

## Physics Extra Credit Options

2010-2011

-Extra credit points go into your test score grade. The maximum you can improve your grade for a given quarter is 10%, or if your current grade is less than 60%, from an “F” to a “D”.

-Take a photograph of your own or find a picture from a magazine or the internet that illustrates some topic that we have covered in physics class. They should be from the **current chapter** we are working in or submitted **within 4 class periods** of taking the chapter test. In two to three paragraphs, single spaced, explain how the picture relates to what you have learned. Points will be awarded for appropriateness of the picture and accuracy of the explanation. **Limit one photograph per chapter.** (1 - 8 points)

-Create a poster or a PowerPoint presentation explaining the concepts or equations we have discussed in class. They should be from the current chapter or submitted **within 4 class periods** of taking the chapter test. **Limit one poster or ppt per chapter.** (1 - 4 points, 3 points maximum for posters, Quality counts)

-Write a report on a topic of interest for you in physics or astronomy, or a biography and the contributions of someone important in physics or astronomy. **A works cited page is required for all reports. Limit one report per chapter.** (1 - 8 points)

Find a recent article (newspaper, magazine, or internet) dealing with physics. Print or make a photocopy and write a one to three paragraph statement on its importance. Submit both the copy of the article and your report. It should be from the current chapter or submitted **within 4 class periods** of taking the chapter test. Bonus points will be awarded if it relates to a topic covered in class and you correctly explain the information. **Limit one article per chapter.** (1 - 8 points)

-Gravity car race - Individually (or possibly in pairs) construct a gravity derby car. You are to use a large size matchbox, or a similarly sized box. Dimensions for the box are not to exceed 20 cm in length, 10 cm in width, or 5 cm in height. Total height, including wheels, can not exceed 15 cm. The box must be an integral part of the support structure of the car. The car cannot be built around the box, carrying it as cargo. You can add anything to the car except any means of power, such as a motor or springs. The car must be gravity driven. **The race will be done no more than once per quarter.** You will be allowed two trial runs and one final run. You need not use all the trials. Points will be awarded for distance. (1 - 5 points)

-Create a working demo of the “monkey drop.” More information will be given when we discuss this topic. (1 - 10 points)

-Create a working model of a trebuchet. This **does not** need to be a large model. Points to be determined when completed. More information will be given when we discuss this topic.

-For **each** of the questions you missed on a test, write an explanation of why the correct answer is correct, **and** why each of the **other answers** are **incorrect**, by explaining what they actually relate to or give their definition. If a math problem, show all the steps in calculating the correct answer. **Also** show how you arrived at the wrong value. Staple together your list of explanations, your test answer card, and your test questions to turn in. **(1 point for every 3 missed questions that are corrected)**

**The following options may be available depending on when we cover the topics, probably 2<sup>nd</sup> sem.**

-**Mobiles** - Using torque calculations, build a working mobile.

-**Egg drop** - Devise a container using drinking straws and masking tape

-Suggest a project of your own for extra credit. **Limit one per chapter** (I must accept your project before you start.)

-I may add other ideas as they come up.