.ESS2.A.3-4, 9-12.ESS2.C.1, 9-12.ESS2.D.1, 9-12.ESS3.A.1-2, 9-12.ESS3.C.1-2, 9-12.ESS3.D.2	MS-ESS1-1-2, MS-ESS1-4, MS-ESS2-1-6, MS-ESS3-1-5, HS-ESS1-1-5, HS-ESS2-1, HS-ESS2-3-6, HS-ESS3-1, HS-ESS3-3-5