

MISSOURI EDUCATOR GATEWAY ASSESSMENTS

Field 018 Chemistry

Content Alignment Table

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 Learning Standards for Science 9, 10, 11	NSTA Standards for Science Teacher Preparation 2011 (NSTA) Next Generation Science Standards 2013 (NGSS)	Common Core State Standards for Mathematics (CCSS-Math) Common Core State Standards for ELA & Literacy in History/Social Studies, Science, and Technical Subjects (CCSS-ELA)
0001 Understand the practices of scientific inquiry and engineering design.	S7.1.A-D	NSTA: S1.A.3.b.28; S1.A.3.c.32; S4.4a-c NGSS: Science and Engineering Practices 1-8; HS-ETS1 Engineering Design	CCCS-Math: HS-Statistics and Probability S-IC-D CCCS-Math: HS-Modeling; N-Q.1-3; 6.RP.1-3; 7.RP.1-3; 8.F.1-3; 8.EE.4
0002 Understand crosscutting concepts in the sciences and engineering.	S7.1.C-D; S8.2.A, D; S8.3.C-D	NSTA: S1.A.3.a.12, 15; S1.A.3.b.26; S1.A.3.c.29-31 NGSS: Crosscutting concepts 1-7	CCCS-ELA: Reading Standards for Literacy in Science and Technical Subjects grades 9-12, Standards 1-10
0003 Understand the relationships between science, technology, and human activity in a global context.	S8.1.B; S8.3.B-D	NSTA: S1.A.3.a.13; S1.A.3.b.27 NGSS: HS-ESS1-3; HS-LS1-4; HS-PS2, 4; HS-ETS1	
0004 Understand the properties of matter.	S1.1.A-B, G; S1.2.E	NSTA: S1.A.3.a.1, 14 NGSS: HS-PS1	CCSS-Math: 6.RP.1-3; 7..RP.1-3; 7.EE.3
0005 Understand atomic theory and the periodic table.	S1.1.E-F	NSTA: S1.A.3.a.1, 3 NGSS: HS-PS1	

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0006 Understand the kinetic molecular theory, the nature of phase changes, and the gas laws.	S.1.1.D	NSTA: S1.A.3.a.6; S1.A.3.b.19 NGSS: HS-PS1, 3	
0007 Understand energy changes in chemical and physical processes.	S.1.1.D; S.1.2.A, D, F	NSTA: S1.A.3.a.4-5; S1.A.3.b.19 NGSS: HS-PS1, 3	CCSS-Math: 7.EE.3
0008 Understand the nomenclature and structure of inorganic and organic compounds.	S1.1.A	NSTA: S1.A.3.a.1; S1.A.3.b.18, 20, 22 NGSS: HS-PS1	
0009 Understand chemical bonding and intermolecular forces and their effect on the properties of substances.	S1.1.A-B, H	NSTA: S1.A.3.a.2; S1.A.3.b.18, 20 NGSS: HS-PS1	
0010 Understand the nature of chemical reactions.	S1.1.H; S1.2.D, F	NSTA: S1.A.3.a.4-5, 10-11 NGSS: HS-PS1	
0011 Understand the principles of chemical equilibrium.	S1.1.H; S1.2.D	NSTA: S1.A.3.a.5; S1.A.3.b.19 NGSS: HS-PS1	CCSS-Math: 7.EE.3
0012 Understand acid-base chemistry.	S1.1.H	NSTA: S1.A.3.a.9; S1.A.3.b.21 NGSS: HS-PS1	CCSS-Math: 7.EE.3

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0013 Understand oxidation-reduction reactions and electrochemistry.	S1.1.H	NSTA: S1.A.3.a.10, 16 NGSS: HS-PS1	
0014 Understand the mole concept and stoichiometry.	S1.1.I; S1.2.F	NSTA: S1.A.3.a.4, 7 NGSS: HS-PS1	CCSS-Math: 6.RP.1-3; 7.RP.1-3; 7.EE.3
0015 Understand the properties of solutions and colloidal suspensions.	S1.1.A-B	NSTA: S1.A.3.a.8; S1.A.3.b.23 NGSS: HS-PS1	CCSS-Math: 7.EE.3