

Physical Science Syllabus

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Course Description

Physical Science provides an introductory study of physics and chemistry with both hands-on learning activities and laboratory experiences. Physics topics include motion, speed, acceleration, forces, Newton's Laws, thermodynamics, and waves. Chemistry topics include atoms, elements, chemical bonds, chemical reactions, solutions, and mixtures.

Course Goals

Following this course studying Physical Science, students will...

- Be able to describe and carry out the roles of science in the world God has created.
 - Have a general understanding of concepts in Physics and Chemistry.
 - Be able to conduct experiments in the laboratory safely and efficiently.
 - Be able to collaborate effectively with their peers to gather and share information.
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Mission Connection

LCCS exists to glorify God as a community of faith and learning dedicated to forming disciples of Jesus Christ, pursuing goodness, truth, and beauty, cultivating wisdom and virtue, and furthering the highest ideals and practices of human flourishing. This course supports the LCCS mission as it teaches that science is a beautiful gift that we have been given. God has equipped us with the ability to make observations and build from those observations an understanding of overarching themes and concepts. In a world that tells us that science and reason have explained God away, we stand firmly in the truth that without God there is no reason for us to believe science holds any answers. Science is built on the foundation of consistency and repeatability. If we take God out of the picture, there is no reason for us to think that the universe and the laws/behaviors that govern it will continue in a way that is consistent or coherent. The fact that we can conduct explorations that yield understandable results points to an understanding behind the design of the universe. The natural revelation that God has given us is one of the ways that God has chosen to reveal himself to us. To begin to examine and understand the creation is to begin to examine and understand the creator who holds all things together and designed each of his creatures with a purpose. Through this understanding we are able to build innovations that help creation flourish to the glory of our creator.

Textbook and Required Materials

Text:

John D. Mays, *Physical Science, A Mastery-Oriented Curriculum 3rd Edition*

ISBN: 978-0-9981699-1-0

Other Materials:

- A 1" to 1.5" three ring binder* SEPARATE from other classes.
- 4 Pocket Dividers* labeled Homework, Classwork/Notes, Labs, Assessments.

- Loose leaf notebook paper*
 - Composition Notebook* (lab notebook)
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Classroom Procedures

As students enter, they will find their seats and review the class schedule on the front board. They will get out the necessary materials as directed by the instructions up front and respectfully wait for class to start.

During lectures students will have out the necessary materials to follow along with the lecture and take notes.

During labs students will work respectfully and diligently following the necessary steps and procedures. They will fill out the required information in their lab notebooks as specified by their instructor.

During individual/group work times students will work respectfully and talk quietly to ensure a safe and encouraging work environment for all students.

Classroom Expectations (Student Learning Agreement)

God has created us each uniquely. He has also created us to worship Him with our efforts in everything that we do. Seeking to perform at the highest level of excellence is an act of worship to our Creator. As such, I agree to the following.

- I will be **ON TIME** for all classes every day.
I understand that a total of three unexcused tardies to any and all of my classes will result in an immediate before or after-school detention.
 - I will be **PREPARED** for class every day.
I will have a writing utensil, paper, my textbook, and any other necessary resources for success in the classroom. Not being prepared for class may result in a deduction of points from my class participation grade.
 - I will **COMPLETE** all assignments on time.
I understand that late assignments will result in a deduction of 10% of the assignment grade *per day* that the assignment is late up to 50%. After 5 days, the grade becomes a zero for the assignment. Late work will not be accepted for credit but may still be required to be completed.
 - I will **RESPECT** my instructor(s), any LCCS staff member, volunteer(s), classmates, and other students in other grades.
Profanity, rude gestures, cruel teasing or put downs will not be tolerated. Such behavior(s) will first be addressed and managed by the instructor. If such behavior(s) continue students may be referred to the Dean of Students.
 - I will keep my **CELL PHONE OFF** and away at all times during the school day (8 am-3:10 pm). I understand that if my cell phone is visible or on, the instructor will confiscate the device and the Student Handbook Cell Phone Policy will be followed.
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Discipline

To instruct and govern; to teach rules and practice, and accustom to order and subordination (Noah Webster 1828). Discipline is done in the classroom as necessary to maintain a safe, orderly and conducive-to-learning environment for all students. Students whose behavior is deemed by the teacher to be disrespectful and/or disruptive to the teaching and learning processes by any means will serve the following consequences:

- 1st offense – verbal warning. (seating may be changed)
- 2nd offense – The student will have a meeting with the instructor and parent(s) will be contacted.
- 3rd offense – The student will be given a detention and will be referred to the Dean of Students.

Students removed from class due to disciplinary problems are responsible to acquire any missed work or notes.

Course Outline (subject to change)

Quarter 1

Chapter 1: Matter and Atoms
Chapter 2: Sources of Energy
Chapter 3: Conservation of Energy
Chapter 4: Order and Design in Creation

Quarter 2

Chapter 5: Forces and Fields
Chapter 6: Substances
Chapter 7: Science, Theories, and Truth
Chapter 8: Measurements and Units

Quarter 3

Chapter 9: Properties of Substances
Chapter 10: Force and Motion
Chapter 11: Compounds and Chemical Reactions

Quarter 4

Chapter 12: Waves, Sound, and Light
Chapter 13: Electricity
Chapter 14: Magnetism and Electromagnetism

Labs

Labs are a wonderful opportunity to explore hands on the wonderful world that God has made. Labs should be enjoyable and engaging, but they also present hazards that other classroom activities do not. Because of this, lab procedures as laid out before each lab must be followed carefully. Students will record everything in their lab notebooks which will be handed in at the conclusion of each lab, and will receive a grade based on completion.

Homework

Homework completion will be an important tool for success in this class. You will get out of it what you are willing to put in, in other words, the harder you work the more you will gain. Homework from night to night will vary. Some nights reading will be assigned, other nights students may be asked to record answers to questions. These written assignments will be collected and graded for completion at the instructor's discretion.

Assessments

Included in this class are a couple different forms of assessment. These assessment grades account for 60% of the student's overall grade.

In class **quizzes** will be taken most weeks. These quizzes will deal with the material covered in the book and through lectures. The main goal of the quizzes is to show the students and the instructor what the students know. Because of this, the lowest two quiz scores in each quarter will be dropped. These quizzes will each be worth 10-30 pts.

This class also includes **group/individual projects**. These projects will be assessed based on the scope of the project so point values will vary from project to project.

There will be an **exam** every couple units dealing with the material covered during those units.

There will be a **final exam** at the end of the year that will cover the content of the course.

Field Trips

TBD

Grading Overview

Weighted Structure

- 40% Tests/Projects
- 30% Quizzes/Minor Projects/Labs
- 20% Homework/Classwork
- 10% Class Participation

Grading Scale

4.0 = A = 93-100	2.0 = C = 73-76
3.7 = A- = 90-92	1.7 = C- = 70-72
3.3 = B+ = 87-89	1.3 = D+ = 67-69
3.0 = B = 83-86	1.0 = D = 63-66
2.7 = B- = 80-82	0.7 = D- = 60-62
2.3 = C+= 77-79	0 = F = 0-59

Class Participation and Attendance

Participation in class discussions and activities will be key for individual and class growth. Participation takes many forms including everything from asking and answering questions to completing in class and out of class activities. Students are expected to pay attention, keep from hindering others learning, and take part in all class activities. At the end of each week students will receive a participation grade out of a total of 5pts. If students pay attention, ask questions for clarification when needed, and complete class assignments they will receive full participation credit. **Warning:** the quickest way to lose participation points is to hinder others while they are learning. Distractions and disruptions will not be tolerated.

Make-up Work

If a student is absent they are responsible to check in with their instructor the next day they are in class and ask what they missed. The student will have two days to complete missed work for each day of class they were absent. In the case that a student knows ahead of time that they will miss class they need to check with the instructor to see what they should be working on to stay on pace with the

classwork.

Late work can still receive partial credit. Each day (up to 5 days) that an assignment is late 10% will be deducted from the final score. After 5 days the assignment will not be accepted for credit.

STUDENT: I have read this syllabus and understand what is expected of me.

Signature _____ Date _____

PARENTS: My child has discussed the syllabus with me. I understand it and will support it.

Signature _____ Date _____