Main

PHYSICAL SCIENCE SYLLABUS

GENERAL INFORMATION

Teacher: Nicholas S. Sourvelis

Room Number: B208

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Materials Required:

The teacher will provide all of the neccesary materials required. It is encouraged that student bring their own pencil and their own calculator, if they have a prefered type.

Website: Science Portal - http://www.scienceportal.xyz/index.php

username: jasper | password: GoVikes!

Classroom Expectations

When you are a student in Mr. Sourvelis' class 100% of his attention is focused to providing you with a science education of the highest quality. Expected in return is 100% of your attention. During instruction you are expected to engage and participate in learning the material that your teacher works so hard to develop and present. Any obstacle, behavioral or other, that prevent this is off the table for discussion and prohibited. This includes, but is not limited to: the use of electronic devices during instruction, sleeping, frequent bathroom breaks, and excessive off-topic talking.

COURSE DESCRIPTION

Introduction

Welcome to physical science. First of all, DON'T FREAK OUT! The topics and ideas discussed in this class are some of the most intriguing, deep, and fantastic questions there are. You are going to love this class. Most students agree that they hate how much they come to love this class. You will not understand what they mean now, but you will. There are a couple of things that you should be made aware of before we get started. We are going to have a blast. KEEP CALM and STAY NERDY!

You will be challenged. Learning something challenging, completely new, and abstract is frustrating. The frustration accompanied by learning is completely normal. Once you recognize that the frustration is part of the learning process you can let go of it and have fun. It is quite rewarding when you finally figure IT out; whatever it may be. This class is designed for you to enjoy, but it will be what you make of it. With a little bit of hard work and effort, this could be one of your best classes.

Physical science is an inquiry-based course designed to familiarize you with the scientific processes and skills in addition to the topics related to physical science. During this course, you will learn to identify the basic questions and concepts that guide scientific investigation. You will learn how to design and conduct your investigations and experiments. Math skills are essential to success in physical science. If you are not the best math student now, you will be better at the end of the course. You will be assessed on multiple levels such as traditional assessments (test), project-based assessments, and scientific investigation skills. **Throughout the course, the emphasis is often placed more on the concepts and method of solution or analysis, and less on the actual final product or answer.**

What is Physical Science?

Physical science is a general term for the sciences concerned with the study of inanimate natural objects, including physics, chemistry, astronomy, and related subjects. This class will cover introductory physics and introductory chemistry.

What is Chemistry?

Chemsitry is the branch of science that deals with the identification of the substances of which matter is composed; the investigation of their properties and the ways in which they interact,

combine, and change; and the use of these processes to form new substances. The primary focus of this class is the study of matter, energy, and the changes both undergo. Chemistry deals with the identification of the substances of which matter is composed; the investigation of their properties, how they interact, combine, and change. Many people think of chemists as being white-haired mad scientists mixing strange liquids in a laboratory, but the truth is we are all chemists. Understanding basic chemistry concepts is important for almost every profession. Chemistry is part of everything in our lives. Every material in existence is made up of matter — even our bodies. Chemistry is involved in everything we do, from growing and cooking food to cleaning our homes and bodies to launching a space shuttle. Chemistry helps us to describe and explain our world.

What is Physics?

Physicists study the most fundamental physical phenomena of nature. Physics is the study of nature, from the formation of galaxies to the interaction of atomic nuclei. The goal of physical science is to provide an understanding of the physical world by developing theories based on experiments. The gold standard of a theory is prediction. No theory to date has given a complete description of all physical phenomena. The primary focus of the physics covered is classical mechanics. Classical physical science is not an exact description of the universe, but it is an excellent approximation under the following conditions: Matter must be moving at speeds less than about 1% of the speed of light, the objects dealt with must be large enough to be seen with a microscope, and only weak gravitational fields, such as the field generated by the Earth, can be involved. Because humans live under such circumstances, classical physical science seems intuitively reasonable, while many aspects of modern science seem bizarre. This is why models are so useful in modern physical science — they let us conceptualize phenomena we do not ordinarily experience.

Science is Mother Nature's biography.

Prerequisite

Students interested in this course must be and both **academically able and willing** to engaged fully in the rigorous curriculum.

Academically able: Successful completion of Algebra I (or concurrently enrolled).

Academically willing: An individual that values education, takes ownership of their education, and enjoys being challenged.

Attendance, Assignments, and Make-up Policy

Attendance: Regular attendance is required. If you typically miss a lot of school this class is not for you. Students with high absences typically do not pass. Your attendance should be your highest priority. It is your responsibility to find out what you missed.

Assignments: I do not assign typical homework with a hard deadline. At the beginning of a new lesson, I will hand out or assign all of the daily work for that chapter. You are to begin work on it immediately. You will have homework most nights. You should be ready to discuss the material in class; your grade includes informed participation. All assigned daily work is due the day of the test. However, do not wait until the day before to try and complete the daily work. You WILL fail at this.

Academic Honesty: You are to produce your own work. Plagiarism or cheating WILL result in a severe academic penalty. Cell phones may only be used as an instructional tool. However, the use of a cell phone is never permitted during an examination.

Help Sessions: Mr. Sourvelis cares about the success of his students. If you find yourself struggling please consult Mr. Sourvelis during class, after class, or by email, or phone to schedule a help session if you find yourself struggling with this course.

Make-up Policy All work can be submitted late with an excused absence according to the Jasper City Board of Education’s policy. Students with extenuating circumstances maybe given additional time without penalty to be determined on a case by case bases.

Course Goals

The primary goal of this course is to provide an enriching learning environment so that we may develop science-literate thinkers, who are capable of collecting information from the world around them, critically analyzing that information for validity, and deciding as to how to move forward based on the evidence. Scientific literacy and prowess are qualities necessary for success in today's economy. If these goals are met, students will be skilled at carrying out effective scientific investigations, analyzing data, communicating results, and applying the results to explain phenomena occurring outside the laboratory. Students will be able to read and evaluate scientific text for validity and significance. Most importantly after this course, students will be confident in the pursuit of a college science education and career.

General Objectives

The student will be able to:

a. Modify/affirm preexisting scientific conceptions through experimentation and using other evidence.

b. Use laboratory equipment properly.

c. Identify the independent and dependent variables in any experiment.

d. Graph data properly using axes labeled with appropriate quantities, appropriate units on axes, axes labeled with appropriate intervals, and an appropriate title.

e. Identify trends and sources of error using class data.

f. Analyze data by re-expressing data to determine the correct proportional relationship among variables, determining the value, units, and physical significance of the slope of the graph, and writing the equation derived from the analysis.

g. Predict and explain everyday phenomena using equations and graphs derived from data.

Course Structure

This course is graded by weighted averages, NOT points. Each assignment does have a point value, but each assignment falls into one of two categories: Daily grade (30%)(Daily - practice items, labs, quizzes, FRQ), Test (70%).

Each chapter is structured the same way. There are a series of practice items, one or more labs, quiz, practice test, and chapter test. The Science Portal has available a lesson presentation with teacher notes and complimentary videos. Each practice item has been aligned with an instructional video. The Science Portal tutorial found in the Getting Started folder will explain this more.

Your instructor has made it as easy as possible for students to keep track of what assignments are required and which category they fall into. Your assignment guide is called the Notebook Checklist. It is very important to look at the notebook checklist at the beginning of each chapter. Take a moment and schedule when you plan to complete each practice assignment. Each chapter has a pacing guide as well. The pacing guide lists the topics of discussion and aligns each topic with the practice item that goes along with that topic. The best practice is to complete each practice item the day that the topic is taught. Time allowing, we will end each class by working on the practice. What does not get finished is to be completed for homework. DO NOT wait until the day or two before the test. YOU WILL NOT BE SUCCESSFUL in this course with this kind of strategy.

BIOGRAPHY

About Your Teacher

Mr. Sourvelis has been teaching science since 2011. His first teaching position was at Minor High School in Adamsville, Alabama. While at Minor High Nicholas helped thirty-two of his students, who had previously been unsuccessful, pass the science portion of the Alabama High School Graduation Examination. Mr. Sourvelis taught in the Walker County School System from 2012 to 2019. During that time, he taught chemistry, AP chemistry, pre-AP chemistry, physics, AP physics, physical science, and zoology.

As of August 2019, Mr. Sourvelis is employed in the Jasper City School System where he will be teaching chemistry, AP chemistry, and physical science at Jasper High School. “It has always been my goal to come home and teach at my alma mater. GO VIKES!” - Nick Sourvelis

Mr. Sourvelis holds an Alabama Class AA teaching certificate in general science received his Education Specialist Degree (secondary) from the University of Alabama, Tuscaloosa, a Masters of Art in Education (secondary science) from The University of Alabama at Birmingham, and a Bachelor’s of Science degree from Samford University. In addition, Mr. Sourvelis continues his education through varied professional development opportunities like APEX (more info) , a 3-year physics education program, or taking graduate-level chemistry courses.

I Care About My Students

I want each of you all to know that I care about my students. I care about your success; I care about your failures; I care about your futures. It is because of the passion I have for passing along the lessons I have learned, whether science lessons or life lessons that I am a teacher. You will for the first time be challenged to your limits. That's ok. Each person must discover their limits and find the perseverance to overcome them. This is the path every young adult must take to becoming an adult, know your limits, and overcome them. I am here to help guide you on this path.

COURSE OUTLINE

Chemistry Content

Test	*Topics*
Chapter 1	Properties of Matter
Chapter 2	Measurements and Calculation
Chapter 3	Atomic Structure
Chapter 4	Chemical Bonding
Chapter 5	Chemical Reactions
Chapter 6	Nuclear Chemistry

Physics Content

Chapter 7	Introduction to Physics
Chapter 8	Motion
Chapter 9	Force
Chapter 10	Energy
Chapter 11	Electricity
Chapter 12	Waves and Technology

QUICK TIPS

Time Management

Perfect practice makes perfect. It will not help you to copy the practice assignments from your friend. I think those students who do well in my class would agree that the practice assignments are significantly more difficult than the test (practice harder than we play). One suggestion I would make takes advantage of the time in class I give you to practice. You will be given plenty of time to practice in class.

Studying is Crucial

Over the years I have continually graphed students' grade performance. The grade distribution clearly illustrates that students either get it or they do not. Those who do well are students who spent a significant amount of time outside of class studying. This is a requirement (review the syllabus you signed in the agreement of) to be successful in chemistry. A study by Cornell College stated that a student should spend about 4-6 hours a day outside of class in preparation for college curriculum. Cornell Study

You Can Do It!

Every student in our class is capable of "doing" chemistry. Take it from someone who made a 42 on his first chemistry test. If I can learn it, so can you. DO NOT be afraid to fail during practice time. You WILL learn more from this than any success.

Do'in The Most

Are you someone who is doing the most they can every day? To be successful in life you will find that at some point doing the "minimum" is no longer enough. That time has come. Let us learn this now in the forgiving environment of high school. The real world rarely gives second chances.

So what can *"YOU"* do?

First and foremost; heed to the advice I have spent the better part of a Saturday morning composing. You should also become familiar with the "Success in High School chemistry" document. I will provide this to you in class.

Second: Understand that you will be challenged. Learning something challenging, completely new, and abstract is frustrating. The frustration accompanied by learning is completely normal. Once you recognize that the frustration is part of the learning process you can let go of it and have fun. It is quite rewarding when you finally figure IT out. This class is designed for you to enjoy, but it will be what you make of it. With a little bit of hard work and effort, this could be one of your best classes.

Third: **Keep calm, and stay nerdy!**

I look forward to a great class.

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Agreement of Syllabus

I _____ , have read and understood the syllabus. In signing I also understand that the information and scheduling included hereinabove is subject to change.
Student Signature _____ Date_____
Parent/Guardian_____ Date_____