Photographic Functions

1. Using the camera, to the playground and take at least five pictures of the structures that would represent functions. Be sure to take your pictures “straight on” instead of at an angle.*

2. Download the pictures to a laptop. Select three pictures to use and print them out two pictures per page.

3. On the picture draw a coordinate system with the origin at the center. Using the centimeter markings, mark the axes neatly using one-half centimeter intervals.

4. Using colored ink (one color for each line drawn), draw in 5 lines representing functions shown in the picture. You must find at least 1 horizontal, 1 vertical, and 1 diagonal. Be sure to use ink colors that will show on your picture.

5. Write the equation of the line.

Example of Steps 3 and 4.

*NOTE: Because this picture was taken at an angle, the horizontal lines (functions) do not appear horizontal and, therefore, cannot be used as horizontal lines (the red line would actually be horizontal if the picture was not taken at an angle).
In this project, you will carve “your face” on a pumpkin. You will be given a picture of yourself with a coordinate system printed over the top. Using the photo and your pumpkin complete the following steps to finish the project.

1. Select your pumpkin. Working with a partner and using the flexible ruler, draw a coordinate system on your pumpkin using a permanent marker or regular ink pen. Mark the coordinate system in intervals of one-half centimeters.

2. Using the photo, locate points on your face that will be included on your pumpkin graph. Mark the point on your graph, label it, and record the coordinates on another sheet of paper.
   a. Remember you only need two points to make a line.
   b. For each curve, you will need to mark more points to plot.

3. After you have recorded the coordinates, plot these same points on the coordinate system you drew on the pumpkin. Connect the points to see your face.

4. Once all points have been plotted on the pumpkin, cut a rectangle in the back of your pumpkin to remove the pumpkin seeds and strings. Once your pumpkin is cleaned, “carve” your face. You may carve the lines, actually cut the shapes out as you would on a regular jack-o-lantern, or simply punch holes at regular intervals to let the light to shine through.

5. Carving only the eyes, nose, and mouth will be equivalent to a grade of 70%.

6. All projects are due on Friday, October 31st. Please turn your photo with the points marked, a list of the points used, and your carved pumpkin.