LEARNING UNLIMITED PREPARATORY SCHOOL

**PHYSICS 2021 - 22 SYLLABUS**

**Welcome Back!** **Welcome to Ms. Beland’s High School Physics Class.** Hope you had an enjoyable break and are set to begin another year of challenges and stimulation! As budding scientists, I invite you to be inquisitive, keep an open mind, use all of your six senses, and ask questions! (I hope that I will be able to answer most of them, but if not, let’s have fun discovering the answers together!)

**Course Description:** This course offers the subject matter of a traditional physics course with a quantitative approach of problem-solving.  Competent foundations in Algebra 1 skills would be an asset in this class. The format includes lecture/discussion, problem-solving and experimentation.  Students will be challenged to apply their knowledge of the laws of physics to solve physics related critical thinking problems. There will be projects to demonstrate students’ mastery of course materials.  General areas of study will include mechanics, motion, energy, light, sound, magnetism, electricity and modern physics.

**Course Outline:** This year we will be using Glencoe’s *Physics: Principles & Problems (2013)*. We may use supplementary resources as appropriate.

Using the textbook as the foundation for learning, we will engage in group activities, interactive activities, labs, field studies and projects. We will cover a breadth of material. We will be committed to incorporating current events in science, as well as applying scientific knowledge and technology. Listed below are the major units to be covered in the time frame provided:

**SEMESTER 1** **SEMESTER 2**

Unit 1: Kinematics & Mechanics (Ch 1 - 9) Unit 4: Electricity & Magnetism (Ch 20 - 26)

Unit 2: Energy (Ch 10 - 13) Unit 3: Waves & Light (Ch 14 – 19)

*(As time permits) Unit 5: Subatomic Physics (Ch 27 - 30)*

**Course Overview:** Throughout the year, you will be exposed to experiences, activities and information that will both challenge and stimulate the scientific side of your academic learning. While encouraging you to be a lifelong learner, I will also foster your development of various life skills, especially those associated with communications, problem-solving, critical thinking, collaboration, and citizenship.

Learning Unlimited Preparatory School is committed to ensuring that students have a mechanism for collecting and presenting their best work produced throughout their academic years and beyond; I will be emphasizing this in the form of student academic digital portfolios. As such, each activity, assignment and project is designed with the idea that students will be able, and are expected to use, any of the course products created and completed to assemble their individual digital portfolios.

The approach to Physics will be both conceptual and mathematical. Knowledge and skills required for high school level Physics will be enhanced via PBL. PBL focuses both on project- and problem-based learning. Listed below are *tentative* projects/large assignments associated with the major themes of coverage.

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| **THEME** | **TENTATIVE PROJECT(s)** | **DELIVERABLES** | **TERM** |
| Mechanics | Stomp Rocket Competition  Spaghetti Bridge/Towering Heights | Formative assignments, Power point, presentation, assembled physical products | Term 1  Term 2 |
| Energy | Tabletop Catapult/Trebuchet Challenge | Formative assignments, Power point, presentation, assembled physical products | Term 3 |
| Electricity & Magnetism | Electric Game | Formative assignments, Power point, electronic board toy/product | Term 3 |
| Waves & Light | Constructing Homemade Camera/Projector  Homemade Musical Instrument | Formative assignments, Power point, presentation, assembled physical products | Term 4  Term 4 |
| *Cumulative* | Vertical Marble Maze | Formative assignments, Power point, presentation, assembled physical products | Term 4 |

**Course Policies & Expectations:**  Your success in this class is dependent upon your willingness and motivation to work and learn beyond the allotted class time. Please bear in mind the following items:

* Set aside at least **30 minutes** every night to read sections of the textbook AND to review material covered/discussed in class. DO YOUR HOMEWORK INDIVIDUALLY AND SUBMIT IN A TIMELY FASHION!!!
* Throughout the year, you will be expected to write research reports and utilize various reference sources. You will be expected to cite your references accordingly or be penalized with a failing grade for the assignment.
* Group work is expected. Please remember to work collaboratively and harmoniously!
* Assignments, projects, lab reports, etc. are expected to be turned in as per deadline date AND time. After 1 day post-deadline date, late assignments WILL NOT BE ACCEPTED*.* An assignment submitted a day after the expected due date will be subject to a 30% penalty. To better prepare you for college life, **LATE WORK IS PROHIBITED**! *If extenuating circumstances should arise, it is YOUR responsibility to communicate with the teacher prior to deadline date(s).*
* Please prepare for weekly quizzes, especially those associated with chapter vocabulary. **Review daily** and be prepared for Section Review “pop quizzes”. Learning, remembering, and utilizing the proper scientific terminology is crucial for basic success in the course.
* Those absent (unexcused) during the day of a quiz/exam will not be permitted to “make it up”. If the absence is excused, you are responsible for arranging to write the quiz/exam within one week of the absence; failure to do so, results in a score of “F”.

Students are responsible for their own academic success. **This means that a student who misses a class period for any reason is responsible for determining the day’s assignment and completing the requisite work.**

**Supplies & Materials:** You are expected to provide your own supplies, unless otherwise provided by the teacher. You are solely responsible for acquiring and maintaining these items: personal digital device, USB flash drive, scientific calculator. **Access to a computer, tablet or e-Reader will be necessary to utilize the digital format of the textbook AND to complete assignments.**

Daily lessons will be available at: **msbeland.weebly.com** or on a downloadable file. Every day you will be expected to bring your laptop/tablet for the day’s activity.

\*\*\*Contents of this syllabus, course policies and procedures are subject to change, by the teacher, with prior notice to students before implementation.\*\*

**REMEMBER: CHEATING AND PLAGIARISM ARE PROHIBITED!!**

**NO FOOD OR BEVERAGES IN THE CLASSROOM!**

**Grading Distribution:** Your grades will reflect a weighting distribution according to the following categories:

ASSIGNMENTS [Homework/Participation/Class Work/Projects/Labs] = 50% ASSESSMENTS [Quizzes/Tests] = 50%

**Grading Scheme: A** = 90 -100% **B** = 80 – 89% **C** = 70 – 79% **D** = 65 – 69% **F** = <65%

**Quarter 1**: 20 % **Quarter 2**: 20% **Mid-Term Exam:** 10% **Quarter 3:** 20% **Quarter 4:** 20% **Final Exam:** 10%

**School Policies & Procedures:** Please refer to the Student Parent Handbook located online (*http://www.luschool.com/student-parent-handbook.html*) for further information regarding school-wide policies and procedures.

**Contact:** Daily lessons can be viewed on: **msbeland.weebly.com**. You may address any further concerns, deliver assignments, projects, lab reports, etc. to the following email address: [**sbeland@luschool.com**](mailto:sbeland@luschool.com)**.** If you desire immediate feedback/response, please send me a **Google Hangout Chat**.

**\*\* Great things never come from comfort zones!\*\***