

GeoGebra at TMC14

This page: <http://bit.ly/tmc14-ggb>

Hashtag: #ggbtmc14

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Contact Info

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Audrey McLaren, @a_mcsquared, audrey-mcsquared.blogspot.com, [GGBtube profile](#)

Resources

[GeoGebra Wiki](#)

[GeoGebra Forum](#)

Jed's [Transformulas](#)

John's [GeoGebra Resources](#)

Audrey's [GeoGebraBook](#) of different instructional uses and [GeoGebra page](#)

Jen Silverman's [GeoGebra activities collection](#) and her [Geometry page](#), [GGBtube profile](#)

Global Math Presentations

- Jed, [Transformulas](#)
- Audrey, Jen and John, [Problem-based Lessons in GeoGebra](#)

#GGBChat [blog](#) and [twitter stream](#)

Handouts from a [GVSU GeoGebra](#) session (2012 but mostly relevant)

- [General Introduction to GeoGebra](#).
- [Start Up Tasks and Info](#)
- [Using the Spreadsheet](#)
- [Guide to Using Images](#)
- [Action Objects](#) (sliders, check boxes, input boxes and buttons)
- [Intermediate and Advanced Tasks](#)

Sharing

GeoGebraTube.org

Session Links and Tasks:

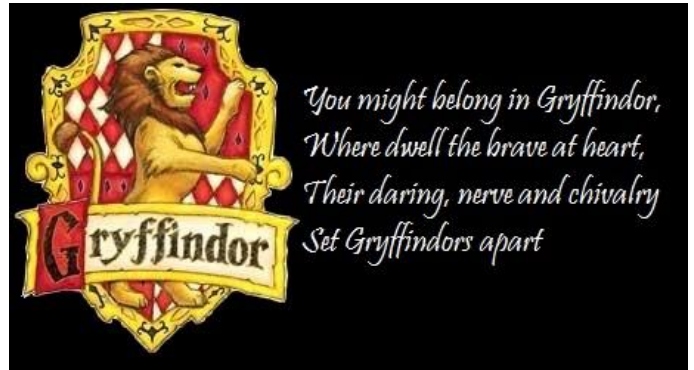
Beginners

(Gryffindor)

[Gryffindor Handout](#) - really spells it out

Program Basics

- Views: graphics, algebra
- Toolbar
 - pull down menus
 - hover help
- Input bar
 - type points, functions, numerical values
- Sliders
 - choose type and limits (can change later if needed)
 - unchecking fix slider lets you move it
- Graphics view controls: zoom, move



Task: Any or all of these, TOTALLY up to you:

1. Make a geogebra using an idea you already have

OR

2. Get to know tools from the student POV: [The Big Picture](#), [Equivalent Exponential Functions](#), [Absolute value function explorer](#)

OR

3. Try to reproduce one of the above

OR

4. For short vids + practice sheets go [here](#)

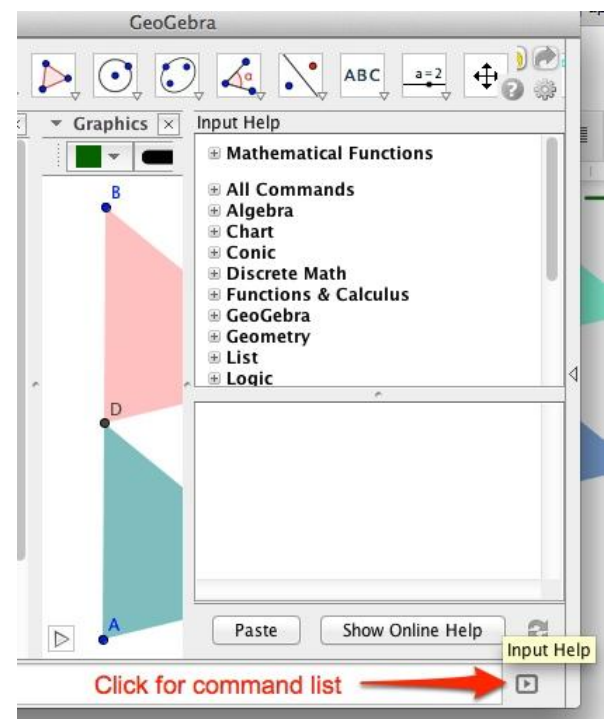
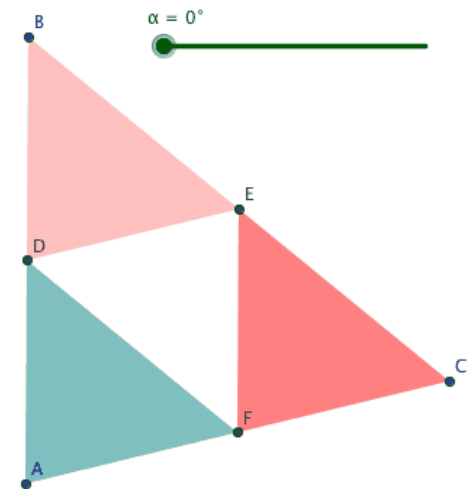
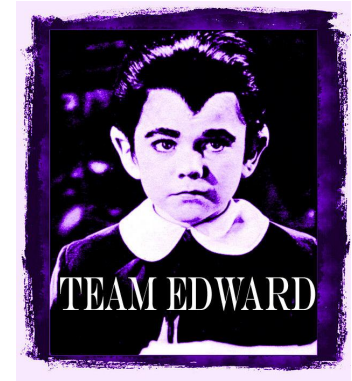
OR

5. Play!

Intermediate

(Team Edward)

- Object Properties options
 - Color\Opacity\Style
 - relative to type of object
 - Conditional Show
 - combine booleans (which include checkboxes)
 - checkboxes create boolean variables
 - in input bar can create one
 - bshow = false
 - Combine with operators
 - $a \ \&\& \ (b \ || \ c)$
 - conditions on defined objects and numbers
 - $x(A) > 3 \dots$
 - `IsDefined[]` - good way to check for intersections among other things
 - Layers
 - once you start using these, new objects are created in the top layer. So I try to finish the sketch then choose layers in moderation.
 - Selectability, helps reduce operator complexity
 - Dynamic Color
 - values between 0 & 1, can reference quantities from the sketch, use functions
 - Graphics View controls
 - right click empty space in graphics view or
- Command by input bar
 - start typing for suggestions
 - help menu at bottom right
- Powerful command:
 - `Sequence[ <Expression>, <Variable>, <Start Value>, <End Value> ]`
- Buttons
 - `ZoomIn[1]` - erase traces
 - `UpdateConstruction[]` - rerandomize
 - `SetValue(<object>, <value>)` - best way to assign values
 - `If[<condition>, <then>, <else>]` - else is optional



Task:

- invent your own!
- algebra: create a piecewise function using the If command, make a point on the x-axis to be the input, and show the output on the function. Degree of difficulty: make text messages that show up near the boundary between pieces.
- geometry: make a slider that controls the number of polygons and another that controls the number of sides of those polygons.
- Or, dynamicize one of the images from [Geometry Daily](#). (Here are some of [my attempts](#).)

Expert

(District 13)

What makes a sketch/applet aesthetically better?

Task: Your own, or try to dynamicize this Five Triangles problem...



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<!--[if lt IE 8]
<p class="browserhappy">You are using an <strong>outdated</strong> browser. Please
experience.</p>
<![endif]-->
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```

You silence our voices, but we are still heard.

```
-->

<div class="wrapper" id="wrapper"></div>
<div id="preload"></div>
```

REFLECTIONS:

(include name and reflection)

Claire Baxter (@cbaxter08)- Today a group of us learned how to use GeoGebra to explore area of triangles. This included sliders and organic movement (I think that's what it was called)-

so cool! I would love to learn more about how students can create in GeoGebra to demonstrate their own understanding. Thanks for all the info!