

## Graph-It Design

Alfred Solis, Math/Physics, High Tech High

For the Graph-It Design project, each student used Excel software to create their own “mathterpiece” of an image pertaining to a historical figure. Students identified 124 sets of data points from an image of their choice, and derived 25 different linear equations to reproduce the image. They then presented and displayed their work gallery-style during an exhibition night.

### Teacher Reflection

As a teacher, I enjoy leveraging the power of Excel in different ways. In this case, it helped me to integrate art and mathematics. Also, Excel software acts like a video game because it assesses students’ work in real-time. When they entered data points and equations, they could see whether or not it aligned with the original image. This instant feedback made them check their work every step of the way. This taught perseverance, because even though the graphs involved a lot of work, the students wanted them to look great for the exhibition.

—Al Solis

### Student Reflection

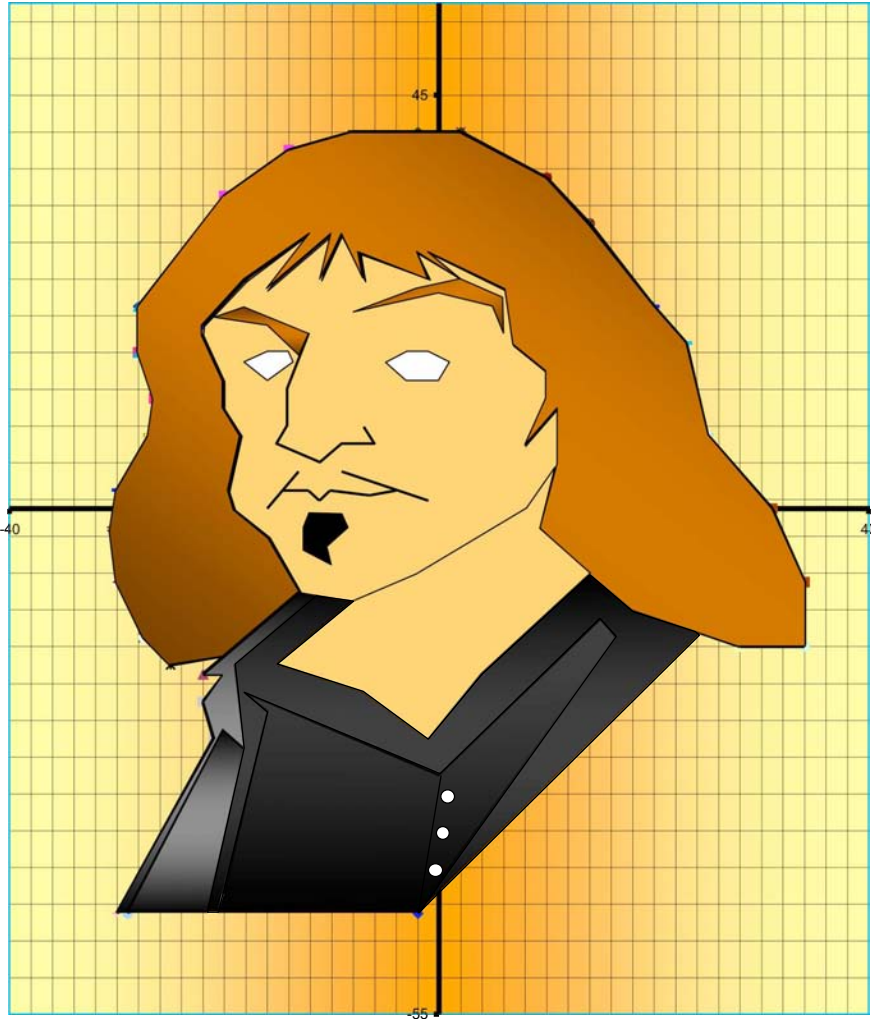
Pictures can easily be drawn or taken, but this project proved to be not as simple. We used Excel to draw our picture, but rather than drawing in lines, we calculated the equations for each straight line on an x-y axis and entered the equations into Excel. The first thing that I did once I had my picture was to plot the points on an x-y graph. Then I connected the dots and started to solve for the equations of my lines. Even though we were only required to solve for 25 lines, I solved for my entire portrait of Rene Descartes. In the end, I was really proud of the fact that I did not draw any lines and I was amazed at how well my picture looked compared to the real portrait. I was in awe as the lines popped up onto the screen as I entered in the equations. It really helped me visualize line equations. From this single project we learned about a vast range of concepts, from slope, y-intercept, equations of lines, parallel lines, perpendicular lines, and to how to graph lines in Excel.

—Matthew Lung, 9<sup>th</sup> grade

To learn more about this project and others visit the HTH Digital Commons and Alfred Solis’ digital portfolio at

<http://www.hightechhigh.org/> and <http://staff.hightechhigh.org/~asolis/>

### RENE DESCARTES (1596-1650)



Rene Descartes by Matthew Lung, HTH, 9<sup>th</sup> grade.