



Mr. Clarkson's Math Classes
 Cambridge Middle School / High School
 Cambridge, Idaho 2016 / 2017 School Year
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 Class Website: mrclarksonsmath.info

Algebra II Year Project

Desmos Art

The Desmos calculator (desmos.com/calculator) has quickly gained acceptance not only as the current foremost versatile graphing calculator freely available on the internet but also as a tool for creativity in the form of line art. Within just the past few years many thousands of art projects have been created using the graphing functions of the calculator. The illustration above is a simple form of Desmos art used to teach about the unit circle, the sine and cosine of regular right triangles, and the value of radical numbers.

Your task will be to plan and create a Desmos Art project by first learning the calculator well, learning various types of functions and equations well, and applying that knowledge to produce the necessary lines, arcs, parabolas, circles, ellipses, and other forms as digital art. This project synopsis will guide you through the requirements and the steps.

Requirements

- ✓ You may choose any school and community appropriate subject matter approved by Mr. Clarkson.
- ✓ Your project must include a minimum of 200 equation lines.
- ✓ Your project must include a balance of various types of algebraic equations (it cannot be primarily linear).
- ✓ Stay to task and complete each goal on-time as outlined in the calendar below.

Scope and Sequence

You will first explore the Desmos calculator for several weeks to become familiar with its capabilities.

- ✓ 1 September 2016 Functions – <http://learn.desmos.com/functions>
- ✓ 8 September 2016 Graph Settings – <http://learn.desmos.com/graph-settings>
- ✓ 15 September 2016 Keyboard Shortcuts – <http://learn.desmos.com/keyboard-shortcuts>
- ✓ 22 September 2016 Lists – <http://learn.desmos.com/lists>
- ✓ 29 September 2016 Points – <http://learn.desmos.com/points>
- ✓ 6 October 2016 Sliders – <http://learn.desmos.com/sliders>
- ✓ 13 October 2016 Tables – <http://learn.desmos.com/tables>
- ✓ 20 October 2016 Text, Folders, Images – <http://learn.desmos.com/text-folders-and-images>
- ✓ 27 October 2016 Restrictions – <http://learn.desmos.com/restrictions>
- ✓ 3 November 2016 Polar Graphing – <http://learn.desmos.com/polar-graphing>
- ✓ 10 November 2016 Inequalities – <http://learn.desmos.com/inequalities>
- ✓ 17 November 2016 Regressions – <http://learn.desmos.com/regressions>
- ✓ 1 December 2016 Statistics – <http://learn.desmos.com/statistics>
- ✓ 8 December 2016 Trigonometry – <http://learn.desmos.com/trigonometry>

The first semester learning portion is done. For second semester you will be working on the actual project. Due dates are not weekly, so keep on-top of the schedule.

- ✓ 12 January 2017 Submit Preliminary Ideas for approval

- ✓ 26 January 2017 Finalize Ideas, Post Images to Desmos, email graph to Mr Clarkson.
- ✓ 23 February 2017 Complete at least the first 50 lines, email graph to Mr Clarkson.
- ✓ 23 March 2017 Complete at least the first 100 lines, email graph to Mr Clarkson.
- ✓ 27 April 2017 Complete at least the first 150 lines, email graph to Mr Clarkson.
- ✓ 22 May Final Project Submission Deadline, email graph to Mr Clarkson. Mr. Clarkson will help you to prepare your project for possible public display at the Hell's Canyon Days Art Exhibit and/or the Fair Art Exhibit.

Grading

Project grading will be on a four point scale reflecting thoroughness, accuracy, creativity. Consideration is given for each students artistic talents. The project is 15% of the overall grade and will be reflected at quarters, semesters, and the end of the year.

| | <i>Criteria</i> | |
|---|---|---|
| 4 | The student demonstrates thorough understanding of algebraic principles taught to date. The student well understands the use of the Desmos Calculator. The student submits the project up to date. The student also is willing to help other students with their understanding of the principles. | A |
| 3 | The student demonstrates good understanding of algebraic principles taught to date. The student generally understands the use of the Desmos Calculator. The student submits the project up to date the majority of the time. | B |
| 2 | The student demonstrates some understanding of algebraic principles taught to date. The student understands some of the use of the Desmos Calculator. The student submits the project up to date some of the time. | C |
| 1 | The student demonstrates poor understanding of algebraic principles taught to date. The student poorly understands the use of the Desmos Calculator. The student fails to submit the project up to date. | I |

Algebra II Year Project Response

Please sign this bottom half of this sheet, fold, detach, and submit to Mr. Clarkson before 1 September 2016.

I have read, understand, and agree to complete these assignments to the best of my abilities.

Student Signature and date

I will have read these assignments and will plan to help keep my child on-task toward the completion of the assignments.

Parent(s) Signature(s) and date