

Active Chemistry and Active Physics correlation for Mississippi Physical Science



	Active Chemistry			Predictions			Sports			Home			Transportation			Medicine			Communication		
"X" Coverage in Student Edition and/or Teacher Edition supports the development of the concept.	Movie Special Effects	Periodic Table	Cool Chemistry	Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3
"XX" Indepth coverage of concept in Student Edition																					

Physical Science

1. Demonstrate the proper use of scientific methods and investigative techniques.

a. Experimentally investigate a problem utilizing the scientific process.	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
b. Scientifically communicate the results of an experiment.	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
c. Demonstrate safe and proper use of scientific equipment.	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

2. Perform measurements and mathematical calculations using metric units.

a. Express numbers and perform operations using scientific notation.		xx																			
b. Identify the significant digits in a given measurement.		x																			
c. Employ graphs to record, display, and interpret data.	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
d. Perform unit conversions within the metric system.	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

3. Identify basic structure of matter.

a. Define and specify the location of the basic components of an atom.		xx																			
b. Utilize the periodic table to determine atomic composition of elements and periodic patterns.	x	xx																			
c. Describe the states of matter using the kinetic molecular theory.	xx																				
d. Differentiate between elements, compounds, solutions, and mixtures.	x	x	x																		
e. Compare and contrast atoms, ions, and isotopes.	x	xx	x																		
f. Write chemical formulas for compounds.		xx	xx																		
g. Classify compounds as acids, bases, or salts.			x																		
h. Identify compounds with regard to bond type.	x	xx	xx																		

4. Investigate physical and chemical changes in matter.

a. Differentiate between physical and chemical changes.	xx	x	x																		
b. Identify chemical reactions as endothermic or exothermic.			x																		



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c. Balance equations when chemical formulas are given.		x	xx																			
d. Identify types of chemical reactions.	x	xx	xx																			
e. Determine the factors affecting rates of solutions.		x	xx																			
f. Examine typical acid/base reactions.			xx																			
5. Investigate matter in motion.																						
a. Show how motion involves a frame of reference.						xx																
b. Calculate average speed.					x	xx	xx						xx									
c. Define the fundamental forces of nature.																						
d. Explain the basic principles found in Newton Three Laws of Motion.					xx			xx						xx								
e. Determine net force and the resulting motion of objects.					xx	xx	x	xx	x				x	xx	x							
6. Describe sources, uses, and effects of energy.																						
a. Differentiate between kinetic and potential energy.	x					x	x	x	x	x	x											
b. Discuss the transfer and/or transformation of energy (conservation of energy).	x	x	x									xx	x				x					
c. Define heat and temperature and their effect on particle motion.	x	x	xx									x	x									
d. Observe and communicate that systems tend to become less orderly over time (entropy).																						
7. Discuss general properties and characteristics of waves.																						
a. Classify waves as either mechanical or electromagnetic.	x	xx															x	x	x	xx	xx	x
b. Differentiate among transverse, longitudinal, and surface waves.											x											
c. Determine wavelength, frequency, period, and velocity of waves.		xx															x	xx	x	xx	x	x
d. Examine the properties of waves (interference, refraction, reflection, diffraction, Doppler effect, etc.).		xx															x	xx	xx	xx	x	xx
8. Explain the continuum of the electromagnetic spectrum.																						
a. Identify the electromagnetic spectrum divisions according to frequency and/or wavelength.		xx																			x	
b. Describe the emission of light by electrons when moving from higher to lower energy (photons as quanta of light).		xx																			x	



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c. Demonstrate understanding that visible light is composed of the color spectrum.		xx																x	xx		
d. Identify primary and secondary colors.																			x		
e. Demonstrate the additive and subtractive properties of colors.																					
9. Recognize the interrelationships of electricity and magnetism.																					
a. Identify electrical charges and their interactions (likes repel, opposites attract).												xx									x
b. Differentiate between static and current electricity.												x									
c. Design and construct simple direct current electrical circuits.	x	x									xx	xx	x								
d. Identify the two poles of a magnet and the interaction of their fields.						x						xx									
e. Describe the relationship between electric current and magnetic fields and the applications of fields in motors and generators.												xx									