

AP Physics 2 – summer information

Join the AP Physics 2 class – (course code pootmmo) on google classroom.

Over the summer you are responsible for reading and understanding chapters one through three and chapter six in the 5 steps to a 5 book.

You are also responsible for understanding the course content and makeup of the AP Physics 2 Exam

Review the course content and the makeup of the AP Physics 2 Exam

You must turn in the following on **the first day of class**:

Signed Course Information Sheet
Signed Safety Contract

You will have a **safety quiz on the first day of class** – this will count as a **lab grade**.

Questions: jgiannattasio@clarkschools.org

Enjoy the summer!!!!

Name: _____

2021 EXAM DATE - FRIDAY, MAY 7th - afternoon session
AP Physics 2

Classroom Rules

Please be prepared for class each day. This includes your notebook, a pen/pencil and a scientific calculator. You may leave your text at home as a reference unless I specifically ask you to bring it to class. Please be in your seat and ready to begin when the bell rings (not running through the door just as the bell rings). **CHEATING IS ABSOLUTELY UNACCEPTABLE** and will result in a zero for the assignment and referral to the school administration. I am available for extra help every morning between 7:00 and 7:50 am in my classroom. All missed work is to be made up commensurate with the number of days absent. Late work is not accepted unless it is due to an absence.

Grading Procedure

The final marking period average is determined as follows:

TESTS	45%
LABS	30%
HOMEWORK	15%
QUIZZES	10%

Advanced Placement Examination

This course is designed to follow the specific Advanced Placement National Curriculum for Physics 2. Upon completion of this course, students should be able to successfully take the A.P. Physics 2 examination in May. Recognize that this is a college course; accordingly, a large percentage of your grade is based on tests and quizzes. **In accordance with the AP Exam – there are no retakes or any allowances for extra time.**

I have **read and understand** the attached classroom rules and grading policy.
I have also reviewed the General Lab Safety Rules and Procedures and understand that no student will be permitted to do laboratory work unless all the safety regulations are met.

Name of Student _____

Signature of parent/guardian _____

Signature of student _____

AP Physics Tests

Multiple Choice (8 questions)

- calculator, equation sheet, constant sheet
- You have 30 minutes to complete the multiple choice section.

Free Response (2 questions – NWNCNK)

- calculator, equation sheet, constant sheet
- You have 30 minutes to complete the free-response section.

During all tests and quizzes, I will enter my vegetative proctor state and only answer procedural questions.

General Lab Safety Rules and Procedures

Fire Safety:

- Know where the fire extinguisher is located.
- Know where the exit doors are, and how you would get out of the room should a fire block one of the regular exits.
- Extinguish small fires in a container by covering and cutting off the oxygen with a solid ceramic mat.
- If anyone's hair or clothing catches on fire, immediately try to smother the flames with a wool fireblanket, or cotton clothing. **Do not ever try to smother flames with nylon clothing: it could melt onto the skin. If the fire cannot be immediately smothered, force the person to the ground and roll them over and over, to smother the flames.**
- If the fire is small enough you can try to extinguish it with a fire extinguisher. Make certain that you use an extinguisher designed for a class ABC fire.
- Class D fires involve burning metals such as magnesium. They must be smothered with sand, not a fire extinguisher.

Direct the extinguisher at the base of the flames, and sweep it back and forth across the front of the flames, at their bottom. Note: a fire extinguisher has only a few seconds of use.

If the fire is too large to extinguish immediately, evacuate the building, and sound the fire alarm.

Cleanliness:



- Don't eat or drink in the lab when you are doing an experiment.
- Some of the substances you use are highly poisonous, and/or corrosive so don't intentionally touch them.
- Make sure to clean up all spilled substances promptly. Almost all the chemicals you use are water soluble, so most can be cleaned up with lots of water and paper towel. You must wear rubber gloves while cleaning up anything corrosive. Organic substances may be insoluble in water, so consult your instructor for the proper cleanup procedure.
- Wash your hands with soap and water, including under your nails, before you leave the lab. Wash them again before you eat.
- Never bring chemicals to your desk. Keep them isolated to the lab counter area of the room.

Wear Eye Protection:

- Most of the substances used in labs are very irritating to your eyes. Some of them can cause blindness. **ALWAYS** wear your goggles when working with materials that may fall, splash, or fly into your eyes, even if it seems the substances are harmless.
- You do not know for sure what is in **anything**. It may have been contaminated, either accidentally or intentionally.
- If you do accidentally get any substance in your eyes, wash them with cool running water for at least 15 minutes (time this). It is virtually impossible to wash out your own eyes if you get a chemical in them. You will instinctively close them, so immediately call for help. If anyone in the lab gets a chemical in their eyes, assist them to the eyewash station, and hold their eyes open while you direct a very gentle stream of body temperature water at their opened eyes. **Get the person's eyes washed with water, and lots of it immediately.** Always get medical attention immediately.

Burns:

- Glass and metal look no different when hot than cold. Be cautious! Always touch any item that has been heated very gently, lightly, and with a damp finger. It takes hot glass a long time – up to 10 minutes or more – to cool to room temperature.
- If you burn yourself, *immediately* run the burned area under cold water. Inform your teacher. Get medical attention for any burn that raises a blister, or breaks the skin.
- Tie back your hair if it is mid-neck length, or longer.
- Never leave the burner unattended.
- Keep flames away from combustible material. Do not use organic chemicals in the presence of open flames.
- When heating materials in a test tube, always point the tube away from everyone, including yourself.
- Never look into the mouth of a test tube that is being heated.



Using Glassware:

- Broken glassware, must be immediately cleaned up by you and disposed of in a broken glass container. Use a **broom and dustpan, not your fingers!**
- Never use glassware that is already chipped or cracked. Give it to your lab instructor or dispose of it as directed in a broken glass disposal container.
- If you cut yourself, immediately inform your lab instructor.

General Guidelines:

- Always read through every lab procedure fully, especially including the safety precautions, before you enter the laboratory.
- Always wear closed toe shoes (not sandals) in a laboratory.
- Take only the amount of chemical you need. Never return the excess. It is better to throw out a little bit too much, than to accidentally contaminate the whole container by putting it into the wrong bottle!
- The balances are very delicate (and expensive) instruments. Treat them carefully. If you use proper massing techniques there is no excuse for spilling on them. But if you do accidentally do so, **CLEAN IT UP IMMEDIATELY!**
- Be careful with hot substances. Almost all the accidents that happen in the lab are burns caused by careless handling of hot objects.
- Never taste anything in the lab. If you need to smell any chemical, waft a few vapors of it gently towards your nostrils with your hand. **Never smell anything unless your lab instructor has specifically told you to do so.**
- Never work alone while doing chemistry experiments.
- Never work in the lab without the instructor present.
- Have fun, but don't fool around in the lab. Science should be fun, not dangerous!

Flinn Scientific's Student Safety Contract

34. Never use mouth suction to fill a pipet. Use a rubber bulb or pipet pump.
35. When transferring reagents from one container to another, hold the containers away from your body.
36. Acids must be handled with extreme care. You will be shown the proper method for diluting strong acids. Always add acid to water, swirl or stir the solution and be careful of the heat produced, particularly with sulfuric acid.
37. Handle flammable hazardous liquids over a pan to contain spills. Never dispense flammable liquids anywhere near an open flame or source of heat.
38. Never remove chemicals or other materials from the laboratory area.
39. Take great care when transporting acids and other chemicals from one part of the laboratory to another. Hold them securely and walk carefully.

HANDLING GLASSWARE AND EQUIPMENT

40. Carry glass tubing, especially long pieces, in a vertical position to minimize the likelihood of breakage and injury.
41. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass. Place broken or waste glassware in the designated glass disposal container.
42. Inserting and removing glass tubing from rubber stoppers can be dangerous. Always lubricate glassware (tubing, thistle tubes, thermometers, etc.) before attempting to insert it in a stopper. Always protect your hands with towels or cotton gloves when inserting glass tubing into, or removing it from, a rubber stopper. If a piece of glassware becomes "frozen" in a stopper, take it to your instructor for removal.
43. Fill wash bottles only with distilled water and use only as intended, e.g., rinsing glassware and equipment, or adding water to a container.
44. When removing an electrical plug from its socket, grasp the plug, not the electrical cord. Hands must be completely dry before touching an electrical switch, plug, or outlet.
45. Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware.
46. Report damaged electrical equipment immediately. Look for things such as frayed cords, exposed wires, and loose

connections. Do not use damaged electrical equipment.

47. If you do not understand how to use a piece of equipment, ask the instructor for help.
48. Do not immerse hot glassware in cold water; it may shatter.

HEATING SUBSTANCES

49. Exercise extreme caution when using a gas burner. Take care that hair, clothing and hands are a safe distance from the flame at all times. Do not put any substance into the flame unless specifically instructed to do so. Never reach over an exposed flame. Light gas (or alcohol) burners only as instructed by the teacher.
50. Never leave a lit burner unattended. Never leave anything that is being heated or is visibly reacting unattended. Always turn the burner or hot plate off when not in use.
51. You will be instructed in the proper method of heating and boiling liquids in test tubes. Do not point the open end of a test tube being heated at yourself or anyone else.
52. Heated metals and glass remain very hot for a long time. They should be set aside to cool and picked up with caution. Use tongs or heat-protective gloves if necessary.
53. Never look into a container that is being heated.
54. Do not place hot apparatus directly on the laboratory desk. Always use an insulating pad. Allow plenty of time for hot apparatus to cool before touching it.
55. When bending glass, allow time for the glass to cool before further handling. Hot and cold glass have the same visual appearance. Determine if an object is hot by bringing the back of your hand close to it prior to grasping it.

QUESTIONS

56. Do you wear contact lenses?

YES NO

57. Are you color blind?

YES NO

58. Do you have allergies?

YES NO

If so, list specific allergies _____

AGREEMENT

I, _____, (student's name) have read and agree to follow all of the safety rules set forth in this contract. I realize that I must obey these rules to ensure my own safety, and that of my fellow students and instructors. I will cooperate to the fullest extent with my instructor and fellow students to maintain a safe lab environment. I will also closely follow the oral and written instructions provided by the instructor. I am aware that any violation of this safety contract that results in unsafe conduct in the laboratory or misbehavior on my part, may result in being removed from the laboratory, detention, receiving a failing grade, and/or dismissal from the course.

Student Signature

Date

Dear Parent or Guardian:

We feel that you should be informed regarding the school's effort to create and maintain a safe science classroom/laboratory environment.

With the cooperation of the instructors, parents, and students, a safety instruction program can eliminate, prevent, and correct possible hazards.

You should be aware of the safety instructions your son/daughter will receive before engaging in any laboratory work. Please read the list of safety rules above. No student will be permitted to perform laboratory activities unless this contract is signed by both the student and parent/guardian and is on file with the teacher.

Your signature on this contract indicates that you have read this Student Safety Contract, are aware of the measures taken to ensure the safety of your son/daughter in the science laboratory, and will instruct your son/daughter to uphold his/her agreement to follow these rules and procedures in the laboratory.

Parent/Guardian Signature

Date

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Flinn Scientific's Student Safety Contract

PURPOSE

Science is a hands-on laboratory class. You will be doing many laboratory activities which require the use of hazardous chemicals. Safety in the science classroom is the #1 priority for students, teachers, and parents. To ensure a safe science classroom, a list of rules has been developed and provided to you in this student safety contract. These rules must be followed at all times. Two copies of the contract are provided. One copy must be signed by both you and a parent or guardian before you can participate in the laboratory. The second copy is to be kept in your science notebook as a constant reminder of the safety rules.

GENERAL RULES

1. Conduct yourself in a responsible manner at all times in the laboratory.
2. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ask the instructor before proceeding.
3. Never work alone. No student may work in the laboratory without an instructor present.
4. When first entering a science room, do not touch any equipment, chemicals, or other materials in the laboratory area until you are instructed to do so.
5. Do not eat food, drink beverages, or chew gum in the laboratory. Do not use laboratory glassware as containers for food or beverages.
6. Perform only those experiments authorized by the instructor. Never do anything in the laboratory that is not called for in the laboratory procedures or by your instructor. Carefully follow all instructions, both written and oral. Unauthorized experiments are prohibited.
7. Be prepared for your work in the laboratory. Read all procedures thoroughly before entering the laboratory.
8. Never fool around in the laboratory. Horseplay, practical jokes, and pranks are dangerous and prohibited.
9. Observe good housekeeping practices. Work areas should be kept clean and tidy at all times. Bring only your laboratory instructions, worksheets, and/or reports to the work area. Other materials (books, purses, backpacks, etc.) should be stored in the classroom area.
10. Keep aisles clear. Push your chair under the desk when not in use.

11. Know the locations and operating procedures of all safety equipment including the first aid kit, eyewash station, safety shower, fire extinguisher, and fire blanket. Know where the fire alarm and the exits are located.
12. Always work in a well-ventilated area. Use the fume hood when working with volatile substances or poisonous vapors. Never place your head into the fume hood.
13. Be alert and proceed with caution at all times in the laboratory. Notify the instructor immediately of any unsafe conditions you observe.
14. Dispose of all chemical waste properly. Never mix chemicals in sink drains. Sinks are to be used only for water and those solutions designated by the instructor. Solid chemicals, metals, matches, filter paper, and all other insoluble materials are to be disposed of in the proper waste containers, not in the sink. Check the label of all waste containers twice before adding your chemical waste to the container.
15. Labels and equipment instructions must be read carefully before use. Set up and use the prescribed apparatus as directed in the laboratory instructions or by your instructor.
16. Keep hands away from face, eyes, mouth and body while using chemicals or preserved specimens. Wash your hands with soap and water after performing all experiments. Clean all work surfaces and apparatus at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
17. Experiments must be personally monitored at all times. You will be assigned a laboratory station at which to work. Do not wander around the room, distract other students, or interfere with the laboratory experiments of others.
18. Students are never permitted in the science storage rooms or preparation areas unless given specific permission by their instructor.
19. Know what to do if there is a fire drill during a laboratory period; containers must be closed, gas valves turned off, fume hoods turned off, and any electrical equipment turned off.
20. Handle all living organisms used in a laboratory activity in a humane manner. Preserved biological materials are to be treated with respect and disposed of properly.

21. When using knives and other sharp instruments, always carry with tips and points pointing down and away. Always cut away from your body. Never try to catch falling sharp instruments. Grasp sharp instruments only by the handles.
22. If you have a medical condition (e.g., allergies, pregnancy, etc.), check with your physician prior to working in lab.

CLOTHING

23. Any time chemicals, heat, or glassware are used, students will wear laboratory goggles. There will be no exceptions to this rule!
24. Contact lenses should not be worn in the laboratory unless you have permission from your instructor.
25. Dress properly during a laboratory activity. Long hair, dangling jewelry, and loose or baggy clothing are a hazard in the laboratory. Long hair must be tied back and dangling jewelry and loose or baggy clothing must be secured. Shoes must completely cover the foot. No sandals allowed.
26. Lab aprons have been provided for your use and should be worn during laboratory activities.

ACCIDENTS AND INJURIES

27. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the instructor immediately, no matter how trivial it may appear.
28. If you or your lab partner are hurt, immediately yell out "Code one, Code one" to get the instructor's attention.
29. If a chemical splashes in your eye(s) or on your skin, immediately flush with running water from the eyewash station or safety shower for at least 20 minutes. Notify the instructor immediately.
30. When mercury thermometers are broken, mercury must not be touched. Notify the instructor immediately.

HANDLING CHEMICALS

31. All chemicals in the laboratory are to be considered dangerous. Do not touch, taste, or smell any chemicals unless specifically instructed to do so. The proper technique for smelling chemical fumes will be demonstrated to you.
32. Check the label on chemical bottles twice before removing any of the contents. Take only as much chemical as you need.
33. Never return unused chemicals to their original containers.

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