A Correlation of

Pearson Chemistry

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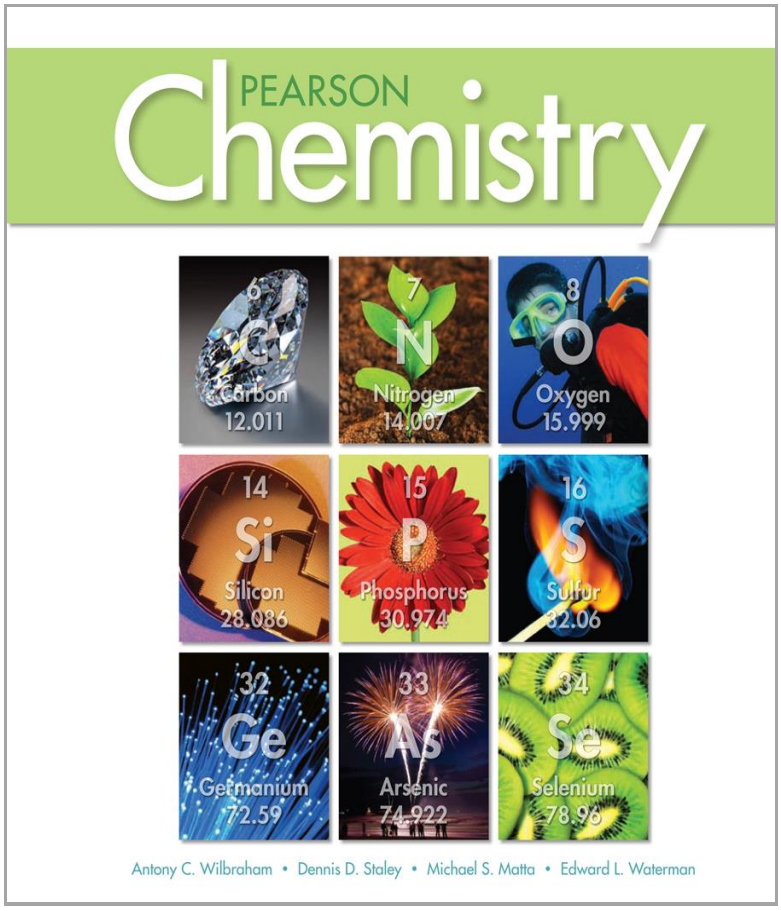

to the

Michigan Standards for Science
High School - Physical Science

Pearson

Introduction

The following document demonstrates how ***Pearson Chemistry* ©2012** supports the Michigan K-12 Standards for High School Physical Science. Correlation references are to the Student Edition (SE) and Teacher Edition (TE).

Pearson has long-standing relationships with contributors and authors who have been involved with the development and review of the Next Generation Science Frameworks and subsequent Next Generation Science Standards. As such, the spirit and pedagogical approach of the Next Generation Science Standards initiative is embedded in all of our programs, such as ***Pearson Chemistry.***

The planning and development of ***Pearson Chemistry*** was informed by the same foundational research as A Framework for K12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Specifically, our development teams used Project 2061, the National Science Education Standards (1996) developed by the National Research Council, as well as the Science Anchors Project 2009 developed by the National Science Teachers Association to inform the development of this program. As a result, students make connections throughout the program to concepts that cross disciplines; practice science and engineering skills; and build on their foundational knowledge of key science ideas.

Pearson Chemistry combines proven and tested content with cutting-edge digital support and hands-on learning opportunities. This program provides you with everything you need to engage and motivate your students, as well as the tools to support the varied types of learners in your classroom.

Pearson Chemistry is built on a learning model that connects curriculum, instruction, and assessment to the "Big Ideas" of chemistry that develops deep understanding.

Pearson Chemistry provides all of the problem-solving and math support that students need to be successful in the course, with ample opportunity for practice both in the Student Edition and in the program's digital resources.

Pearson Chemistry helps you meet the unique learning styles of each student in your classroom with a variety of resources. A variety of assessment opportunities helps you monitor student progress ensure student success on high-stakes tests.

Pearsonchem.com provides cutting-edge digital content that engages students and teachers – anytime, anywhere, with numerous practice opportunities and visual support, including interactive art and animations. Online tutors step students through chemistry and math problems, expanding learning beyond the classroom.

Michigan Standards for Science High School – Physical Science	Pearson Chemistry
Structure and Properties of Matter	
HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.	**SE/TE:** 167-169, 170-173 **TE Only:** 171-173
HS-PS1-3 Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.	**SE/TE:** 201-203, 204-207, 208, 209-212, 226-231, 232-234, 259 **TE Only:** 206, 210, 234
HS-PS1-8 Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.	**SE/TE:** 880-883, 888-890, 891
HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. *	**SE/TE:** 34-35, 36-37, 42-44, 58, 110-111
Chemical Reactions	
HS-PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.	**SE/TE:** 177-178, 179-180, 181-182, 346-348, 349-352 **TE Only:** 170-172
HS-PS1-4 Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.	**SE/TE:** 556-558, 562-564, 565-567 **TE Only:** 566
HS-PS1-5 Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.	**SE/TE:** (604-606, 607-608) 609-611, 612-615 **TE Only:** 615

Michigan Standards for Science High School – Physical Science	Pearson Chemistry
HS-PS1-6 Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.*	**SE/TE:** 400-403, 609-611, 612-615
HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	**SE/TE:** 50, 384-386, 387-389, 399 **TE Only:** 399
Forces and Interactions	
Pearson Chemistry focuses on the study of the composition of matter and the changes that matter undergoes. Therefore, Physical Science standards on the topic of Forces and Interactions (HS-PS2) fall outside of the Chemistry curriculum.	
Energy	
HS-PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.	**SE/TE:** 562-564, 565-568, 578-579, 580-582
HS-PS3-2 Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).	For supporting content, please see **SE/TE:** 423-424, 556, 569-573 **TE Only:** 568
HS-PS3-3 Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.*	For supporting content, please see **SE/TE:** 728-735 **TE Only:** 574
HS-PS3-4 Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	For supporting content, please see **SE/TE:** 562-564 **TE Only:** 632

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HS-PS3-5 Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.	For related content, please see **SE/TE:** 105-109, 128-129, 133
Waves and Electromagnetic Radiation	
HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.	**SE/TE:** 138-141, 152 **TE Only:** 148
HS-PS4-2 Evaluate questions about the advantages of using a digital transmission and storage of information.	This performance expectation falls outside the scope of this program.
HS-PS4-3 Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	**SE/TE:** 138-141, 142-145, 148 **TE Only:** 130, 147
HS-PS4-4 Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	For supporting content, please see **SE/TE:** 140, 143, 154-155
HS-PS4-5 Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy. *	**SE/TE:** 110-111, 146, 148, 155, R5