

**CHEMISTRY (Science 112.45)****Correlation to Texas Essential Knowledge and Skills****CHAPTER 1 - INTRODUCTION TO WATER**

ACTIVITY	KNOWLEDGE AND SKILL
Surveying the Properties of Water, 1-11	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.12(A) Science concepts (demonstrate and explain effects of temperature...on the solubility of solids) (B) (develop general rules for solubility...) (C) (evaluate the significance of water as a solvent...) 112.45.13(B) Science concept (interpret relationships...colligative properties or water...)
Clearly H <sub>2</sub> O, 1-21	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.11(A) Science concepts (identify common elements and compounds...) 112.45.12(A) Science concepts (demonstrate and explain effects of temperature...on the solubility of solids)
Water Careers, 1-85	112.45.3(D) Scientific processes (describe the connection between chemistry and future careers)



## CHAPTER 2 - DRINKING WATER AND WASTEWATER TREATMENT

ACTIVITY	KNOWLEDGE AND SKILLS
Carbon Treatment for Water Pollution Control, 2-9	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.12(C) Science concepts (evaluate the significance of water as a solvent...) 112.45.13(B) Science concepts (interpret relationships...colligative properties of water) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)
Chlorination for Disinfection, 2-15	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.11(B) Science concepts (demonstrate the use of symbols, formulas,...) 112.45.12(C) Science concepts (evaluate the significance of water as a solvent...) 112.45.13(B) Science concepts (interpret relationships... colligative properties of water) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)

ACTIVITY	KNOWLEDGE AND SKILLS
Metals Pollution Reduction, 2-59	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.12(C) Science concepts (evaluate the significance of water as a solvent...) 112.45.13(B) Science concepts (interpret relationships...colligative properties of water) 112.45.14(C) Science concepts (identify the characteristics of a neutralization reaction) (D) (describe effects of acids and bases on an ecological system) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)

ACTIVITY	KNOWLEDGE AND SKILLS
The World of Biological Wastewater Treatment, 2-83	112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.11(A) Science concepts (identify common elements and compounds...) (B) demonstrate the use of symbols, formulas... (C) explain and balance chemical equations... 112.45.12(C) Science concepts (evaluate the significance of water as a solvent...) 112.45.13(B) Science concepts (interpret relationships...colligative properties of water) 112.45.14(C) Science concepts (identify the characteristics of a neutralization reaction) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)

**CHAPTER 3 - SURFACE WATER RESOURCES**

ACTIVITY	KNOWLEDGE AND SKILL
Pollutants: How Much Total or How Much Unit of Water, 3-63	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.12(C) Science concepts (evaluate the significance of water as a solvent...) 112.45.13(B) Science concepts (interpret relationships...colligative properties of water) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)

## CHAPTER 4 - GROUND WATER RESOURCES

ACTIVITY	KNOWLEDGE AND SKILLS
Landfills and the Potential for Groundwater Contamination, 4-97	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.12(C) Science concepts (evaluate the significance of water as a solvent...) 112.45.13(B) Science concepts (interpret relationships...colligative properties of water) 112.45.14(D) Science concepts (describe effects of acids and bases on an ecological system) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)

## CHAPTER 5 - WETLANDS AND COASTAL WATERS

ACTIVITY	KNOWLEDGE AND SKILL
Oil Spills, 6-65	112.45.1(A)(B) Scientific processes (...conducts field and laboratory investigations...) 112.45.2(A)(B)(C)(D) Scientific processes (...uses scientific methods...) 112.45.3(A) Scientific processes (...uses critical thinking and scientific problem solving...) 112.45.4(C) Scientific concepts (investigate and identify properties...) 112.45.5(A) Science concepts (identify changes in matter...) 112.45.8(A) Science concepts (identify characteristics of atoms involved in chemical bonding) (D) (describe the influence of intermolecular forces...) 112.45.14(D) Science concepts (describe effects of acids and bases on an ecological system) 112.45.15(B) Science concepts (relate the rate of a chemical reaction...)