Using Geogebra for Student-Centred Learning

Please open the following Geogebra Workbook: tinyurl.com/MANSW2016

You can use this online or download it to your computer:

To Download:
1. Open tinyurl.com/MANSW2016 in a browser window.
2. Click on three dots in top RHS then click 'details'.
3. Click Download and agree to conditions, then click on 'Offline Book (.zip)'
4. Once downloaded (56MB), unzip (right click and extract all)
5. Then click on html file in expanded folder (bfYDpxNwk-Robin-Nagy---MANSW-Conference-2016)

SUNDAY 18TH SEPTEMBER 2016 (9:00AM – 10:30AM)

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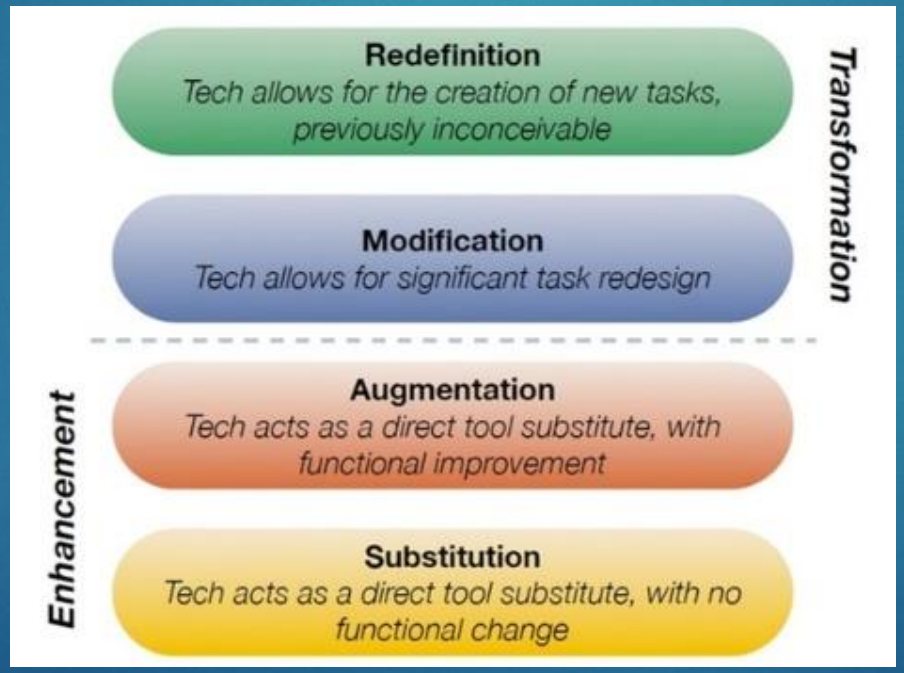
Introducing Geogebra

- Geogebra is a free multi-platform evolving tool for dynamic geometry and algebra investigation and exploration.
- SAMR Model (Dr Ruben Puentedura) - designed to help educators infuse technology into teaching and learning.



https://www.youtube.com/watch?v=us0w823KY0g

Basics of Geogebra

- Opening a new document
- Windows: Algebra, Graphics, Input Bar
- Style Bar
- Icon Menus (hover for description)
- Select/Move  and Move Graphics tools 
- Sliders for variables
- Nagy's Crib Sheet

Geogebra Tube ('Materials')

- https://www.geogebra.org/materials/
- Search
- Favourites
- Creating an account
- Embedding in LMS

Substitution (SAMR)

- Create worksheets using Geogebra – eg. 'Southern Cross'
- Create diagrams and graphs for worksheets and assessments

Augmentation (SAMR)

- Use Geogebra to demonstrate concepts such as circle theorems or polynomial coefficients.
  - https://www.geogebra.org/m/kxgHfpBT *Tim Brzezinski*
- Get students to use Geogebra to draw graphs of functions.
- Unit Circle and Trig Graphs
  - https://www.geogebra.org/m/RT7AWaSF *Peter22*
  - https://www.geogebra.org/m/wD8QcGZs *W Segers*
  - https://www.geogebra.org/m/nPSDaT8r *Brett Bellaire*
  - https://www.geogebra.org/m/S2gMrkbD *Anthony Or*

Modification (SAMR)

- Transformation of Functions - Worksheet
- Reflection and Rotation - Worksheet
- Enlargement - Worksheet
- Volumes of Revolution – demonstration/ student tool:
  - https://www.geogebra.org/m/YwY32W3F *Michael Borcherds*
  - https://www.geogebra.org/m/zBRtUVfR *Andreas Lindner*
  - https://www.geogebra.org/m/YdfnW2xv *Claudio*
- Area as limiting sum - Worksheet

Redefinition (SAMR)

- Centres of Triangle and Euler Line - Worksheet
- Introduction to Differentiatial Calculus as Limit of gradients - Worksheet

Creating Worksheets

- All Geogebra Tool Icons can be downloaded and used on worksheets.

Either at:

- https://www.geogebra.org/manual/en/Category:Tools_Icons

Or by opening the following folder in a downloaded Book:

Geogebra->images->ggb->toolbar

For example if you download my Geogebra Book for this presentation:

- https://www.geogebra.org/m/fYDpxNwk - R Nagy MANSW Conference 2016

Follow My Geogebra Page

- https://www.geogebra.org/robinnagy
- Email: robin@nagy.co.uk or rnagy@Redlands.nsw.edu.au