Course Overview - Virtual Learning Academy (VLA) Physics
2020-2021
💯Instructor - Doug Forrest 💯
Email - doug_forrest@plsd.us Google Classroom code: **jlv76gf**
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Course Overview

Welcome to the VLA version of phsyics! Physics is a fundamental science that often serves as a basis for other sciences such as chemistry and biology, so it's a bit odd in high school that it's often taken by juniors and seniors. The focus of the course will be for you to demonstrate the process skills, lab skills, and content understanding to become a scientifically aware citizen and realize how physics is something you use every day. My hope is for you to become better at critical thinking, understanding scientific claims and uncertainty, asking scientific questions and to be able to use your skills to test those questions you do have.

Course Objectives

By the end of this class, you [or your child] will be able to:

- Demonstrate active learning online (or in class) by participating in synchronous class sessions, asking questions about activities and assignments, and completing asynchronous assignments.
- Explain possible errors and uncertainties in lab experiments as well as compare outcomes of online simulations with likely outcomes in a hands-on lab.
- Represent scientific understanding in multiple ways including graphically, with diagrams, by using data tables, and with verbal or video explanations.
- Communicate an understanding of content topics in written form and verbally (via videos or conferencing). Content will be elaborated later, but includes the topics of: Experimental Design and Scientific reasoning, Kinematics (1-Dimensional motion), Vectors and Trigonometry, Forces and Newton's Laws, Momentum, Projectiles and Circular Motion, Energy and Work, Electrostatics, and Electric Circuits
- Apply your understanding of physics either with building projects and design challenges (if in person) and/or independently chosen research projects (if we have remote instruction).
- When presented with a traditional in-class activity, students will be able to propose or design a remote instruction alternative that will allow them to gain a similar understanding.

Logistics

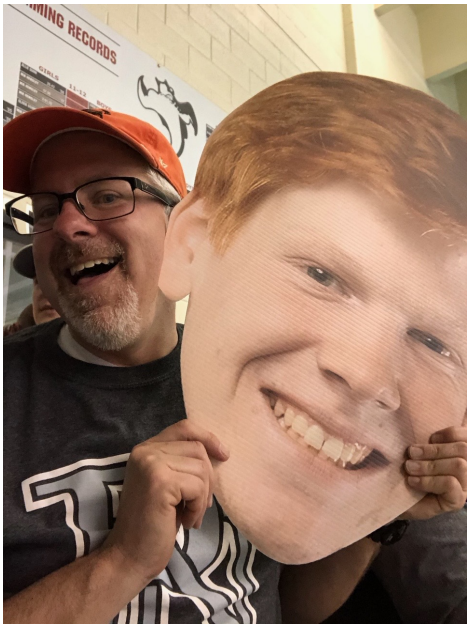
Sunday evening	Assignments/agenda for the week will be posted by this time. I'll actually normally post lesson plans every two weeks
Monday, Thursday	We'll have a synchronous (all being on at the same time) Google Meet from 2:30 until 2:55. I can go later if needed.
Wednesday	I'll respond to Remind messages, but won't have office hours today
Tuesday, Friday	I'll have online office hours from 2:00 - 2:55 PM to answer any questions on your assignments. Alternatively I may use this time to contact you if I'm concerned about your work or want to give you more individual feedback.

- **Virtual assignments (M, T or Th, F) → Due Tuesday following the week assigned at 12:01 PM unless noted otherwise**
- **Tests and/or quizzes must be taken in a specific window of time, and you'll have at least a week's notice of this. At times I may quiz you verbally, so we would need to make an appointment for that.**

Please note that the virtual assignments are things you should **attempt on the day they are assigned**. You may complete them early of course. The reason these virtual assignments aren't due until the Tuesday of the following week is so that each of you will have multiple chances to ask questions or meet with me in Office Hours or other arranged times before the assignment is due. Don't plan to use synchronous times for that help though, as I'll normally have a planned activity during those times.

Teacher Bio

Hi, I'm Doug Forrest! This is my 27th year teaching in Pickerington and I'm really excited to have you in VLA Physics this year. I really enjoy getting to know my students as individuals and still communicate with students from every year that I've taught. If any of you have Mr. Oakes for math - I had him as a freshman my very first year teaching! The photo to the right is of me holding up the FatHead of a student last year when I went to his senior night swim meet - he did NOT expect that! I love to be able to attend student events (although I know there will probably be a lot of limitations on that this school year) and I like knowing what your interests are. I'll ask you about this in a questionnaire in the first week of class.. Click on the video link here to learn a bit more about me! [VLA Introduction video]



💻 Course Communication	
Class announcements and weekly agenda	I'll post these in our Google Classroom, and also on the 'Physics' page of my website, which is a public site that parents can view and is linked here [https://www.pickphysics.com], you'd go to the ' VLA Physics' drop down menu. I'll also send out Remind messages. To sign up for the Remind account (parents are welcome to do this as well as students) see this document. [Link to Remind form on my website]
Email/Personal Messages	There are two really good ways to reach me. ● The first is via the Remind App, with a link to the same form as above [Remind sign up]. This is an application you can put on your phone, which I encourage, and/or your ChromeBook. The nice thing about Remind is that I can communicate with entire classes of students, smaller groups, or with you as an individual. You can also send me messages through here, which I normally check until 10 PM on school nights. Also, all phone numbers remain anonymous with Remind, even

	if you have it push to your phone as a text message. ● The other good way to reach me is through email. My email is doug_forrest@plsd.us, and I check it several times a day including at the start of the school day. I normally don't check email in the evenings, so if you wish to contact me then, use Remind. If you leave a private message for me in Google Classroom, I'll get that, but it's not as quick as either Remind or email. Note: It may take up to 24 hours to receive a reply during the week and 48 hours on the weekend, although normally I'm a lot quicker than that, especially with Remind. So try not to wait until the last minute to send a message if you need help. Early in the year, I'll ask you on a Google form if you'd like to participate in a "phone tree" or GroupMe. Oftentimes, students really benefit from contacting their peers outside of class, but I don't want to make anyone uncomfortable sharing their information.
General Questions	If you have a question about the course or an assignment, I encourage you to post your question in the Google Classroom "stream." The stream is visible to the entire class community, so I encourage you to both ask and answer questions there. If a classmate asks a question and you know the answer, please jump in and help them out! If we end up having a "phone tree" or GroupMe, you can also use that to message them, but you won't get the benefit of the entire class seeing the message. Also, please use our synchronous Google Meet times and the offered "office hours" as a place to ask questions. Since students are expected to be there for help, it can be a great place to ask general questions.
Online Discussions	Online discussions are an important opportunity for you to interact with and learn from your peers - normally small (lab) group discussions, presenting whiteboards, and whole class discussions are a primary way science classes learn, and I want to try and model that as much as possible for us during remote instruction as well as continue those things when we are together in person. The class will regularly engage in conversations about the course content and lab simulations. You will receive credit for your participation in these academic discussions through several Habits of Mind learning standards in synchronous online meetings and online asynchronous discussions. You are expected to post thoughtful, respectful, and well-written responses to the discussion questions that are posted in the Google Classroom Stream, and reply thoughtfully to at least two other students per discussion.

💬 Participation Policy

You'll need to be present in all scheduled synchronous meetings (Mondays and Thursdays at 2:30 PM), or let me know via message why you aren't there - preferably before the meeting - so I can note your attendance. I expect you to ask and answer questions during these, and hope you can also offer your own insights and experiences. You'll be expected to participate by attempting all assigned work as well, and to let me know if you have problems. Often I'll ask a few short questions in a Google Form to check for your understanding or if you have questions. It'll

also be **critical** for you to discuss online simulations and activities we do, often as a part of the class, and later in the year we'll be using something called Google Meet 'Breakout Rooms', where you can work with a smaller group of people. Although our class is actually quite small (only 9 students) so we might not need Breakout Rooms. Science is truly a collaborative process, and we need to use each other to help us develop a deeper understanding even though we are physically apart. I care far less about your lab/simulation results than I do about how well you can analyze those results and discuss possible errors and uncertainties of the simulations, and often the best ideas come from discussions with your classmates.

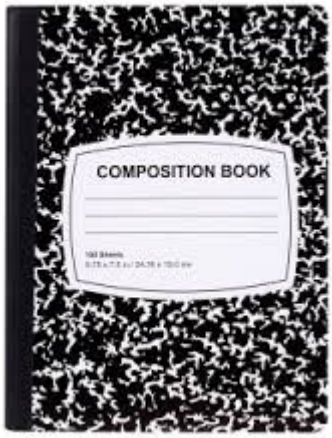
At the end of each quarter, I'll assign you a Performance Rubric where you evaluate your participation and involvement throughout the quarter as related to the Habits of Mind standards, and I give specific feedback to you. Part of that Rubric will also be for you to also evaluate ***my*** participation, feedback and performance.

📚 Required Texts, Materials, and Online Accounts

We'll obviously be using a lot of online resources this year, but these are the things you'll need to start off. I'll get you another document with tutorials about other applications, websites, and accounts in a little while, but these are critical to start. We'll end up getting signed up for these (for the ones that need an account) over the first few weeks of class and learn to use other tools, applications, and websites as we go along. I'll always try to provide a video tutorial and/or online resources for when we use something new.

- Our primary reading source will be the Physics Classroom. This has easy to understand text in their Tutorial section, as well as practice problems, Interactives (lab activities) and Concept Builders. Each student will sign up for an account for the Concept Builders a few weeks into the course, which will make it easier for you to do them at your own pace. At times I may ask you to read from other sources or a PDF document, which I'll post on my website and in Google Classroom.

- You'll need your ChromeBook and something to record timing data, such as the stopwatch on your phone. There's also online stopwatches if you don't have a phone with one. My intention is to provide a 'Lab Pack' to each student to help you actually collect some data at home. I've been going to Dollar stores and Amazon, and as of now I think the pack will contain a ruler, string/twine, a tape measure, a protractor, an a pipet to measure volume. You should have somewhere organized to write down and record your work, as often in physics it's easier to write some things down by hand and take a picture of your work than typing out your work. Your lab fee will provide for a quad-ruled composition book similar to the one at right, so you do NOT need to buy one of these. Right now I still need to figure out how to get you the 'lab packs', but we won't be using things from it in the first week.



- You'll need to sign up for a Remind account [Remind Sign-Up] as stated earlier.

- Your code for our Google Classroom is [**jlv76gf**] → Note that the first five characters are letters, and only the 7 and 6 are numbers. Here's a link to that Google Classroom as well. I can't share the Google Meet code on this document, as it's going to go on my website which is open to the public.

- I'll need to create an account for our Standards Based Grading gradebook if we go that route. (See grading section). If we proceed, at some point you'll need to show evidence of being able to log in to that account. For right now, you can overview the site here: SBGBook

Schedule

Each week or two, I'll provide you with a syllabus on Google Classroom and on my website for upcoming assignments. However, you can get a general idea of what we'll be doing with the units shown below (which is subject to change!)

- **Synchronous learning → On Mondays and Thursdays from 2:30 PM - 2:55 PM. I'd honestly like longer than this, but over half of the students have other VLA class schedules with at least some time overlap, and I worked out this time as being open by coordinating with other teachers.**
- **Assignments → Due Tuesday following the week assigned at 12:01 PM, but you should start working on them on or before the day they are assigned in the syllabus**
- **Office hours are from 2:00 - 2:55 PM on Tuesdays and Fridays, although you are free to contact me through Remind or email at many other times**

Overall content and layout of the course is shown below, with topics in the order I think (as of August 25) that will make the most sense to students

- Introduction, Experimental Design, Graphing and Data Representation, and Scientific Modeling and Methodology
- Using vectors and Trigonometry
- Forces, Newton's Laws, Free Body Diagrams and Freefall
- Momentum, Impulse and Collisions
- 1-Dimensional Motion, Kinematics Graphs, and Mathematical Applications (both constant velocity and accelerated motion (3-5 weeks). *NOTE: This will likely cross from 1st semester into 2nd semester.*
- 2-Dimensional Motion and Universal Gravitation
- Energy Conservation and Transfer
- Charge and Electrostatics
- DC Circuits

A complete list of the standards and overall goals for each topic are here, based on experience from last year. However, they're subject to change since we want to be fair to students and are unsure how the hybrid, completely virtual, or completely in-person instruction will look this year. Students and parents can go here Standards for Standards Based Grading , or to my website under 'VLA Physics files'.

Grading Policy

I'd like to use something in this course that I've used the past two years in my first-year Physics courses called Standards-Based Grading (SBG). However, to do this I need your input and understanding so we'll really need to have a detailed class synchronous discussion within the first week or two of the course. If students agree to using SBG, it'll probably look similar to last year, and I'll attach a document for that here [Standards based Grading Policy 2019-2020]. I'll post this year's final SBG policy after our discussions.

Highlights of last year's SBG are as follows:

- Each graded assignment has standards that will be listed on that assignment. All standards will be scored out of 10 points, and you normally will be scored a 10, 8, 6, 5 in each standard or a 0/- only if you did not make an attempt. Large assessments, such as a test, might have four standards. Other assessments, such as labs or an online discussion or a major project, might have anywhere from one to five standards depending on the amount of detail in the assignment.
- Standards will include (i) Content Standards, (ii) Habits of Mind Standards to assess participation and involvement, and (iii) Lab Skills, Scientific Reasoning, and Technology Skills Standards.
- For most standards (Content and Habits of Mind), your current grade in each standard will be an average of your most recent score in that standard and your highest score in that standard. For Lab Skills standards, your current grade in each standard will be an average of all your scores in the standard and your best score in the standard.
- Sample rubrics for what it looks like to score a 10, 8, 6, or 5 in a standard are included in the SBG document, and if I will use a rubric for a specific assignment I'll include that in the electronic version of the assignment.
- The SBGBook gradebook will give you a current overall average based on the standards we've assessed up to that point, and once a week I'll update Infinite Campus to reflect your current grade in SBGBook. Infinite Campus will also have a note directing parents to SBGBook if they wish to see more details.
- For me to get you timely feedback, I need to have graded assignments turned in on time. So please get assignments in when they are due (often Tuesday at noon for our VLA class) - I normally will have clear due dates for all graded assignments and it won't be a short turnaround such as just a day's notice. For tests or quizzes, you'll need to take these during the testing window provided, which will be clearly stated. Whether that's a synchronous verbal quiz, on Illuminate, or as Google Form/Google Quiz will depend on the assessment. For other assignments, you'll only be able to earn up to an 8/10 on any standard if they are submitted late, or a 5/10 if you submit the assignment after I've handed it back - this gives me the incentive to get you feedback and return things quickly - unless you contact me well in advance (not just 10 minutes!) to explain why you can't complete the assignment. Remember for Google Classroom assignments, to click 'submit'. Early in the year I'll try and have small assignments and try and be flexible if there are technology issues, but as the year moves on I'll certainly need you to submit assignments on time for full credit.
- Retakes. You can submit to reassess up to one standard a week. Last year I had a hard copy of a form for this, and this year I'll be making a Google Form, **although for now this is a PDF** [Reassessment Request Form]. You can download a copy and type in your request using Kami, and then send that to me via email or a private message in Google Classroom. Generally retakes would be for content standards and, less likely, for lab skills standards since we'll be having assignments with those all year. Since for most standards your current score is an average of your best and most recent score, retaking a standard can be very helpful. Requests for retaking a standard will need to be submitted within 48 hours of when you get an assessment turned back to you, and my feedback on the form will let you know what work you need to do to attempt the retake as well as a time for doing so.

💡Student Code of Conduct

Remote instruction generally isn't easy for students, and we need to really help each other out. It's going to be important to have proper conduct when we're interacting online, and to be respectful, kind, and understanding of each other. You'll actually be evaluated on this to an extent in the Habits of Mind standards each quarter in the Performance Rubric mentioned earlier. If students act inappropriately online, I'll try to speak (via phone call or Google Meet) with the student first, contact a parent, and if needed contact an administrator. Normally I don't have a problem with this, but I do want to be clear that we need to be professional and courteous when interacting with each other - that goes for me too!

It's a lot easier for students to plagiarize (copy) others' work with remote instruction, but it's absolutely not correct

to take credit for another's work. My job as a teacher is to help you learn and understand the world around you through physics, and I can't do that if you misrepresent what you know. Early in the year we'll have a synchronous online discussion about Academic Integrity (or, if you're a pessimist, Academic Misconduct). It's really important, and often students going to college get into trouble by not understanding that. As I said, we'll definitely spend time on this topic early in the year. If you have questions about what resources are allowed for an activity, whether something is supposed to be individual work or working with other students, or anything else that comes up and you're unsure if it's academically appropriate, please ask me first! I don't want to have any "gotchas" and I want us to all have a common understanding of academic integrity.

When we have synchronous (all at the same time) online Google Meets (right now scheduled for Mondays and Thursdays at 2:30 PM - 2:55 PM), I'll need you to be there at that time unless you contact me ahead of time. Normally it's nice if we can show our faces, but I'm not sure if that should be a requirement or not? Maybe that's one of our first discussion points. Obviously school rules apply when you're working as a student online (no profanity, inappropriate Internet searches, etc.). Again, I'm not anticipating any problems, but I'd like to avoid any potential problems as well.

As a teacher, I need to do my best to help you instructionally, and while I'm not available 24 hours a day, I will respond as quickly as I reasonably can to your questions and I'll try and be flexible when it comes to online instruction - we ALL have a lot to learn. For synchronous sessions, I'll try and make it worth your while to be present and have interactive activities, labs, and discussions as well as answer questions. I'm open to suggestions and criticism if you think the instruction isn't working well for you, although there are limits on what I may be able to change.

🙋‍♀️ Attendance Policy

As part of the VLA, you'll need to log into the student portal of Infinite Campus EACH DAY and click the Yes, I'm here button for all of your classes each day we are having school. You can do this for all of your classes, once each day. Here's a video made by the district to give you some more details.

Teachers will check to make sure students have done their work, and if so they'll let the student attendance be. If students don't complete their work for VLA, then teachers have seven days to mark the students as absent. So it's absolutely critical that VLA students get their work completed on time!

If you are ill and can't work on a given day due to illness or other emergency, I think you would not mark yourself present and still have a parent call in with an acceptable reason. However I'm not certain about this.

Final thoughts

I'm so happy to have you in VLA Physics class! **Really.** While I've missed teaching in person, what I've really I've missed are the interactions with students. I'm happy that we have the opportunity to allow students to take a full suite of courses this year even while having completely virtual instruction. While being an online instructor isn't something I thought I'd do, I always am up for a new challenge and am appreciative to be able to learn with you as we go through the school year. One nice thing about taking VLA classes in 2020-2021 is the certainty; other students are starting out on a hybrid model of instruction but may switch to all virtual, all in-person or go back and forth between these three types of instruction multiple times. With our VLA class we know how instruction will look all year long, so that's something we can rely on all year long.

I truly want VLA Physics to be a positive experience for you and for me. I work really hard, and I'm open to learning new things. One of the reasons I love teaching as a career is *my students teach me so much*, especially about technology, and I'm sure you'll give me great feedback to improve my online instruction as the year goes on.. For us to have the positive experience I know we can, I really need your help to be active and involved in class as much as possible given the remote instruction. I need you to give me feedback to help me improve how I do my job so I can help you learn better. Most of all I need you to give this remote instruction a shot and to keep a positive outlook. 💪**We can do this!**💪 I promise I'll do my best to give each of you feedback and try my best to make you feel welcome in class. And a little humor never hurts either! Now let's get started!