

## Project

### How Do we Use Quadratic Functions in our daily life?

**Back Ground:** You just got hired in a company. Your job in this company is to research on their products, and customers to maximize the profit (revenue) of selling a particular product. In this project, you will use your knowledge of quadratic functions to complete your job.

**Survey:** For this project, choose any company you want to be hired. Now, choose one of their product and its customers to create survey questioners on your community.

Search in the internet to for sample questionnaires such as

1. "Math is Fun" : <http://www.mathsisfun.com/data/survey-questionnaire.html>
2. Design Survey That Count: ( <http://www.keene.edu/crc/forms/designingsurveysthatcount.pdf> )
3. Basic Of Survey and question design: (<http://www.howto.gov/customer-service/collecting-feedback/basics-of-survey-and-question-design> ) etc.

#### **Before You Begin the survey:**

- **Clearly state goals and objectives of the survey:** Why are you conducting the survey? What do you hope to learn from asking these questions? What are some possible actions should your company take to maximize the revenue?
- **Address your own biases:** What questions shouldn't you ask? Be specific.
- **Explore available information:** How much is the product selling for right now? How much revenue is your company making per day/week/month/year etc?
- **Clearly define and know your population:** Target the users/customers you are going to survey. Know their life style, socio-economic condition.
- **Determine response format:** What are some answers you may possibly get from users?
- **Decide on length:** Determine the length, number of questions, and the number of users you must conduct to receive required information.

You must include the name and profession (you may include other information) of each user in your questionnaire. A possible group of users may be the staffs of Star.

**Data Analysis:** When you are done with your survey, analyze the information you have received from the survey.

- Have you received all the required information you need?
- Can you make decision (**How to maximize the profit**) based on the information?

**Create A word problem:** This is the most critical part of this project. Gather all information from your survey to create a **world problem to maximize the revenue**. Your word problem must match (make sense) the information you get in your survey.

- Write a **quadratic function in standard** form that model the revenue for the product.
- Explain what change must you make to maximize revenue of the product?
- What price produces the maximum revenue?

**Report Paper and Poster:** Now submit all your work as a report paper (essay). Your report paper must contain the following;

- Cover page (with a title of your project, name of group members, your teachers name etc.)
- Questionnaire( blank copy of your survey )
- Summary of your survey
- Data Analysis
- Word Problem (Including the solution)
- Explanation of the change you must make to maximize revenue.

Also, make a poster for a visual presentation of your work.

### **Project Due: 02-07-2013 (Monday)**

**Purpose:** For this project, you will be working as a group of two. The only exception to working as a group of two is if there is an extra student in the class and that person is assigned by the teacher to be part of a group of three.

You may not work on this project alone. Your group participation is an integral part of your grade; therefore if you do not work as a group, the highest score you can get for this project is a 50%.

**Team Members:** All team members must play an active role in completing this project. Each person will take responsibility for completing certain "jobs". In order to ensure that this happens, each team member will grade (confidentially) the other members of their team at the end of the project using a peer evaluation form ( I will provide this form later). If you do not participate in the completion of this activity, you will not receive the credit for this assignment.

**Grading:** You will get summative grade for this project. You will be graded using the attached rubric as well as your peer evaluation form. In addition, this project will also be used to assess your progress in the "Innovation" learning expectation. This grade will be a part of your overall grade and will also be reported out separately as assessment on MYP criteria B on your Power School.