



## PHYSICS AND SPORTS – SUMMER PROJECT

*AP PHYSICS*

*Mrs. Mast*

*INTERACTIVE PRESENTATION*

*50pts*

NAME: \_\_\_\_\_

**Description:** This project will give you an introduction to the physics concepts we'll be studying in this class and we'll be adding to it all year until it will be presented as part of your final project in April. You will create an interactive presentation using any of the applications that you are most familiar and comfortable with. These include, but are not limited to: PPT, Keynote, iMovie, etc. By using a combination of visuals, video clips, hand drawings, typed and verbally explained methods, you will 'Anchor' (talk through) a demonstration of Physics in Sports.

**Tools/resources:** Please WATCH/TAKE NOTES on the clips from the two links to get familiarized with the topics presented. These are resources you are allowed to use as research for your presentation, please CITE anything you use so I know the source material.

- 1) Khan Academy for AP physics 1: <https://www.khanacademy.org/science/ap-physics-1>
- 2) Crash Course Videos:  
[https://www.youtube.com/playlist?list=PL8dPuuaLjXtN0ge7yDk\\_UA0ldZJdhwkoV](https://www.youtube.com/playlist?list=PL8dPuuaLjXtN0ge7yDk_UA0ldZJdhwkoV)
- 3) Any legitimate/vetted online sources: CITE
- 4) YouTube videos
- 5) Google images
- 6) Your personal videos and pictures

**\*\*\*Please cite at the end with correct MLA format any sources used in making the presentation**

### **Requirements:**

- 1) Length: 10-15min of you TALKING – absolutely no reading- through the presentation from beginning to end
- 2) Presentation is mostly visual with most of the actual information to be spoken by you, but must include:
  - a. An overview of your sport
  - b. Pictures showing different aspects of your sport
  - c. Basic rules and requirements
  - d. At least THREE video clips where you can explain physics applied
    - i. Good clear visuals for the sport in action
    - ii. One of the videos must be DEMONSTRATED BY YOU actually doing the sport, or FILMED BY YOU of someone you know doing a move in the sport

- iii. The other two videos can be from YouTube or any other source
- iv. Videos must not be longer than 3min TOTAL
- v. A verbal explanation from YOU (not the video itself) of what is being shown and how it demonstrates select physics laws – naming and explaining the laws/principles will be required. So NO SOUND IN THE VIDEOS to be played at any time.
- e. VISUALS: At least 4 - (pictures/diagrams/animations/GIFs etc) that you would be using to explain physics applied
- f. A slide for each of the physics principles/laws required (see #4) with brief description and explanation of each –showing your basic understanding, not just copied definitions.
- g. Work cited slide

3) You do NOT need to do any MATHEMATICAL calculations

- 4) Principles/laws covered and MUST be included are – they are named so you can find them on both Khan Academy and Crash Course videos:
- a. Motion in 1D in a straight line
  - b. Motion in 2D – Projectiles
  - c. Newtons three laws of motions
    - i. Talked about SEPARATELY
  - d. Friction, Centripetal Forces and Uniform Circular Motion
  - e. Momentum and Impulse: Collisions
  - f. Rotational Motion
  - g. Torque and Angular Momentum
  - h. Work and Energy

**Basically we want to see how physics is applied and used in your sport. You may research physics in your sport specifically as well, but DO NOT just copy and paste information that you don't understand.**

**Due: 08/21/2019**

**PROJECTS WILL BE SUBMITTED TO SCHOLOGY by 7am and presented first week of school.**

- **If this is not done by due date – WE'LL HAVE TO MEET to decide whether this is a good placement for you as AP requires motivation, self-discipline and effort**
- **IF you do decide to drop and you are a Junior – you'll have to WAIT till next year to take the General Level physics as there is NO MORE space since we worked the schedule around the classes you chose**
- **Seniors – we'll have to have a meeting with your parents and guidance to figure out if a change is even possible with your schedule and my classes being full.**
- **Work that is not original and is not produced by you will receive a 0**