

Flags & Tech to Teach Math

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Created and Presented By

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Objective: Teachers will discover innovative activities for math concepts that engage students with flags & technology such as CNC Machines, Google Sheets Pixel Art, Desmos, & GeoGebra.

#1 CNC Machines (ordered pairs)

- ✓ Article
 - Remijan, K.W. (September 2018). "Cultivating the Machining Field by Planting Seeds in the Math Classroom". *The Record*. 24-27. <https://ntma.org/wp-content/uploads/2019/02/Sept18-Record-web-compressed.pdf>
- ✓ Free CNC Simulator Technology
 - <https://ncviewer.com/> (How to use ncviewer.com found at https://youtu.be/Z4V_qKuoMMk)
- ✓ Special Thanks
 - Mark Bosworth, Jerry Bonifield, and Mark Berry (Southwestern Illinois College) <https://www.swic.edu/academics/career-degrees/precision-machining-technology/>
- ✓ Activity Examples
 - Replicate the flag of Somalia
 - Replicate the Maple Leaf found on the Canadian flag

#2 Google Sheets Pixel Art (aspect ratio, dimensions, area, and perimeter)

- ✓ Resource
 - https://www.controlaltachieve.com/2017/02/sheets-pixelart.html?fbclid=IwAR2V11G_aY_jX_9K5iCN8ox3X-I20QBrP9R-6igFC3KuBleGKmaTjyN-yhg
- ✓ Activity Examples
 - Replicate the flag of Guinea
 - Remijan, Kelly W. (2020). "Flags of Africa: Teaching Algebra and Geometry with Technology" *Publications & Research*. 27. Retrieved from https://digitalcommons.imsa.edu/pfs_pr/27
 - Replicate/compare the Indigenous Wiphala flag & the National Flag of Bolivia

#3 Desmos & GeoGebra (linear equations/inequalities as well as equations/inequalities of circles)

- ✓ Research Flags (Aspect Ratio, Design, Colors, etc.)
 - Have students find the meaning behind the colors, design, etc.
 - Connect flag design to history, geography, culture, etc.
- ✓ Activity Examples
 - Replicate or create the equations making up the flag of Trinidad & Tobago using www.Desmos.com
 - Inspired by Remijan, K.W. (Jan/Feb 2019). "STEAMing Up Linear Functions". *Mathematics Teacher*. 250-256. <https://www.nctm.org/Publications/Mathematics-Teacher/2019/Vol112/Issue4/STEAMing-Up-Linear-Functions/>
 - Remijan, Kelly (2020). "Day 11 - Travel the World Through Flags: Desmos, Equations, and Inequalities" 19-19-19 "COVIDeos 19" *E-Learning Webinars*. 11. Retrieved from https://digitalcommons.imsa.edu/covideos_19_webinars/11
 - Replicate the flag of Colombia at the top of a 30 ft flagpole using www.geogebra.org/
 - Remijan, K. (In Development). Flags of the Americas: Connecting Algebra & Geometry Concepts
 - Replicate the flag of Nigeria or Reimagine the flag of the Republic of the Congo using www.Desmos.com
 - Remijan, K. (2021). Flag Designs of African Countries: Enriching the Graphing of Linear Equations and Inequalities in Algebra. *The Lighthouse Almanac*. 12-19. www.bbamath.org
 - Replicate/compare the flag of Bangladesh, the flag of Greenland, and/or the Australian Aboriginal Flag using equations/inequalities of circles