

MONTE VISTA CHRISTIAN SCHOOL

SCI 058 Physical Science

Mrs. Linda Richards, Instructor

Course Syllabus

Course Description:

An introduction to the basic concepts of physics and chemistry. Students will develop problem solving and thinking skills such as observing, classifying, measuring, sequencing and interpreting scientific illustrations. Communication and relational skills will be enhanced as students work effectively with their classmates through research, discussion, project-based learning, laboratory experiments and activities.

Curricular Mapping:

This course will continue to explore and develop the concepts of motion and force, energy, matter, heat, fluids, basic chemistry and the composition of atoms. Newton's Laws will be introduced and utilized through laboratory experiments and projects preparing the student for future success in the area of Physics. Further investigation of the elements will provide foundational knowledge as the student progresses into Chemistry.

Technological ESLR

In line with the school's Mission Statement, in particular, "dedicated to being a premier college preparatory Christian school", in particular, providing "innovative educational programs that prepare our students for success in life", graduates of Monte Vista are technologically fluent in current, mainstream computing technologies. A graduate of Monte Vista Christian School:

- a. Is technologically fluent in current, mainstream computing technologies.
- b. Demonstrate comfort using and adapting to new technologies and operating computing hardware and software.
- c. Demonstrate responsible **digital citizenship**, in particular with respect to safety, ownership rights, collaboration, publication, privacy, security and digital footprints.
- d. Demonstrate competence in transmitting digital data without the use of paper.
- e. Demonstrate competence in producing digital products, such as but not limited to notes, essays, projects, and presentations.
- f. Demonstrate on-line research competence to find answers and solve problems in

real time scenarios.

Resource - <http://www.iste.org/standards> <http://fcit.usf.edu/matrix/matrix.php>

Course Objectives:

Upon the successful completion of this course the student will be able to:

1. Define the velocity of an object as the rate of change of its position.
2. Explain how unbalanced forces cause changes in velocity.
3. Describe many of the more than 100 elements of matter. Students should be able to describe distinct properties and atomic structure and should relate that all forms of matter are composed of one or more of the elements.
4. Describe chemical reactions as processes in which atoms are rearranged into different combinations of molecules.
5. Relate the principles of chemistry to the functioning of biological systems.
6. Explain the organization of the periodic table as it relates to the properties of the elements and reflects the structure of atoms.
7. Describe “buoyant force” as a force that all objects experience when immersed in a fluid.
8. Determine that scientific progress is made by asking meaningful questions and conducting careful investigations.

Texts:

Your necessary digital texts for this class are part of a “Required Course Materials Fee” thru the EdTech bookstore. This bundle has your students schedule preloaded and the bulk of their required course materials already prepackaged for you. You were sent an email on 7/25/16 with detailed instructions for purchasing and activation. Please note: some courses may require additional purchases outside of the course materials fee.

Course Outline and Requirements:

1. Introduction to Physical Science
2. The Nature of Matter
3. Solids, Liquids, and Gases
4. Elements and the Periodic Table
5. Atoms and Bonding
6. Chemical Reactions
7. Acids, Bases, and Solutions
8. Carbon Chemistry
9. Motion and Energy
10. Forces
11. Forces in Fluids
12. Work and Machines
13. Waves
14. Electromagnetic Waves

Instruction will be enhanced through lecture, discussion, in-class activities and labs and will include both group and individual projects. Students will be evaluated through the use of formative as well as summative assessments.

Grading:

All student grades will be weighted as follows:

1. 55% Tests/Projects
2. 45% Homework

Middle School Grading Policy:

Please refer to the Middle School Handbook for full details.

Class Policies:

- 1) Attendance: Students are expected to be in class daily. If you are unable to attend, it is your responsibility to get the class work and homework missed. You will have one day for every day you are absent to make up your work.
- 2) Tardiness: Please be in your seat, quiet, ready to work and have all materials ready when the tardy bell rings. Failure to adhere to this policy will result in a "Tardy."
- 3) Raise your hand to ask or answer a question.
- 4) Clean work area before exiting a room.

School Policies:

Students are subject to all academic policies of the school as printed in the Academic Catalog and Student Handbook. Furthermore, it is each student's responsibility to read and follow all academic policies of the school.

iPad Apps:

Students will need the following free apps:

- Stopwatch
- Calculator
- Graphing
- eClicker Audience
- Doceri or Educreations
- Subtext

Additional iPad Apps:

The following apps will enhance the student's classroom experience:

- iMovie
- NOVA Elements, Periodic Table LITE, or EMD Periodic Table
- SimPhysics

Tips for Students:

-Come to class with a positive attitude and a readiness to listen, work with others, and ask questions.

-Check the Online Course regularly for extra resources and all assignments.

Instructor Contact :

1. Office Hours: After school until 4:00 pm.
2. Room: M-7
3. Email: lindarichards@mves.org
4. School Extension: 446

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Terms of Agreement

Terms:

This syllabus is a contract between the instructor and the student with a parent/guardian witness. As an instructor of this course, I am committed to abiding by this syllabus. As a student of this course, you also are expected to abide by this syllabus. By signing this Terms of Agreement, you are affirming that you have read and agree to abide by the guidelines, policies and agreements stated in this syllabus.

As a parent/guardian, I have read and agree to support this student in an effort to follow the guidelines, policies and agreements stated in this syllabus.

Parent Signature

Date

As a student of this course, I have read and agree to abide by the guidelines, policies and agreements stated in this syllabus.

Student Signature

Date