

# AP Physics 2 Summer Work Overview

Students,

This summer work serves to prepare you for AP Physics 2 and also for me to gather information about you as a student. Below you will find the information about the components of the summer work and explanations for them and how they are graded. Expect to spend a minimum of 300 minutes (5 hours) on this summer packet.

## 1. [Letter to Parents](#)

Please deliver this letter to your parents.

## 2. [Technology Introduction \[10 min\]](#)

This is important because it has resources for you for the rest of the summer work. Read through the introduction and make sure you can sign into all of the technologies we will be using. We will also be using these technologies throughout the year.

The following items are available online through Google Classroom. You should have been added automatically, so to access these things, go to [classroom.google.com](https://classroom.google.com), sign into your school Google account, and navigate to AP Physics 2 classroom. If you cannot do this, please email Mr. Vitale at [vitaleti@clearviewregional.edu](mailto:vitaleti@clearviewregional.edu). Please check that you are able to access this BEFORE the end of the summer.

## 3. [Syllabus and Lab Safety Contract \[10 min\]](#)

Please [e-sign and return](#) both of these on the first few days of school (your parents also need to sign these). These are Google Forms.

## 4. [Equation Sheet](#)

Please print this equation out and bring it with you to class on the first full week of school. Feel free to print this out on cardstock, colored paper, or any paper of your choice. We will be using this equation sheet everyday, and you may use this sheet on any classwork, quizzes, or tests. Important Note: If you do NOT have your equation sheet, you will not have the equations and they will not be written on the board for students who do not have an equation sheet. Students that cannot print this will be provided ONE sheet at the beginning of the year. A copy of the sheet will be provided on Google Classroom for students to print a new one during the year if they need to.

## 5. [Beginning of the Year Survey \[10 min\]](#)

In the Beginning of the Year Survey, I ask you questions about your preferences as a student. Please respond to these questions honestly and completely because I use them to tailor the class to the students. This Google Form can be accessed from Google Classroom (information is in the Technology Introduction section).

## 6. [“How to Succeed in Physics” Reading and Reading Check \[60 min\]](#)

Please read “How to Succeed in Physics” PDF provided in Google Classroom and answer the questions in the Google Form “How to Succeed in Physics Reading Check.” The purpose of

this assessment is to arm you with tips and tricks to be more successful in physics from the start. **Please note that this is a graded assignment.**

**7. [“Calculator Review” \[20 min\]](#)**

Please read “Calculator Review” PDF. This document specifically helps students avoid the most common mistakes that they make with the calculator.

**8. [Honors Algebra 1 Review and Diagnostic \[30 min\]](#)**

Take the Honors Algebra 1 Diagnostic which is a Google Form on Google Classroom. While you will be scored on this diagnostic, it will not be factored into your summer work grade, so please answer the questions to the best of your ability without using outside help so that I can get the best understanding of your algebra skills.

**9. Chapter 1: The Nature of Science and Physics [160 min total]**

Read the entirety of [Chapter 1 from the OpenStax - College Physics](#) textbook (how to access is on the Technology Introduction). For each section (except 1.4 Approximation) there is a corresponding Google Form that **counts towards your summer work grade**. You may take the Google Form assignments as many times as you need to in order to get a perfect grade. The purpose of these assignments is to prepare you for the habits and skills that we will be using EVERYDAY in an AP physics class.

For each section there is an accompanying YouTube video that I would like you to watch which will help explain the reading. I recommend watching them before taking the Google Forms.

**a. 1.1 Physics: An Introduction [40 min]**

- Read Ch 1.1: Physics: An Introduction
- Watch [“Fact vs. Theory vs. Hypothesis vs. Law... EXPLAINED!”](#) YouTube video.
- Take Google Form called [“1.1 Models, Theories, and Laws”](#)

**b. 1.2 Physical Quantities and Units [40 min]**

- Read Ch 1.2: Physical Quantities and Units
- *Optional:* Read [“Metric Units Review”](#) Google Doc
- Watch [“Why the metric system matters - Matt Anticole”](#) YouTube video.
- Take Google Form called [“1.2 Physical Quantities and Units”](#)

**c. 1.3 Accuracy, Precision, and Significant Figures [60 min]**

- Read Ch 1.3: Accuracy, Precision, and Significant Figures
- *Optional:* Read [“Significant Figures Review”](#) PDF
- Watch the [Khan Academy videos on Significant Figures](#) (4 videos)
- Take Google Form called [“1.3 Accuracy, Precision, and Significant Figures”](#)

**d. 1.4 Approximation [20 min]**

- Ch 1.4 Approximation from the OpenStax textbook.
- Watch [“A clever way to estimate enormous numbers - Michael Mitchell”](#) YouTube video

# Summer Work Checklist / Grading Explanation

The following assignments **MUST** be completed as part of the summer work, but **DO NOT COUNT** towards your grade.

- Give “Letter to Parents” to your parents.
- Read “Technology Introduction” and make sure you can get on Google Classroom
- Read the Syllabus and the Safety Contract, sign them and have your parents sign them
- Print out an equation sheet and have it ready to bring to class
- Take the “Beginning of the Year Survey”
- Take the “Algebra 1 Diagnostic”
- Read Ch 1.4 of the textbook, watch the accompanying YouTube video

The following assignments **MUST** be completed as part of the summer work, and **COUNT TOWARDS YOUR GRADE.**

- Read “How to Succeed in Physics” and take the “How to Succeed in Physics Reading Check” Google Form
- Read Ch 1.1 of the textbook, watch the accompanying YouTube video, and answer the Google Form
- Read Ch 1.2 of the textbook, “Calculator Review,” watch the accompanying YouTube video, and answer the Google Form
- Read Ch 1.3 of the textbook, watch the accompanying YouTube video, and answer the Google Form

## Grading

The following Google Forms will be graded for correctness, calculated out of the total points, and entered each as a daily grade.

- 1.0 How to Succeed in Physics Reading Check [out of 9 points]
- 1.1 Models, Theories, and Laws [out of 5 points]
- 1.2 Physical Quantities and Units [out of 19 points]
- 1.3 Accuracy, Precision, and Significant Figures [out of 25 points]

For example, if you scored a 8/9 on How to Succeed in Physics Reading Check, you would get an 89% as a daily grade. There are a total of four daily grades.

## Letter to Parents

It is with great pleasure that I welcome you and your children to a brand new school year. I am specifically excited to be teaching such a talented and intelligent group of students. In this letter, I hope to fully introduce myself and inform all parents about what they can expect from AP Physics 2.

My name is Tim Vitale, and this is my sixth year teaching physics at Clearview Regional High School. I earned my bachelor's degrees in both Physics and Secondary Education and a master's degree in Teacher Leadership with a concentration in Educational Technology from Rowan University. I belong to professional groups such as Rowan's PhysTEC and UPenn's QuarkNet which improve my practice by connecting me not only with local colleges but also to physicists and other physics teachers. I hope to bring all of these qualifications as well as my passion for physics and teaching to the classroom.

AP Physics 2, in my opinion, covers the newest and most exciting topics in physics. Instead of learning about mechanics (forces, energies, motion), students learn about electricity, magnetism, light and sound, quantum, atomic and nuclear physics and more. Even more exciting is the fact that this course is taught through the lens of algebra, so it is accessible to a wider group of students. This class is filled with fun demonstrations, labs, and many hands-on activities that students may connect with everyday phenomena outside of the classroom.

In addition to rigorous coursework, students have the option of registering for the CollegeBoard AP Physics 2 Exam. This exam costs about \$95 and students must register well before the date of the exam, which is Friday, May 10th, 2019 at 12:00 PM. I will make an announcement to both parents and students about when registration is available and how to go about registering your child. While taking the AP test is optional, I strongly recommend all students take the exam if possible. Most often, colleges accept scores of 3, 4, or 5 and offer transferable college credits. Colleges typically count AP Physics 2 as either a general lab science or at the very least an elective course. Other benefits of taking the exam include experiencing a college level exam and the potential to stand out in the admissions process. Please also know that on the off chance that your child does not perform well on the exam, you have the option of not sending that particular score to colleges. Students' scores on the AP exam are not factored into their grade in their class nor their GPA.

Despite the challenge that comes with taking AP Physics 2, I want to assure you that my first and foremost goal for your children is their success both in my class and in future science courses. I am available for questions and extra help after school or during prep periods upon request. Students and parents may also e-mail me with any questions or concerns they may have. I want both the parents and students to know that they are both fully supported.

I appreciate your support as we transition into an exciting new start for the 2018-2019 school year. I look forward to meeting you at Back to School Night (Date TBA).

Sincerely,

Tim Vitale