

# AP PHYSICS 3 SUMMER WORK for MORE PHYSICS with Mr. Chapman

Hiya - you have all summer to do this to prioritize your enrollment in the zero hour AP 3 Physics course, but feel free to submit it earlier than the deadline of the first day of class. **If you don't complete #1-4 before the first day of class, you run the risk of losing your spot in the course...**

Please register for CANVAS if you haven't already done so, and go ahead and join the AP Physics 3 course for next year!

<https://canvas.instructure.com/enroll/NJMXMM>

1. **Watch** [this series](#) of three 10 minute videos about the bullet block experiment, and make sure you're really comfortable with the concepts of the three main conserved quantities that are discussed! What are these three conserved quantities? (**List** them) Be prepared to discuss how the changes in energy storage can affect the linear and angular momentum...*(P.S. are there more conserved quantities in the universe?)*

2. **Learn** something interesting about physics, include a **video** link and be prepared to show it and **teach** the class about it during the first week. (no more than 5 minutes of video and 5 minutes of talking) Add in your link and a brief description of what you'll be teaching us. (See below for a list of some useful Youtube channels)

3. **Write** out full credit solutions to the five released AP test questions from Spring ([questions and rubrics are HERE](#)). You can certainly work with others on this stuff (it's recommended), but your written solutions must be your own work. (Helpful tutorials [here](#))

4. **Prepare** to build a paper tower on the first day! One page of paper, one meter of tape, you know the rules! Can you go higher than 1.5 meters?

Bring the above to the first day of class, and after we build towers you can submit them in Canvas (or earlier if you want feedback on the first three). Below please find some other stuff that's a good idea to do during the summer to keep increasing your physics awesomeness

- In AP Physics 3&4 we'll be using a lot of **vectors**, make sure you remember your trig! (we'll be applying these vectors to electricity, magnetism, fluids, and nuclear stuff. I recommend working through the Vector stuff on [PhysicsClassroom.com](#) - just make sure you know how find vector components, add up a bunch of vectors (sum), and then express the sum in vector notation.
- Make sure you can use your mad trig skills to solve a 2D elastic **collision** problem (it's elastic, so you'll need to conserve the kinetic energy AND momentum in both the X and Y directions) - we'll go over this in class if you have questions, and again [PhysicsClassroom.com](#) has really good momentum tutorials.
- **Register** for [Learnerator.com](#) and add yourself to this **9WQQRRL** class (it's different than the one we used during the first year), and take a peek around [AP Physics 2](#). Reviewing all the problems from AP Physics 1 is a great idea...
- Watch lots of cool Youtube videos, like those found on [Veritasium](#), [SciShow](#), [CrashCourse](#), [Vsauce](#), [MinutePhysics](#), [SmarterEveryDay](#), [PhysicsGirl](#) and so many more!

