

Southern Lehigh School District

Middle School Syllabus

Science 307 2013-2014

Course Description:

During the first part of the semester, 7th grade students will review the basics of matter, including a description of matter, the proper method and tools used to measure matter, and how matter changes, both physically and chemically. During this introduction, students will also learn how to use the Periodic Table of Elements to identify the characteristics of the elements.

Students will learn to use the information from the Periodic Table during the second part of the semester to determine and show how elements will react with each other. Students will be able to show these reactions using electron dot diagrams. Studies of simple carbon chemistry, solutions, and acids and bases will complete the semester.

Students will review cell structure and learn cell reproduction, then will be introduced to the concept of the passing on of traits from generation to generation (the study of genetics).

Human body systems and biomechanics are the targeted topics of study for the second semester. Students will first learn about the circulatory, digestive, respiratory and nervous systems. Students will next explore the laws of physics (forces, motion, work and machines) through the workings of the skeletal and muscular systems. Connections will be made between the physics and chemistry concepts presented and how these concepts are at work in the human body, allowing the student to participate in life activities.

**Labs will be performed by the students during each semester, following the steps of the scientific method and allowing students to better own the concepts being taught through inquiry.

Course Content:

Introduction to Chemistry, Cell structure and Reproduction, Genetics, Human Body Systems (circulatory, digestive, respiratory and nervous), Biomechanics (forces and motion within the skeletal and muscular systems).

Required Textbooks and/or Other Reading/Research Materials

Pearson Interactive Science - Introduction to Chemistry

Pearson Interactive Science - Human Body

Pearson Interactive Science - Forces and Energy

Scholastic *ScienceWorld* magazines

Kids Discover magazines

Current Events – electronic or paper as pertains to content topics.

Online reference materials found/recommended by teachers and students.

Course Requirements:

Students are expected to demonstrate an understanding of how chemistry affects our interactions with our environment and the use the scientific method to solve problems. Through the study of biomechanics and the human body systems, students will show evidence of the interrelationship of the systems of the body and the mechanics behind everyday life activities. Lastly, students will be expected to transfer the aforementioned understandings to new situations or world issues and develop an appreciation for a variety of potential career choices.

Grade Components/Assessments:

Grades will be based on assessments such as labs, projects, homework, tests, and quizzes.

Quarter 1	20%
Quarter 2	20%
Midterm	10%
Quarter 3	20%
Quarter 4	20%
Final	10%

Required Summer Reading/Assignments:

No Summer Reading/Assignments