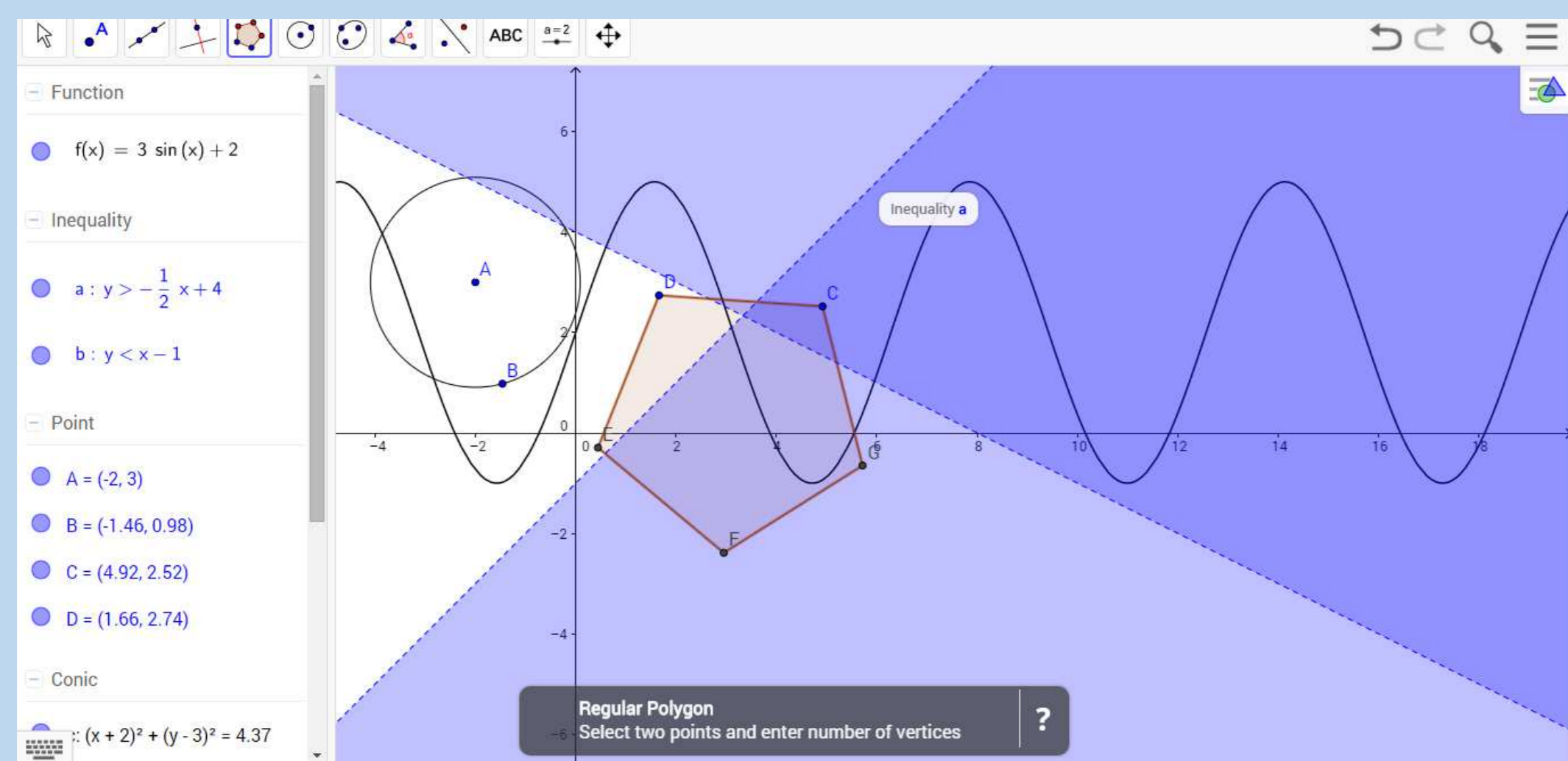
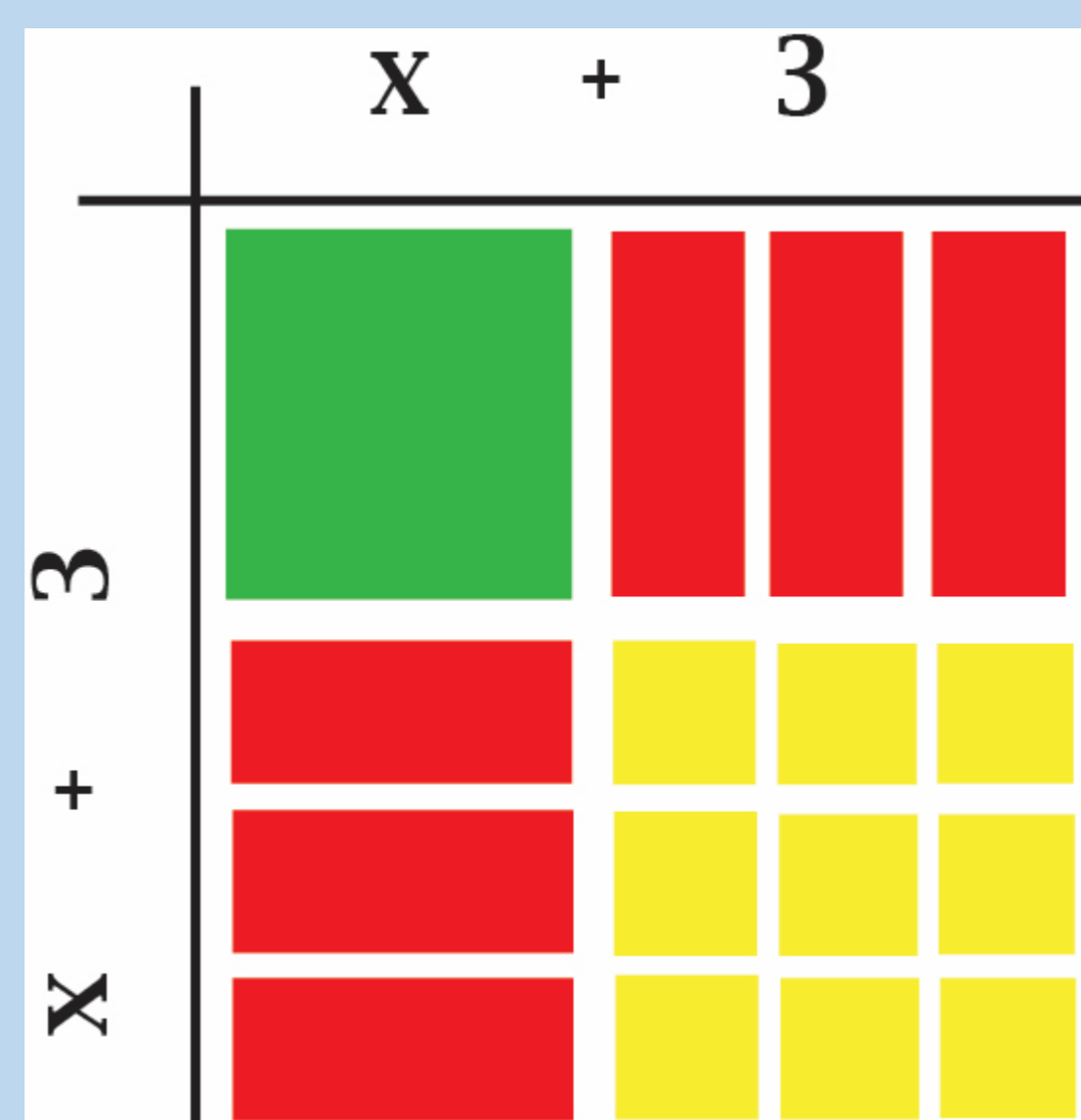


GeoGebra



Algebra Tiles



SIGVM

Special Interest Group on Visualizing Mathematics

Abstract

The aim of the Special Interest Group on Visualizing Mathematics (SIGVM) is to increase student understanding of mathematics through the use of visual representations, both physical and virtual. We believe our students are more successful in comprehending mathematics when visual representations are used. Through further research, we found this belief to be supported by the academic community. One proven instructional method is to first provide concrete examples, then representations, and finally create connections to abstract concepts (Flores, 2014). As we looked into how those representations could be created, we found research to support that virtual manipulatives are at least as effective as physical ones in learning certain mathematical concepts (Mendiburo and Hasselbring, 2014). This group was created to bring together educators who want to advance the research-supported use of visual representations in mathematics. SIGVM is a platform for teachers to collaborate with other peers about their personal experiences, connections to research, and specific content materials.

Tools and Resources

National Library of Virtual Manipulatives – Free java-run software on a variety of mathematics concepts K-12

PhET Simulations – Simulate mathematical concepts and enable pattern finding, teachers can share lesson plans



NCTM Illuminations – Interactives that simulate mathematical concepts, offers free complementary lesson plans



Geometer's Sketchpad – Create graphs, show geometric formulas and proofs

Graphing Calculators – Display graphs and tables, represent data, share with peers



Explore more:



MAETsigvm.wikispaces.com



MICHIGAN STATE UNIVERSITY

REFERENCES

ABSTRACT
Mendiburo, M. & Hasselbring, T. (2014). Technology's Impact on Fraction Learning: An experimental comparison of virtual and physical manipulatives. *Journal of Computers in Mathematics and Science Teaching*, 33(2), 209-231. Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).

Flores, M. M., Hinton, V., & Strozier, S. D. (2014). Teaching Subtraction and the Concrete-Representation Multiplication with Regrouping Using al-Abstract Sequence and Strategic Instruction Model. *Learning Disabilities Research & Practice*, 29(2), 75-88.

IMAGES
Greeley, P. (2015) GeoGebra example [online image].

Ledford, B. (2015) Algebra Tiles example [image].

Oleszkowicz, K. (2015) SIGVM [image].

Founders: Patrick Greeley, Drew Missureli, Kathryn Oleszkowicz