HS COLLEGE-BOUND BLEND

Course offerings 2018–19

Weekly on-site classes: Tuesdays 9:15 AM – 3:45 PM Each Tuesday class supplemented by one or more online sessions later in the week

PLUS:

Online classes open to students around the world

REGULAR BLEND COURSES

30 weeks of instruction: August 2018 – May 2019

FOREIGN LANGUAGE SPANISH II

HONORS SCIENCE HONORS PHYSICS

BLEND SCIENCE PHYSICAL SCIENCE & ECOLOGY

> blend mathematics Algebra II

LANGUAGE ARTS FOUNDATIONS OF WRITING/SHAKESPEARE

> LANGUAGE ARTS ESSAY WRITING & APPRECIATION

ONLINE COURSES 30 weeks of instruction: August 2018 – May 2019

LANGUAGE ARTS

honors literature NOVELS BY WOMEN

Want to learn more?

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SCIENCE

Physical Science & Ecology

This year-long course is designed for students preparing for the advanced high-school-level sciences — e.g., chemistry and physics. It teaches students both vital information and scientific thinking.

Over two semesters, *Physical Sciences & Ecology* addresses a range of essential topics in earth science & geology, astronomy, and ecology, as well as a number of specific topics in physics and chemistry.

This class will comprise two sessions per week:

- one 90-minute session on-site, held on Tuesdays at our location in Bethel, CT;
- a one-hour online class later in the week.

Tests will be provided to parents to administer at home as they wish: open-book, closed-book, as a learning tool, as a grade generator, or in some combination of these.



Texts to purchase

Here are the texts needed for this course:

 Conceptual Physical Science, 3rd edition, by Paul G. Hewitt, John Suchocki & Leslie A. Hewitt

ISBN-10: 00321051734 | ISBN-13: 978-0321051738

 Biology, 8th edition, by Neil Campbell & Jane Reece ISBN-10: 0805368442 | ISBN-13: 978-0805368444



Other materials needed. Your student will also need a "D" ring binder, with loose leaf paper and section dividers.

Workload

Students will be expected to complete approximately four hours of homework each week. Homework will consist of reading, annotating text, watching videos, completing worksheets, and studying.

Learn more at http://hscollegebound.com or email us at info@hscollegebound.com



Specific topics covered

PHYSICS

- Thermal Energy and Thermodynamics
- Heat Transfer and Change of Phase
- Waves and Sound
- Light

EARTH SCIENCE

- Rocks and Minerals
- Plate Tectonics and Earth's Interior
- Shaping Earth's Surface
- Geologic Time—& Reading the Rock Record
- The Oceans, Atmosphere, & Climatic Effects
- Driving Forces of Weather

ASTRONOMY

- The Solar System
- Stars and Galaxies
- The Structure of Space and Time

ECOLOGY

- Populations
- The Food Chain
- Fungi and other Decomposers
- Biomes
- Chemical Cycles: Water, Carbon and Nitrogen Cycles
- Humans and the Biosphere
- the Nitrogen Cycle

CHEMISTRY

- Atomic structure
- The Periodic Table & Representative Groups and Families — Sulfur, Halogen, Nitrogen, Metals
- Bonding
- Radioactivity
- Carbon and Organic Chemistry

Honors Physics



Note: This course does not follow a "Physics First" approach; it is not for students new to science. Most of our students have already completed HONORS BIOLOGY WITH LAB and HONORS CHEMISTRY WITH LAB. Accordingly, they are already experienced with taking lecture notes, reading difficult science texts, following good lab practices, writing lab reports, and so on.

Physics is the study of nature as seen through the lens of energy and matter, and how the two interact. Although we seldom realize it, it's an integral part of our everyday lives. When we drive a car, open a can of soda, turn on a blender, or even just take a walk outside, *forces* are at work on *matter*.

MATH PREREQUISITE

Your student must have completed Algebra II — specifically, the student must be able to properly manipulate algebraic expressions.

An important branch of physics deals with motion and the forces that produce it, as well as the energy involved in the interaction. Yet analyzing and comprehending those forces is often fraught with difficulty, the concepts seeming unclear or even indecipherable. For instance, the laws of physics can often seem counterintuitive: how is it that two objects of different masses fall at the same rate? — Or when a ball is thrown, why

does it start falling immediately — as opposed to traveling horizontally for a while and then starting to fall?

Partly in reaction to the difficulty of physics concepts, high school and even college physics courses often "teach" the content by requiring that students memorize and apply formulas. Students who are whizzes at math or good at memorization do well in such classes; the rest are left confused.

HONORS PHYSICS at The Blend takes a different approach. Our students always begin by experiencing for themselves specific physical phenomena and understanding their underlying principles. Then and only then do they delve into the mathematical conceptualization of those principles and their algebraic applications.

For our students, this approach has two principal benefits:

- The beauty, logic, and elegance of the physical world are obvious.
- So are the formulas.

So in HONORS PHYSICS the students perform experiments and activities primarily to explore mechanics. — At right is a list of the topics explored.

Each student will also be required to keep a lab notebook, which will be routinely collected and corrected. Students will also be given periodic quizzes or tests, both to ensure mastery and to enable parents to generate grades.

Texts for this course:

- Giancoli, Physics, 6th edition
- Hewitt, Conceptual Physics, 10th edition
- BookFactory Carbonless Physics Lab Notebook



Exploring mechanics

- Analysis of Data
- Vectors
- Kinematics (motion) in one direction
- Kinematics in two directions
- Energy, Work and Power
- Dynamics: Newton's Laws of Motion
- Momentum
- Gravity
- Circular Motion

Algebra II Tools for understanding math

Without understanding, no learning takes place, and far too many math programs rely on rote methods and application to problems, with no real understanding. Our course *Algebra II*, by contrast, focuses on the exploration of algebraic concepts to promote profound understanding.

We give special attention, moreover, to the feared word problems, teaching the students proven techniques that eliminate guesswork and guarantee success.

Math for science

One aspect of algebra that is seldom given adequate attention is the math required in advanced high school science, like chemistry and physics. Our Algebra II course addresses such concepts as:

- scientific notation
- proportions and conversions
- solving systems of equations



Workload

This course will require four hours of instruction per week, with an average of 3-4 hours of independent homework.

Materials to purchase

Algebra Modules C-F, Videotext Interactive, notebook or three-ring binder.

Prerequisites

Incoming students should already have some familiarity with fractions, decimals, percents, and basic math. At the same time, we will be delving into such topics — and much more — to help students gain full understanding of them.

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$$
$$x + \frac{b}{2a} = \pm \sqrt{\frac{b^2 - 4ac}{4a^2}}$$
$$x + \frac{b}{2a} = \pm \frac{\sqrt{b^2 - 4ac}}{2a}$$
$$x = -\frac{b}{2a} \pm \frac{\sqrt{b^2 - 4ac}}{2a}$$
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Among the topics explored in *Algebra II*:

- solving linear equations
- graphing linear equations
- solving linear inequalities
- graphing linear inequalities
- operations with polynomials
- quadratic equations (including factorization and the quadratic formula)
- conic sections (graphing quadratic equations)
- complex & imaginary numbers

FOREIGN LANGUAGE

INSTRUCTOR: MONICA KIEHNLE

Spanish II Vocabulary, grammar, pronunciation & culture

Among the many challenges of homeschooling through high school is finding adequate foreign language resources. Computerbased programs often claim that the student will simply absorb the language through repeated contextual instruction. Meanwhile, they provide few explanations of any kind and leave the student unequipped to handle language fundamentals like grammar, usage, spelling, and pronunciation.

Our program

HS College-Bound Blend is proud to offer a high-school-level foreign language program that covers vocabulary, grammar and usage, and Mexican culture. *Spanish II* is taught by Monica Kiehnle, a native speaker born and raised in Mexico, and this class continues the successful course she delivered in 2017-18. [continued]



Monica strongly believes that the best learning happens when students are having fun. So she makes creative use of games and team competition to engage students and prevent tedium. Most important, she models correct pronunciation and works with students on reproducing the trickier sounds (like the Spanish "rr").

The class takes place over two semesters of 15 weeks each and includes:

- two weekly class sessions one in-person class and one online;
- weekly reading assignments, memorization, or writing exercises;
- projects requiring research or translation followed by in-class student presentations;
- interactive classes that make use of songs, dialogues, and pronunciation exercises;
- classroom activities and games to make the learning engaging.

Course content

In Spanish II, students will:

- master the most common expressions in Spanish—the ones people use practically every day;
- practice the most common Spanish verbs, conjugations, and tenses;
- master the most common (and useful) nouns and adjectives, along with workouts on number, gender, and agreement;
- play grammar and vocabulary games that require both speaking and writing Spanish;
- take part in simple conversation with other students;
- read excerpts from Spanish novels and stories;
- watch excerpts from Spanish movies;
- sing in Spanish.

LANGUAGE ARTS / THE BLEND WRITING SERIES

Foundations of Writing

Our grammar-&-*usage bootcamp, with workouts in vocabulary* & *reasoning* — **PLUS:** *Close reading of Shakespeare*

This course puts in place the skills and knowledge foundational to clear writing. It serves as a precursor to our writing course *Logical Communication*.

How it works

Both the on-site and the online classes are 90 minutes each:

- Onsite: Language. In the on-site class, students master language fundamentals.
- Online: Shakespeare. In the online class, they are introduced to close reading of great literature and all the attendant skills.

1) English fundamentals

To produce clear writing, students must feel at home with English sentence structure, know the rules of English punctuation, and also have at their fingertips the vocabulary they need to express nuanced thoughts. This course, accordingly, enables students to:

- Workout with Workout
 Workout with Wordds
 Workout with Workout
 Workout with Workout

 Workout
 Workout with
 Workout
 Workout

 Workout
 Workout
 Workout

 Workout No. 1
 Workout No. 2
 Workout No. 2
- master the most important points of English grammar and usage;
- perceive with little effort both the *structure* of a sentence and how proper *punctuation* enhances that structure;
 - employ with dictionary-precision a rich arsenal of English words.

Students in *Foundations of Writing* undergo a kind of boot-camp in English grammar, usage, and punctuation — intensive training that relies on methods and materials created by the instructor. Grammar is taught not for its own sake, but as a requisite for important writing tools and for understanding how the language works. And for vocabulary work, students use exercises designed by the instructor; they're called *Workout with Words*. Through these exercises, students learn to distinguish a *misconception* from a *misnomer*, a *compliment* from a *complement*. They learn to distinguish *reticent* from *reluctant; imply* from *infer; simplified* from *simplistic; imminent* from *eminent; continual* from *continuous*, and so on. [continued]

The Grammar Intensive

INSTRUCTOR: ROY SPEED



2) Close reading of great literature — online classes

In additional to studying the essentials of English, students in *Foundations of Writing* undergo intensive study of Shakespeare, reading three plays in their entirety and in great depth:

- Romeo & Juliet (10 sessions)
- Hamlet (10 sessions)
- Macbeth (7 sessions)

In the process, students learn important study skills like close reading and annotation. Equally important, they learn to get beyond the literal meanings of words to the vast landscapes of meaning *behind* the words. They also discover *why we read great literature*.

Workload & texts

Students in *Foundations of Writing* typically spend no more than 3 to 4 hours per week on homework. All grammar materials are provided by the instructor; Shakespeare texts must be purchased separately.

ONLINE - THE BLEND WRITING SERIES



INSTRUCTOR: ROY SPEED



Logical Communication

Writing efficiently and with a clear train of thought

To produce clear writing, students must first produce clear thoughts and ideas, and then arrange them into a logical flow. This course, accordingly, focuses on the *thinking* part of the challenge. It serves as both the follow-up to *Foundations of Writing* and the precursor to *Essay Writing & Appreciation*.

Among the skills this course builds in its students:

- analyzing fine essays 1) for meaning, and 2) to understand how it's done;
- discerning in an essay the flow of an argument or the progression of ideas;
- mindmapping points and ideas on a given topic;
- writing a draft based on a mindmap;
- creating strong openings & strong conclusions;
- using punctuation and sentence structure as writing tools, to enhance impact;
- distinguishing and using the different types of transitional devices and expressions.

The course introduces students to some of history's finest essayists — including Michel de Montaigne, George Orwell, Washington Irving, Robert Louis Stevenson, Max Beerbohm, H. L. Mencken, C. S. Lewis, Danny Heitman, Oliver Sacks, and more. It also makes use of:

- great speeches from world leaders;
- casual essays & articles from recent decades;
- examples of fine literary analysis and fine science writing;
- cogent editorials and opinion pieces;
- writers' thoughts on writing.

A closer look

Logical Communication exercises students' brains in ways entirely new to most teens. Basically, it develops their ability to *perceive the flow of ideas in writing*. Developing this ability leads to a core writing skill — one that's underestimated in academic writing training and, partly for that reason, underdeveloped in many adults — and that ability is perceiving the train of thought in one's *own* writing. The ultimate aim is that our students, in their own writing, achieve logical flow: their writing is logically organized, is highly readable, and forms a cogent argument.

This one ability is the key to writing effective essays of all kinds not just literary analysis, but college admissions essays, research reports, and so on. It is also critical to writing effective speeches, designing effective presentations, and crafting many other types of communication.

Writing assignments

Students in this course produce writing of several kinds:

- Brainstorming/mindmapping. The students produce mindmaps — basically, sketching ideas for essays.
- Essays. They write at least three major essays.
- Editing. They revise their own work, sometimes repeatedly, with each draft targeting a different kind of improvement or applying a different kind of editing tool.
- Writing & editing workouts. Students carry out targeted writing exercises, and those exercises take many forms—for a single essay, students might be asked to produce three *different* openings, each employing a different strategy for engaging readers. — Other exercises involve:
 - *sentence editing* re-structuring sentences to improve readability, alter emphasis, or use parallel structure;
 - *paragraphing* re-working paragraphs to strengthen their impact, clarity, or logical unity.



Essay Writing & Appreciation

Reading great essays, understanding the form, and finding your own voice in writing

The emphasis of this course is *insight* — those fleeting, intuitive leaps we all make at some point, magic glimpses of understanding and even wisdom. In our daily lives, we seldom capture them, record them, or explore them, but they make for splendid essays. Our students, accordingly, are encouraged to notice and record their own insights and explore them in the form of essays.

The problem with the academic approach

In schools, the essay is usually taught to students as a classroom artifact — a necessary academic chore, one that is properly conducted in a rigid form, like the five-paragraph essay. Equally alarming, students are usually asked to write essays before they've actually *read* any.

In the real world, essays provide a forum for sharing insights or discoveries or for discussing controversies. In virtually every field of human endeavor — science, economics, history, law, foreign policy, you name it — the leaders or pioneers in the field invariably turn to the essay as the medium of choice for discussing new developments out on the frontiers of discovery. So in every field, the most important discussions and debates take place in the form of essays.

Understanding the form

It's no accident that this course is called Essay Writing & *Appreciation*: our students read some of the finest essays ever written and come to a profound appreciation of what can be accomplished in this versatile form. The purpose of the course is to equip students to write essays themselves — to express their thoughts and insights in writing — and in so doing, prepare to participate in discussions conducted by leaders in whatever fields our students choose to pursue.

Our approach to writing emphasizes the following features, all closely related:

- logical flow;
- clarity of expression;
- economy of expression;
- impact;
- insight.

HONORS LITERATURE

Novels by Women

Great works from 1800 to the early 20th century — all by women

Students in this course learn how to read novels and, along the way, practice a core human skill: *empathy*.

One of the best reasons for reading great novels is that they afford rare opportunities to eavesdrop on characters' thoughts and feelings as they are being experienced. And when you begin to identify with a character, you discover what it feels like *to be someone else*.

A fine teacher of literature at Northwestern University recently wrote:

[In novels,] readers watch heroes and heroines in the never-ending process of justifying themselves, deceiving themselves, arguing with themselves. That is something you cannot watch in real life, where we see others only from the outside and have to infer inner states from their behavior... [Reading an account of] a quarrel, we experience from within what each person is perceiving and thinking. How misunderstandings or unintentional insults happen becomes clear. — This is a form of novelistic wisdom taught by nothing else quite so well.



How our students learn

Students' class activities and homework include:

- reading and analyzing essays by great writers;
- maintaining a notebook of observations & insights;
- sketching out (or mindmapping) essay ideas;
- drafting their own essays;
- revising those essays;
- workouts with tools for efficient editing;
- reading and critiquing other students' essays.

INSTRUCTOR: ROY SPEED



[continued 🖝]

The women on our reading list are all astute observers of both human beings and the human condition, and their novels give students a chance to experience the perceptions, concerns, and values of other eras and other societies. To understand those novels, students must suspend their own 21st-century values and ways of looking at things and, for a while, entertain perspectives quite different from their own. — Such reading becomes an exercise in understanding historical and cultural context, expanding their imaginations, and developing their capacity for insight and empathy.



Assignments. The primary activities in this course are 1) reading the novels on our reading list (see right) and 2) class discussion of those readings. Students will also learn:

• *close reading and annotation skills* — From time to time, students will scan their annotated pages from their books and submit them to the instructor.



- **vocabulary** Students will list new words they're encountering in their reading and master those words.
- **writing** Students will write two analytical essays, one per semester, will be coached on writing effective literary essays, and will learn the essentials of MLA format. They will also read and critique one another's essays.

Students will likely read around 70 pages per week (30-some-odd pages from one class to the next). All works will be introduced with a historical perspective, and they will be read in a sequence roughly corresponding to the difficulty and complexity of the prose style.

READING LIST

- Mary Shelley: Frankenstein
- Lydia Chukovskaya: Sofia Petrovna
- Isak Dineson: Out of Africa
- Kate Chopin: The Awakening
- Charlotte Brontë:
 Jane Eyre
- Jane Austen:
 Pride & Prejudice
- Edith Wharton: The Age of Innocence

About the instructors

Diane Speed SCIENCE: Physical Science & Ecology

Diane is the founder of The Classical Kids Network and co-founder of The Blend. She has a B.S. from Drexel University, majoring in biology with a minor in chemistry. Before marrying, Diane worked in laboratories at:

- SmithKline Pharmaceuticals (antibiotic development);
- Temple University Research labs (hemophilia/clotting factors);
- the Philadelphia Water Department (water purity).

This is Diane's fifth year teaching science to homeschooled highschoolers.

Monica Kiehnle

SCIENCE: Physical Science & Ecology SCIENCE: Honors Physics MATH: Algebra II FOREIGN LANGUAGE: Spanish

Monica received a degree in Industrial Engineering in Cuernavaca, Mexico. For seven years, she worked for Orto de Mexico, a manufacturer of control instruments and accessories for electrical transformers. In addition to various engineering responsibilities, her job included supporting customers from the United States, Mexico, South America, and Europe in matching accessories for transformers to the desired electrical characteristics.

In high school, Monica fell in love with math and physics. She decided to pursue engineering in college as a way to combine the analysis of the physical world with the practical application of theory. After moving to the United States, Monica began homeschooling her children with the aim of imparting a love of learning with a deep, profound understanding of all content. Monica eschews superficial learning and rote memorization and brings those values to her teaching of both *Spanish* and *Green Math* at The Blend.

Roy Speed

LITERATURE: Novels by Women LANGUAGE ARTS: Foundations of Writing/Shakespeare LANGUAGE ARTS: Logical Communication LANGUAGE ARTS: Essay Writing & Appreciation

Roy is a writing consultant in the corporate world. As a homeschooling dad, he has both worked with his own children and, for more than a decade now, been teaching classes to homeschooled students on history, literature, Shakespeare, writing, and grammar. Among his recent course offerings: *History & Literature of the Ancient World; Novels by Women; History and Literature of the Middle Ages; Logical Communication;* and *Essay Writing & Appreciation*. His online classes in Shakespeare have been acclaimed by homeschooling students and parents across North America, and in high schools around the U.S. his articles on key study skills—like annotating a text—have been assigned by English teachers as required reading for their students.