

Pixel Math Across All Levels

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Created & Presented By:

Kelly W. Remijan, PhD

Remote Professional Development and Curriculum Specialist

Illinois Mathematics and Science Academy (IMSA) – Center for Teaching & Learning

Email: kremijan@imsa.edu LinkedIn: <https://www.linkedin.com/in/kellyremijan/> Twitter: @Teachers4STEAM

Objective: Prek-12th grade teachers will discover how to use the concept of pixels and art to enhance the teaching & learning of various math concepts with and without technology

I. Activities

- A. Students write their name, sight words, spelling words, or secret messages using colored pixels.
- B. Students create their own videogame character, letter, piece of art, or design in the school bleachers.
- C. Students replicate, re-imagine, or create a piece of art or flag for a country.

II. Technology

A. Google Sheets Pixel Art

https://www.controlaltachieve.com/2017/02/sheets-pixelart.html?fbclid=IwAR2V11G_aY_jX_9K5iCN8ox3X-I20QBrP9R-6igFC3KuBIeGKmaTjyN-yhg

B. GeoGebra or Desmos

<https://www.geogebra.org/>

<https://www.desmos.com/>

III. Non-Technology Resources

A. Grid Paper or Graph Paper

<https://incompetech.com/graphpaper/lite/>

<https://incompetech.com/graphpaper/plain/>

B. Magnetic Grid Boards and./or Magnetic Tiles

<https://store.mathlearningcenter.org/supplies/MWS.asp?catid=>

https://www.eaeducation.com/Product/532074/Magnetic_QuietShape_Foam_1_Square_Tiles_10_Colors_-_Set_of_50.aspx

C. Starburst Math

https://digitalcommons.imsa.edu/pfs_tr/29/

IV. Questions

A. Pre-k and Up

- i. What color(s) do you need? How many _____ do you need?, or What color is at the top?
- ii. What color is first?, What color is below the _____ square?, or What pattern do you see?

B. Elementary, Middle School, and Up

- i. How many different colors? or What is the area?
- ii. What fraction is _____? or What percentage is _____?
- iii. What are the dimensions? or What is the aspect ratio?

C. High School

- i. What are equations/inequalities that create the figure?
- ii. What is the domain/range of the figure?

V. Support & Additional Resources

- A. **Contact me for mentoring, to bounce off ideas, or to meet via Zoom to discuss math curriculum, instruction, or other educational issues (kremijan@imsa.edu)**
- B. Video for using Desmos - https://digitalcommons.imsa.edu/covideos_19_webinars/11/
- C. Video for using GeoGebra - https://digitalcommons.imsa.edu/covideos_19_webinars/2/
- D. Remijan, K.W. (2021). “Flag Designs of African Countries: Enriching the Graphing of Linear Equations and Inequalities in Algebra”. The Lighthouse Almanac. 12-20.
<http://www.bbamath.org/index.php/lighthouse/>
- E. More Connections for Pixel Math in CS - <http://math.hws.edu/graphicsbook/c2/s1.html>
- F. Additional Math & Science Resources – www.IMSA.edu/Educator