

# Physics in Action

Materials: Supplied by Students	Time Allotment: 3 weeks
	Due Date: Wednesday May 25 <sup>th</sup> 2016

## Overview:

This assignment involves the creation of a video that will be played to physics classes at John P. Stevens High School. Individually, with a partner or group as indicated, you must demonstrate your understanding of physics through an artistic endeavor.

## The Assignment – Physics and the Arts:

In this assignment, you will demonstrate your understanding of physics through your ability to use the arts. Select one of the following assignments

- **Poem**

Individuals that choose this topic will write an original poem dealing with any or all topics that were covered in physics this year. Your originality and skill with the English language will be paramount. Insight and comprehension of the subject matter as well as humor will be an asset. The length of the poem should be appropriate. You must create a video of your poem being read. Graphics and/or live performance may be taped.

- **Music**

Write and perform an original song demonstrating your understanding of a topic covered this year in physics. Up to three students may work together as a musical group. The tune may be a known song but must be performed live by a member. (who has musical ability) The lyrics must be original and all participants must perform. Create and submit a video of your performance that may be shown to physics classes. Originality and comprehension will be a key factor.

- **Rube Goldberg Machine**

In a group of four partners you are to create a Rube Goldberg machine and video tape it in action. It must include a minimum of 12 simple machines created into a complex machine and complete all its tasks in no less than 1 minute and submit a video. Any materials may be used and are supplied by the students. Originality of design will certainly influence the grade received. The machine may begin with human contact, but then it must continue on its own energy. The end result must reveal a flag, card or paper that reads “Physics Rules”. The video must be in three

parts. First is the machine seamlessly performing all of its tasks? Second is an explanation of the physics behind each step of the machine. Third is the description of the work performed by each partner. Last as optional is a section of bloopers.

It is suggested that you pick an assignment that is of natural interest to you and conveys your artist skills. Spend your time enjoying a different way of expressing yourself and conveying your understanding of physics.

### **The Assignment - Requirement Summary:**

If the music or poem assignment is selected you must print the lyrics or poem and hand them in with the assignment or use subtitles. There is no written assignment if a Rube Goldberg machine is selected as your assignment. All videos must have each participants name and period in the title.

### **Assessment:**

Your assignment will be assessed using the following scoring rubric.

<b>1. Artist Endeavor</b>	<b>0 - 1</b>	<b>2 - 3</b>	<b>4-5</b>
Demonstrated an ability to express oneself through the use of the Arts or Engineering fields. The ability to convey this through current technology of video and editing techniques.	Failed to convey an artist or engineering experience that was meaningful. Did not record assignment on electronic device.	The experience through the use of artist or engineering techniques was lacking. Resourcefulness and originality could have been improved. Recorded assignment on DVD.	Conveyed a meaningful experience through the use of artist or engineering techniques. Originality and ingenuity of thought was evident. Recorded assignment on DVD.
<b>2. Physics Understanding</b>	<b>0 - 1</b>	<b>2 - 3</b>	<b>4-5</b>
Demonstrated a clear understanding of physics principles that was learned through the course of the year in physics.	Does not convey an understanding of physics, many serious errors; understanding of topic is not fully developed.	Physics understanding is superficial; attention not given to specifics of the physics; too vague and/or inaccurate; includes some detrimental errors.	All physics presented in assignment was accurate. Demonstrated an understanding of physics and its application to the arts and engineering fields.