C² SUMMIT FOR PEDAGOGICAL ADVANCEMENTS IN STEM

FRIDAY, SEPTEMBER 29, 2023
8:45 AM–2 PM
RVCC EVENT CENTER

Resources for Teaching Functions in Developmental Math, Precalc, & Calc I

Concurrent Session, 1 Room 100: 10:10 am-10:55 am
 Abstract

   With a focus on functions, examine some digital manipulatives, spread sheets, and Geometer's Sketch Pads designed to bring movement to a math lecture or lab. Hear a slope. Go from slope to difference quotient to derivative. Use termtiles then sketchpad to compose functions to illustrate (line)(line)= (quadratic). "Concretely" translate and reflect graphs. Easily graph functions, composit functions, inverse functions. Graph Asin(Bx-C)+D by just changing the variables. Compute compounding, exponential, logistic, normal, ... models. All material, including Geometer's Sketchpad, is now free. Come play.

The Talk

- **Choose the best Math Class Language**.

- Hear a slope. **Slope in Sound & Picture**

- **Go from slope to difference quotient to derivative.**
  Take A Derivative by Taking The Limit of A Difference Quotient, then
  sheet 2 of fX.f'X.f''X.intX.gsp

- **Use termtiles then sketchpad to compose functions to illustrate**
  (line)(line)= (quadratic). Algebraic Multiplication with hot.xls then
  compositeFX.gsp or parabola.gsp or compositeFx.poly.ratl.gsp

"Concretely" translate and reflect graphs. parentFX2.gsp

- **Easily graph functions, composit functions, inverse functions. inverse.gsp**

- **Graph Asin(Bx-C)+D by just changing the variables. sine.xls**

- **Compute compounding, exponential functions and models exp2.xls**

- **STEM '23 video - a longer, more detailed presentation**

- **STEM '23 pdf - of this page**

Why Activate?

The Languages of the Math Classroom
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MOTHER TONGUE & OTHER TONGUE(S)
← Most Sophisticated and also the Most Basic →

MOSTLY MATH TONGUES
← Most Sophisticated, Most Basic →

VERBAL / Auditory	WRITTEN / Symbolic	PICTORIAL / Visual	CONCRETE / Kinesthetic
formal spoken mathematics	written word	DIGITAL MANIPULATIVE	object
informal spoken mathematics	written symbol	moving picture	model
spoken symbol	semisymbolic	static picture	manipulative/token
symbol speak	calculator symbol	numeral	
calculatoreze/computereze		graph	
web speak		nonverbal body language	

"Tell me and I forget, teach me and I may remember, involve me and I learn."
- Benjamin Franklin

Languages of the Math Classroom
Free Geometer's Sketchpad!

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