

# Teaching Math

*Through*

**MOTION**

*About Me*

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- **Algebra 1**
- **Algebra 2**
- **Advanced Math Elective**

# Rock, Paper, Scissors Math?

## The Original Version:

### Rock, Paper, Scissors Math (Multiplication)

- \* Students play in pairs
- \* In unison, students chant “Rock, Paper, Scissors, Math”
- \* When “Math” is said, students choose between 1 and 5 fingers to throw down.
- \* The first student to correctly identify the product of the two numbers of fingers wins.



Creative Commons – Mark Turnaukas

## Playing Options:

- Bracket Style
- Elimination Style
- Brain Break Style

10112013 - SMART Notebook

File Edit View Insert Format Tools Add-ons Help

The notebook displays a grid of student names with handwritten annotations and star trails:

- Row A:** Casey, Emily
- Row B:** Ashlee, Josh
- Row C:** Cassidy, Aubrey
- Row D:** Patrick, Kallie
- Row E:** Bethany, Trisha

Handwritten annotations include:

- Red star trails forming the letters 'A', 'W', and 'H'.
- Red text: "Emily", "Katie = Aubrey", "Katie = Aubrey", "Trisha", "Katie = Trisha".
- Green text: "Wins" at the bottom.
- Numbered boxes: "1 Kolton", "2 Gamantha", "3 Candace".
- Hand-drawn figures: a yellow pencil character and a blue and red striped figure.

Windows taskbar: start, Blogger: Math = Love..., Smart Notebook Files ..., 10112013 - SMART N..., 4:36 PM



# Rock, Paper, Scissors Variations

## Integer Operations

- \* Could use for addition/subtraction or multiplication
- \* Teacher decides on operation before students play.
- \* Hold number of fingers above palm to represent positive number.
- \* Hold number of fingers below palm to represent negative number.
- \* The winner is the first student to correctly perform the chosen operation.

## Squares or Cubes Practice

- \* Teacher decides whether students are practicing squares or cubes.
- \* Students add the number of fingers thrown by both players.
- \* The first student to correctly square or cube the sum wins.
- \* Interesting twist – use above/below differentiation to bring negatives into the mix.

# Rock, Paper, Scissors Variations

## Parts of the Coordinate Plane

- \* The student standing to the left should represent the x-coordinate. The student standing to the right should represent the y-coordinate.
- \* Students have three options to throw down:
  - Positive Sign
  - Negative Sign
  - Zero
- \* The winner is the first student to correctly identify which part of the coordinate plane this ordered pair identifies.
  - Quadrant I, II, III, IV
  - X-Axis
  - Y-Axis
  - Origin

# Rock, Paper, Scissors Variations

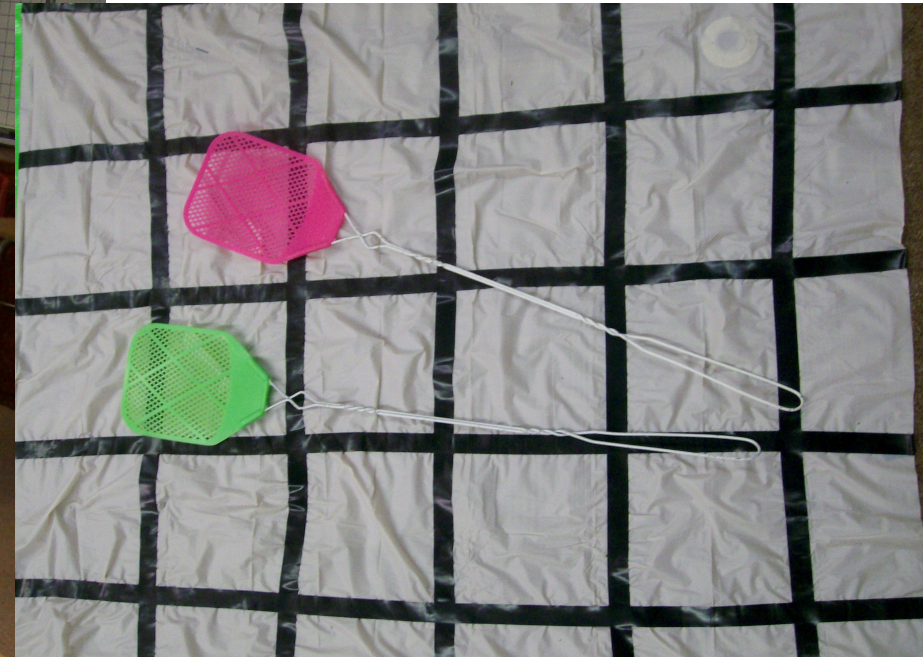
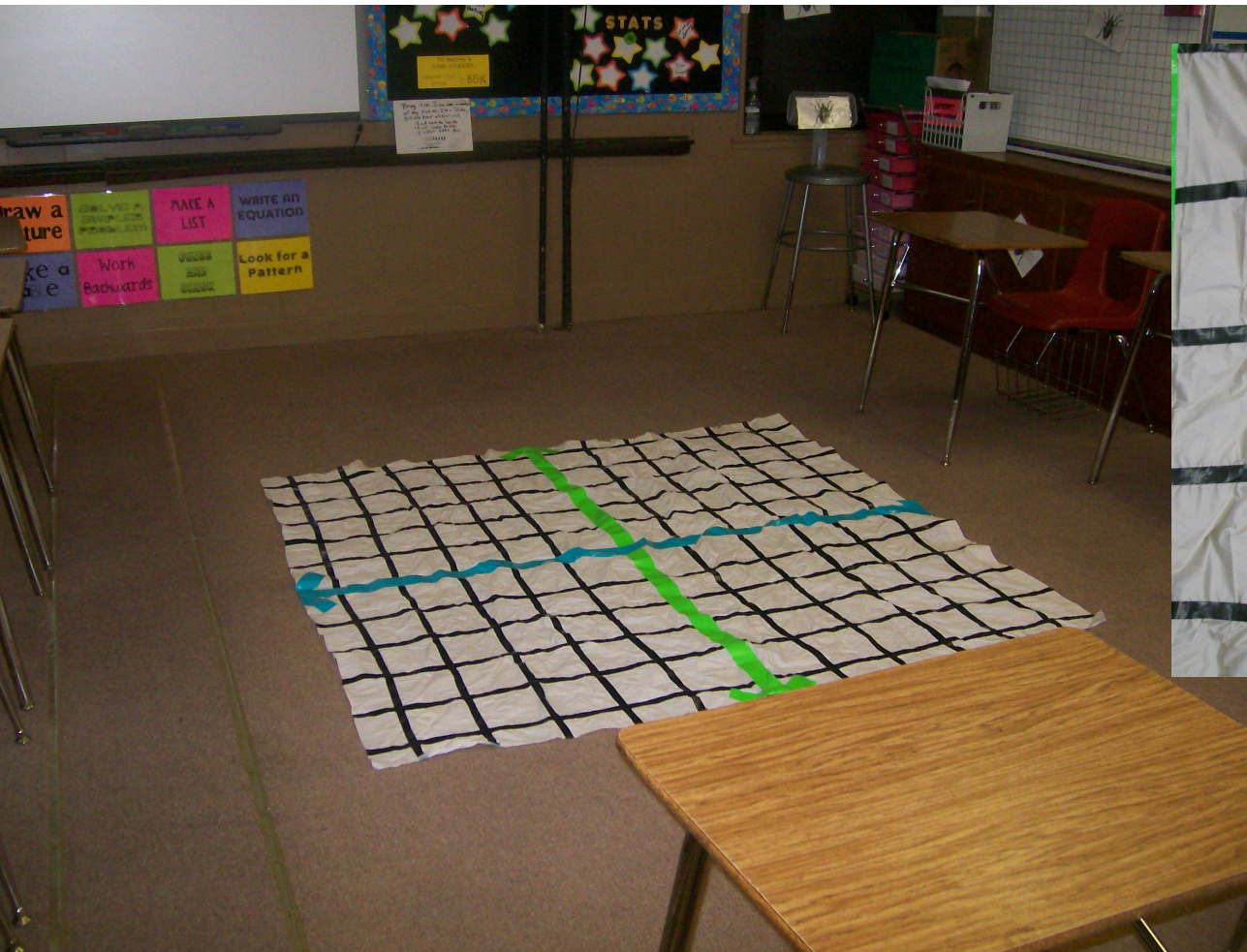
## Simplifying Imaginary Numbers

- \* Each student throws down 0-5 fingers.
- \* The sum of both throws becomes the exponent of the imaginary number,  $i$ .
- \* The winner is the first person to correctly simplify the expression.

## Multiplying Imaginary Numbers

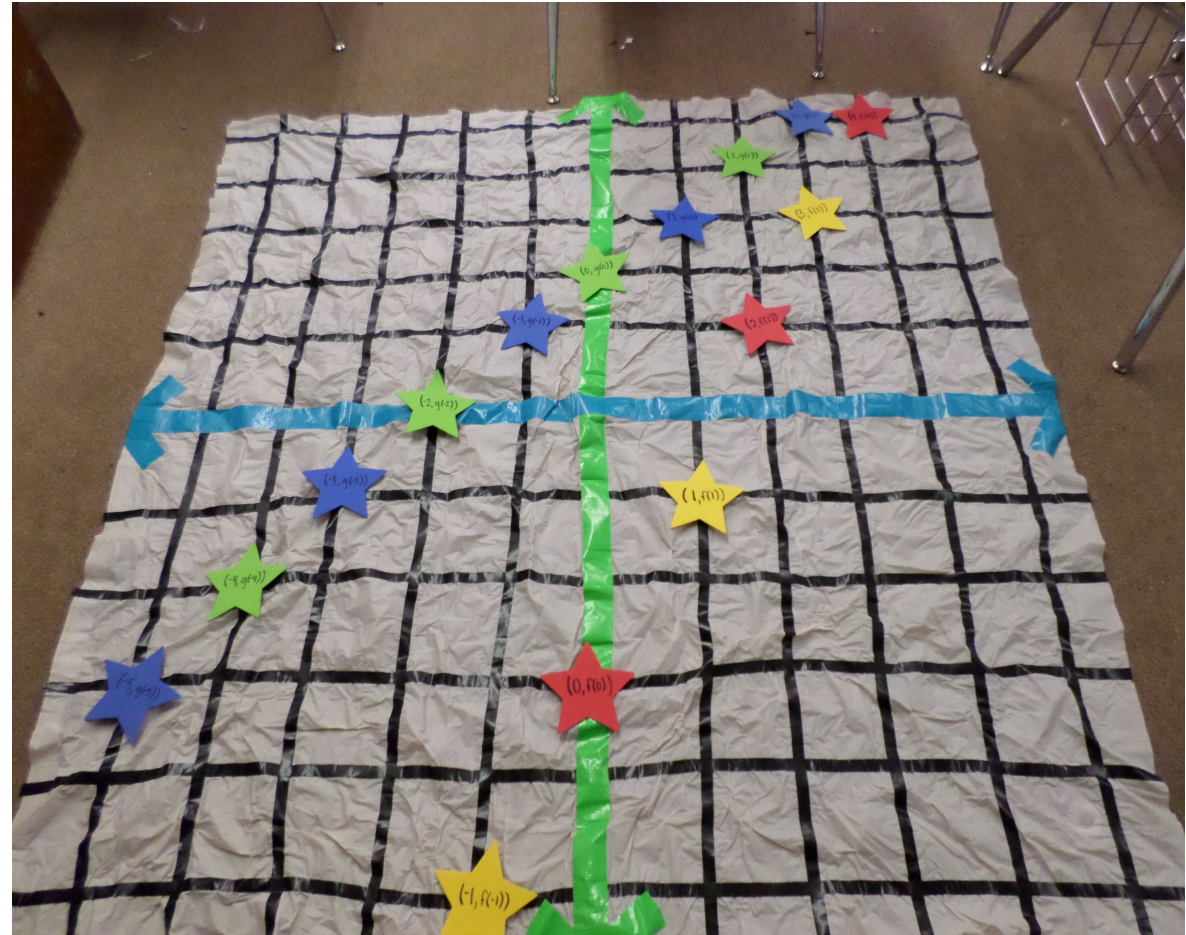
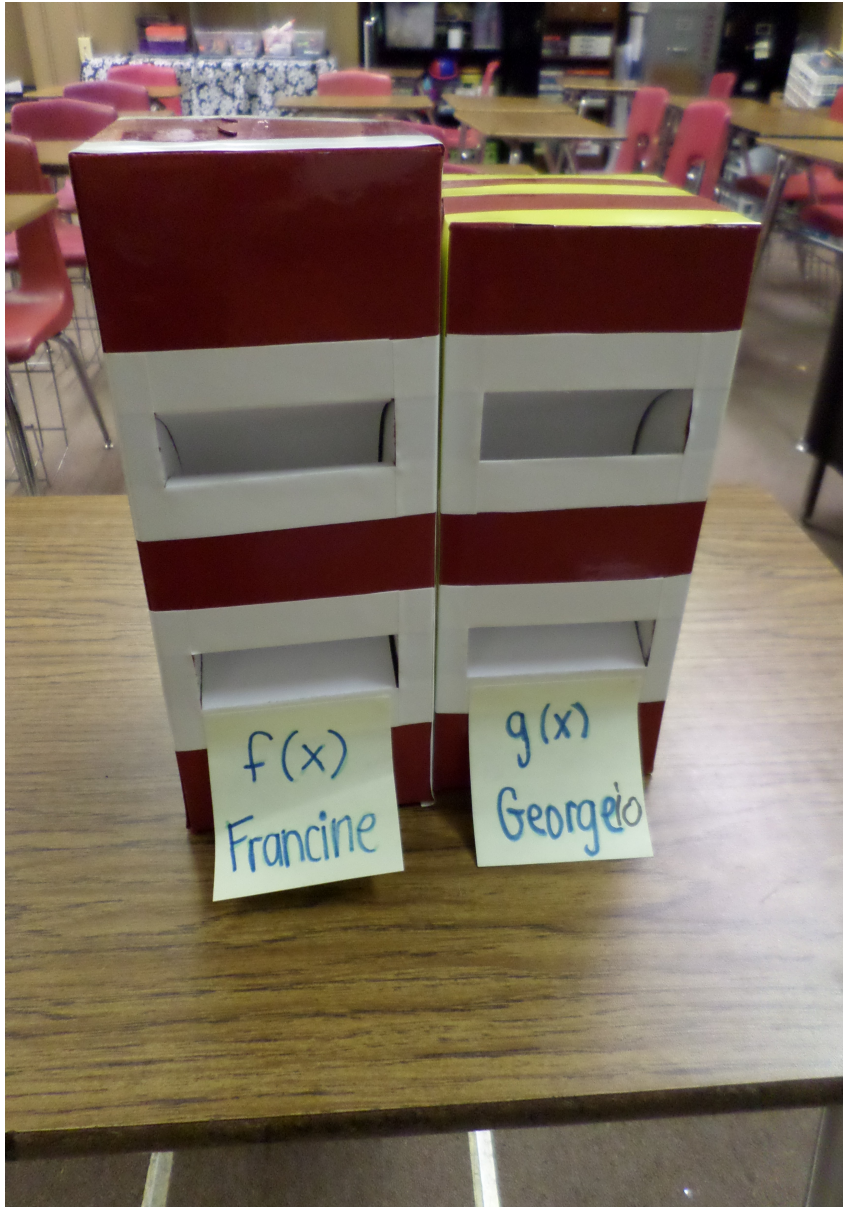
- \* Students may choose to throw a real number or an imaginary number.
- \* To throw a real number, students simply throw that number of fingers.
- \* To throw an imaginary number, students throw the coefficient with their left hand and throw a single finger on their right hand to represent the  $i$ .
- \* You can also use above/below differentiation to represent positive and negative numbers.
- \* The winner is the first person to correctly multiply the two numbers together and simplify the answer.

# Giant Coordinate Plane





# Function Machines



# Possible Variation(s)

- Graphing Trig Functions
- Parallel Lines Cut By A Transversal
- Unit Circle

# Slope Dude Says...

- \* All students start the game by standing.
- \* Follows the rules of Simon Says. If Slope Dude doesn't say to do something and you do it (or flinch), you are out and must sit down.
- \* Teach students four motions before beginning: positive slope, negative slope, zero slope, undefined slope.
- \* Winner is the last student standing.

# Tricks to Employ

- Ask students to perform a motion without saying “Slope Dude Says.”
- Do one motion while asking students to do a different motion.
- When only a few students are left, ask the students to come up to the front of the room so everyone can see them better. Once they start moving, tell them that Slope Dude didn't ask them to come up to the front, so they are out!
- Throw in a “[Your name] Says.”

# Possible Variation(s)

- Types of Angles
  - Create motions to represent acute, obtuse, right, and straight angles.

# Dance, Dance, Transversal

<http://algebrabrainiac.wordpress.com/2013/10/22/dance-dance-transversal/>



# **Dance, Dance, Coordinate Plane**

Use masking tape/painters tape to create sets of axes on the floor. Each quadrant needs to be large enough for students to stand in without having to stand on the x- or y-axis.

Create a presentation that features different sequences of dance moves for students to perform.

Example: QI, X-Axis, QIII, Origin