

Curriculum Map

Subject: Chemistry	Grade Level: 10-12	Sixth Week: 4 th	Week: 1
Instructional Focus Summary	<p>Chapter 7.1 Completing the Model of the Atom Relate emission spectra to the electron configuration of atoms. Relate energy sublevels and orbitals within the atom.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>(Chem.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u></p> <p><u>(A) demonstrate safe practices during field and laboratory investigations</u> <u>(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials</u></p> <p><u>Chem.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u></p> <p><u>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u> <u>(B) collect data and make measurements with precision</u> <u>(C) express and manipulate chemical quantities using scientific conventions and mathematical procedures such as dimensional analysis, scientific notation, and significant figures</u> <u>(D) organize, analyze, evaluate, make inferences, and predict trends from data</u> <u>(E) communicate valid conclusions</u></p> <p><u>Chem.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u></p> <p><u>(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information</u> <u>(B) make responsible choices in selecting everyday products and services using scientific information</u> <u>(C) evaluate the impact of research on scientific thought, society, and the environment</u> <u>(E) research and describe the history of chemistry and contributions of scientists</u></p> <p>Chem.4 Science concepts. The student knows the characteristics of matter. (D) describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior</p> <p>Chem.5 Science concepts. The student knows that energy transformations occur during physical or chemical changes in matter. (A) identify changes in matter, determine the nature of the change, and examine the forms of energy involved (B) identify and measure energy transformations and exchanges involved in chemical reactions</p> <p>Chem.6 Science concepts. The student knows that atomic structure is determined by nuclear composition, allowable electron cloud, and subatomic particles. (A) describe the existence and properties of subatomic particles (C) summarize the historical development of the periodic table to understand the concept of periodicity</p> <p>Chem.11 Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. (A) identify common elements and compounds using scientific nomenclature (B) demonstrate the use of symbols, formulas, and equations in describing interactions of matter such as chemical and nuclear reactions <u>(C) explain and balance chemical and nuclear equations using number of atoms, masses, and charge</u></p>		

Concepts/ Vocabulary	sublevel, Heisenberg uncertainty/principle, orbital, electron configuration
Resources	Glencoe <u>Chemistry Concepts and Applications</u> by Phillips, Strozak, and Wistrom
Instructional Activities	
Assessment	
Integration	
Intervention	
Extension	

Subject: Chemistry	Grade Level: 10-12	Sixth Week: 4 th	Week: 2
Instructional Focus Summary	Chapter 7.2 The Periodic Table and Atomic Structure Distinguish between the <i>s</i> , <i>p</i> , <i>d</i> , and <i>f</i> blocks on the periodic table and relate them to an element's electron configuration. Predict the electron configurations of elements using the periodic table.		
TEKS/SE (Bolded TEKS/SE are assessed with TAKS) (Power TEKS/Student Expectations are Underlined) (TEKS below 80% passing on the last TAKS test)	<u>Chem.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u> (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information Chem.4 Science concepts. The student knows the characteristics of matter. (A) differentiate between physical and chemical properties of matter (D) describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior Chem.11 Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. (A) identify common elements and compounds using scientific nomenclature		
Concepts/ Vocabulary	Inner transition element		
Resources	Glencoe <u>Chemistry Concepts and Applications</u> by Phillips, Strozak, and Wistrom		
Instructional Activities			
Assessment			
Integration			
Intervention			
Extension			

Subject: Chemistry	Grade Level: 10-12	Sixth Week: 4 th	Week: 3
Instructional Focus Summary	<p>Chapter 8.1 Main Group Elements Relate the position of any main group element in the periodic table to its electron configuration. Predict chemical behavior of the main group of elements. Relate chemical behavior to electron configuration and atomic size.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>Chem.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u> (A) <u>demonstrate safe practices during field and laboratory investigations</u> (B) <u>make wise choices in the use and conservation of resources and the disposal or recycling of materials</u></p> <p><u>Chem.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u> (A) <u>plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u> (B) <u>collect data and make measurements with precision</u> (C) <u>express and manipulate chemical quantities using scientific conventions and mathematical procedures such as dimensional analysis, scientific notation, and significant figures</u> (D) <u>organize, analyze, evaluate, make inferences, and predict trends from data</u> (E) <u>communicate valid conclusions</u></p> <p><u>Chem.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u> (A) <u>analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information</u> (B) <u>make responsible choices in selecting everyday products and services using scientific information</u> (C) <u>evaluate the impact of research on scientific thought, society, and the environment</u> (D) <u>describe the connection between chemistry and future careers</u> (E) <u>research and describe the history of chemistry and contributions of scientists</u></p> <p>Chem.4 Science concepts. The student knows the characteristics of matter. (A) <u>differentiate between physical and chemical properties of matter</u> (D) <u>describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior</u></p> <p>Chem.5 Science concepts. The student knows that energy transformations occur during physical or chemical changes in matter. (A) <u>identify changes in matter, determine the nature of the change, and examine the forms of energy involved</u> (B) <u>identify and measure energy transformations and exchanges involved in chemical reactions</u></p> <p>Chem.6 Science concepts. The student knows that atomic structure is determined by nuclear composition, allowable electron cloud, and subatomic particles. (A) <u>describe the existence and properties of subatomic particles</u> (B) <u>analyze stable and unstable isotopes of an element to determine the relationship between the isotope's stability and its application</u></p> <p>Chem.11 Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. (A) <u>identify common elements and compounds using scientific nomenclature</u></p>		

	(B) demonstrate the use of symbols, formulas, and equations in describing interactions of matter such as chemical and nuclear reactions
Concepts/ Vocabulary	Alkali metal, Alkaline earth metal, Halogen
Resources	Glencoe <u>Chemistry Concepts and Applications</u> by Phillips, Strozak, and Wistrom
Instructional Activities	
Assessment	
Integration	
Intervention	
Extension	

Subject: Chemistry	Grade Level: 10-12	Sixth Week: 4th	Week: 4
Instructional Focus Summary	<p>Chapter 8.2 Transition Elements Relate the chemical and physical properties of the transition elements to their electron configurations. Predict the chemical behavior of transition elements from their positions in the periodic table.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>Chem.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u> (A) <u>demonstrate safe practices during field and laboratory investigations</u> (B) <u>make wise choices in the use and conservation of resources and the disposal or recycling of materials</u></p> <p><u>Chem.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u> (B) <u>collect data and make measurements with precision</u> (D) <u>organize, analyze, evaluate, make inferences, and predict trends from data</u> (E) <u>communicate valid conclusions</u></p> <p><u>Chem.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u> (A) <u>analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information</u> (B) <u>make responsible choices in selecting everyday products and services using scientific information</u> (C) <u>evaluate the impact of research on scientific thought, society, and the environment</u> (E) <u>research and describe the history of chemistry and contributions of scientists</u></p> <p>Chem.4 Science concepts. The student knows the characteristics of matter. <u>(A) differentiate between physical and chemical properties of matter</u></p> <p>Chem.5 Science concepts. The student knows that energy transformations occur during physical or chemical changes in matter. (A) <u>identify changes in matter, determine the nature of the change, and examine the forms of energy involved</u> (B) <u>identify and measure energy transformations and exchanges involved in chemical reactions</u></p> <p>Chem.6 Science concepts. The student knows that atomic structure is determined by nuclear composition, allowable electron cloud, and subatomic particles. (A) <u>describe the existence and properties of subatomic particles</u></p> <p>Chem.11 Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. (A) <u>identify common elements and compounds using scientific nomenclature</u></p>		
Concepts/ Vocabulary	Transition elements, inert gases, alloys		
Resources	Glencoe <u>Chemistry Concepts and Applications</u> by Phillips, Strozak, and Wistrom		

Instructional Activities	
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Intervention	
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Subject: Chemistry	Grade Level: 10-12	Sixth Week: 4 th	Week: 5
Instructional Focus Summary	<p>Chapter 9.1 Bonding of Atoms Predict the type of bond that forms between atoms by using electronegativity values. Compare and contrast characteristics of ionic, covalent, and polar covalent bonds. Interpret the sea of electrons model of metallic bonding.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>Chem.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u> <u>(E) research and describe the history of chemistry and contributions of scientists</u></p> <p>Chem.4 Science concepts. The student knows the characteristics of matter. <u>(A) differentiate between physical and chemical properties of matter</u> <u>(B) analyze examples of solids, liquids, and gases to determine their compressibility, structure, motion of particles, shape, and volume</u> (D) describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior</p> <p>Chem.6 Science concepts. The student knows that atomic structure is determined by nuclear composition, allowable electron cloud, and subatomic particles. (C) summarize the historical development of the periodic table to understand the concept of periodicity</p> <p>Chem.11 Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. (A) identify common elements and compounds using scientific nomenclature</p>		
Concepts/ Vocabulary	Electronegativity, shielding effect, polar covalent bond, malleable, ductile, conductivity, metallic bond		
Resources	Glencoe <u>Chemistry Concepts and Applications</u> by Phillips, Strozak, and Wistrom		
Instructional Activities			
Assessment			
Integration			
Intervention			
Extension			

Subject: Chemistry	Grade Level: 10-12	Sixth Week: 4 th	Week: 6
Instructional Focus Summary	<p>Chapter 9.2 Molecular Shape and Polarity Diagram electron dot structures for molecules. Formulate three-dimensional geometry of molecules from electron dot structures. Predict molecular polarity from three-dimensional geometry and bond polarity.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>Chem.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u> (A) <u>demonstrate safe practices during field and laboratory investigations</u> (B) make wise choices in the use and conservation of resources and the disposal or recycling of materials</p> <p><u>Chem.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u> (A) <u>plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u> (B) <u>collect data and make measurements with precision</u> (D) <u>organize, analyze, evaluate, make inferences, and predict trends from data</u> (E) communicate valid conclusions</p> <p><u>Chem.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u> (B) make responsible choices in selecting everyday products and services using scientific information (C) <u>evaluate the impact of research on scientific thought, society, and the environment</u> (E) research and describe the history of chemistry and contributions of scientists</p> <p>Chem.4 Science concepts. The student knows the characteristics of matter. (A) <u>differentiate between physical and chemical properties of matter</u> (B) <u>analyze examples of solids, liquids, and gases to determine their compressibility, structure, motion of particles, shape, and volume</u> (C) <u>investigate and identify properties of mixtures and pure substances</u> (D) describe the physical and chemical characteristics of an element using the periodic table and make inferences about its chemical behavior</p> <p>Chem.6 Science concepts. The student knows that atomic structure is determined by nuclear composition, allowable electron cloud, and subatomic particles. (A) describe the existence and properties of subatomic particles (C) summarize the historical development of the periodic table to understand the concept of periodicity</p> <p>Chem.11 Science concepts. The student knows that balanced chemical equations are used to interpret and describe the interactions of matter. (A) identify common elements and compounds using scientific nomenclature</p>		
Concepts/ Vocabulary	Double bond, triple bond, polar molecule		
Resources	Glencoe <u>Chemistry Concepts and Applications</u> by Phillips, Strozak, and Wistrom		

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