

**Physical Science**

Yearlong, 2022-2023



**Eligible Students:**

**6th-8th graders, 9th graders welcome.** Students must be able to read independently and to create

notes that are organized and easy to follow. Students should be able to express themselves

effectively through writing, and must be capable of reviewing information and concepts on their

own throughout the year outside of class. A foundation in arithmetic, including integer, fraction,

and decimals, plus experience in basic algebra would be a plus.

Please note: Course includes multiple laboratory exercises in addition to in-class coursework.

Lab reports will require time outside of class to complete.

**Class Dates:** Wednesday, September 7th, 2022 – Thursday, May 25th, 2023

**Class Times:** Monday, Wednesday, and Thursday: **9:30am EST (60-75 minutes)**

**Instructor:** Danielle Bartko

**E-mail:** [dbartko.scholeacademy@gmail.com](mailto:dbartko.scholeacademy@gmail.com)

**Schedule for Physical Science:**

**Class Sessions Dates:**

**Classes will take place on:**

**Mondays, Wednesdays, and Thursdays: 9:30am EST (60-75 minutes)**

**for 32 weeks and 95 classes on the following dates\***

**September:** 7, 8, 12, 14, 15, 19, 21, 22, 26, 28, 29

**October:** 3, 5, 6, 10, 12, 13, 17, 19, 20, 24, 26, 27, 31

**November:** 2, 3, 7, 9, 10, 14, 16, 17, [Thanksgiving Break] 28, 30

**December:** 1, 5, 7, 8, 12, 14, 15 **[Christmas Break]**

**January: [Christmas Break]**, 9, 11, 12, 16, 18, 19, [**End 1st Semester]**, 23, 25, 26, 30

**February:** 1, 2, 6, 8, 9, 13, 15, 16, [Winter Break], 27

**March:** 1, 2, 6, 8, 9, 13, 15, 16, 20, 22, 23, 27, 29, 30

**April:** [Holy Week/Easter] 10, 12, 13, 17, 19, 20, 24, 26, 27

**May**: 1, 3, 4, 8, 10, 11, 15, 17, 18, 22, 24, 25 **[End 2nd Semester]**

*\*Please note the above dates and times are the anticipated class sessions for this course. However, all dates are subject to change as the instructor’s circumstances might dictate (e.g. illness, family emergency). Any classes canceled by the instructor will be made up at an alternate time designated by the instructor.*

**Physical Science Course Map:**

**Semester 1:**

Chapter 4 Order and Design in Nature

Chapter 7 Science, Theories, and Truth

Chapter 8 Measurement and Units

Chapter 1 Matter and Atoms

Chapter 6 Substances

Chapter 9 Properties of Substances

Chapter 11 Compounds and Chemical Reactions

**Semester 2:**

Chapter 2 Sources of Energy

Chapter 3 Conservation of Energy

Chapter 10 Force and Motion

Chapter 5 Forces and Fields

Chapter 12 Waves, Sound, and Light

Chapter 13 Electricity

Chapter 14 Magnetism and Electromagnetism

**Office Hours:** In addition to scheduled class times, teachers will generally designate an optional weekly session as needed. During “Office Hours” students may raise questions, seek assistance, or review class material. Additionally, Mrs. Bartko can answer questions via email [dbartko.scholeacademy@gmail.com](mailto:dbartko.scholeacademy@gmail.com) during reasonable daylight hours.

**Required Course Texts:**

* Novare *Physical Science*, 3rd Edition, by John Mays
* A binder or binder section dedicated to the course
* Graph paper, preferably 4 square per inch
* Ruler
* Various household materials required for labs. These will be low-cost, easily-accessible materials, to be outlined throughout the year.

**Physical Science Course Description:**

Physical Science is an introductory course for middle school students, and will serve as the foundation for future studies in Chemistry and Physics. This course will also inspire students to marvel in God’s handiwork! Students will learn that scientific knowledge points towards the existence of God, which will also help give students a firm foundation in their faith.

This course uses a mastery approach, which will prepare students for higher level concepts. Concepts will be reviewed frequently throughout the year to promote retention. Students will learn how to take detailed notes and build outlines of the material presented. Participation is essential during class time, as we will build student knowledge through Socratic discussion, inquiry based learning, and laboratory activities.

**Student Expectations: Executive Function Skills**

Students enrolling in Scholé Academy will be expected to show development of Executive Function Skills throughout the year. Executive Function Skills speaks to a set of qualities and skill sets students can develop and hone to better approach the courses, lectures, readings and teachers they will face in their future academic coursework.

Students are expected to be:

**1. An Engaged Student:** One who is willing to step into the arena of class discussion, ask questions, supply answers, generate the internal dialogue necessary to determine if what's being discussed is important and necessary to himself.

**2. Note Taking:** A student who during and after being engaged with the class has been trained to note important and relevant content in an organized fashion (Cornell Notes would be a great option). His notes would then be consulted, independently, for application in assignments and assessments.

**3. Attention to Detail & Preparedness:** These students are ones who consistently adhere to deadlines, submission requirements, adhering to style guides and codes, confirm technology is working prior to the start of class, be responsible to determine how to proceed after an absence, be responsible for consulting his course syllabus and adjusting as the class proceeds, etc.

**4. Employ Critiques:** These students are ones who receive feedback to one of their submissions, and then are sure to apply that feedback to future assignments rather than repeating mistakes. These students also glean information from the live class critiques of fellow students and note mistakes to avoid by learning from others.

**5. Initiative/Maturity:** This student would hear the teacher comments and be able to assess whether or not the teacher was describing his work, and then take the initiative to schedule office hours with his teacher if necessary.

**Student Expectations In Action**

In this class, students will be expected to listen attentively, and participate actively in class discussions and practices. Students are expected to arrive to class on time and with all assigned material completed. The instructor will facilitate learning for the student, but the responsibility for staying up-to-date with classwork and assignments ultimately falls to the student.

All assignments will be due into the appropriate Schoology Assignment folder prior to the start of class each day. Students turning in late work will earn a 10% penalty for each day the assignment is late. Late work will not be accepted after the 3rd day. Students will submit their work by scanning their homework pages and uploading it into the Schoology assignment window. Assignments should be submitted as one PDF file. Photographs of completed assignments will not be accepted as they are incredibly difficult to read.

**Student Evaluation: Grading**

While pursing this course through Scholé Academy will be “restful”, we also recognize the need to provide grades for students who will be using this course as part of their prepared college transcript. It’s a delicate balance to achieve both restful learning and excellent academic performance. Earning a specific grade should not overshadow achievement goals for mastery of this discipline.

The student will be assigned the following grades to the student’s level of achievement:

* *magna cum laude* (with great praise)
* *cum laude* (with praise)
* *satis* (sufficient, satisfactory)
* *non satis* (not sufficient)

Ideally, every average student working diligently should do praiseworthy work (cum laude). Those who excel beyond this expectation will be the *magna cum laude* students. Students who do adequate but not praiseworthy work be designated *satis*. *Non satis* means lacking sufficiency or adequacy.

Inasmuch as you might be fully on board with this grading method in theory, there will undoubtedly be the need to complete a college transcript with either a numeric or traditional letter grade. Traditional percentage grades will be provided and will be readily accessed on the course Schoology page. Additionally, Mrs. Bartko will provide a transcript of that grade to the requesting parent at the end of the year.

**Student Evaluation: Mastery Portrait**

Mastery portrait: Students who are prepared to take this class are typically early adolescents approaching young-adulthood. This developmental stage is an interesting one, brimming with lots of new characteristics. It’s imperative, then, that this course not only provide the academic components necessary to achieve mastery of the content of the class (knowledge) and skills associated with analytical thought; but to also help engage the student in development of their moral virtues. These three aspects of the course would comprise the “learning target”.

At the completion of this course, *cum laude* students will be able to:

* Understand that order and design in nature shows the handiwork of God
* Use the Scientific Method, and apply it to daily life
* Demonstrate understanding of the periodic table and elements
* Understand the concept and model of the atom
* Understand physical and chemical properties, and chemical reactions
* Describe the natures of energy, in various forms
* Understand the relationship between electricity and magnetism
* Understand how sound and light waves behave
* Use the metric system, and convert units

**Student Evaluation: Assignments, Types & Weights**

Mrs. Bartko will communicate with students regarding assignment feedback and grading through the free online grading system, Schoology. The teacher will provide students with more detailed information and access to the Physical Science course page.

Student’s grades will be comprised of:

1. Exams: 40% of the grade
2. Class Participation: 15% of the grade
3. Homework Assignments: 25% of the grade
4. Quizzes, Lab Work, Projects: 20% of the grade

**Student Evaluation:Academic Dishonesty**

Students will often take assessment tests and/or quizzes privately at home. Students are on their honor to abide by [Scholé Academy’s Learning Philosophy](http://www.scholeacademy.com/student-parent-handbook/) which assumes the personal cultivation of Student-Virtues described in the Student-Parent Handbook.

Additionally, plagiarism is a serious and punishable offense. Such assignments will result in a failing grade.

**The Virtual Classroom:**

We will be using the free online “virtual classroom” software provided by Zoom, one of the leading companies that provides such software.  The virtual classroom will provide students with interactive audio, text chat and an interactive whiteboard in which texts, diagrams, video and other media can be displayed and analyzed. We will provide students with a link (via email) that will enable students to join the virtual classroom.

Specific information regarding the technology used by Scholé Academy (including required technology) can be found by visiting the [Technology in the Classroom](http://www.scholeacademy.com/student-parent-handbook/) section of the Student Parent Handbook.

Students will submit documents by scanning and uploading them to their personal computer, then attaching those files as .pdfs to an email. They will submit their work to the Physical Science Schoology assignment page (access granted after enrollment is secured).

**About the Instructor:**

**Danielle Bartko** is an experienced Math and Science teacher, and Orthodox Church Cantor and Choir Director. She taught in public schools and a Montessori based Orthodox private school. She has served the American Carpatho-Russian Orthodox Diocese as a Cantor and Choir Director, and the Orthodox Church in America as a Choir Director. She spent countless summers at Camp Nazareth, first as a camper, and later as a counselor and chant teacher.

She holds degrees in Biology and Music from Lafayette College, and Secondary Teacher Certification from DeSales University. She has taught grades 5-12, and currently homeschools her children. She has experience in a variety of teaching methods, and has taught students with diverse academic needs. She is a lifelong learner, and has enjoyed growing and changing as an educator over the years. Her goal is to inspire her students to become lifelong learners as well.

Her Liturgical music education comes from a variety of coursework in Orthodox Music and Choral Directing. She has taken classes through Christ the Saviour Seminary and the OCA Liturgical Music Department, and independent study with Very Rev. Protopresbyter Michael Rosco and Professors Paul Hilko, George Hanas, Andrew Talarovich, and Jerry Jumba. Whenever she travels and visits a church, she will sneak into the choir loft, wait for an invitation to sing with the choir, and then ask for copies of good music to keep as a souvenir.

She grew up in New Jersey, but now lives in Pittsburgh PA with her husband and two young daughters. When she is not homeschooling her children or teaching classes, she enjoys gardening, jigsaw puzzles, SRS Iconography classes, visiting with friends and family, and going to the beach.