Activity Name	Grade Level	Description	Teacher Notes: How did this go in your classroom? Recommendations for future use?
Adding Whole Numbers	1-3	Students play a game where they are dealt whole number cards & have to make a sum	
Talking Time	3-5	Students explore the different ways people speak about time e.g. "A quarter past four"	
Shaded Rectangles	3-5	Polygraph designed to spark vocabulary rich conversations about fractions and part-to-whole relationships	
Get Close to Me	4-5	Rounding decimals	
Equivalent Fractions	5-6	Compare, group, & shade equivalent fractions	
Target Practice	6-7	Students identify ordered pairs to hit the bullseye of a target	
Battery - Percents, Decimals, & Fractions	5-6	Estimate & explore percentages, decimals, & fractions	
What's in a Name?	3-6	Students create dot plots with whole numbers	
Writing & Evaluating Expressions	5-6	In this activity, students will practice identifying equivalent and comparing expressions in numeric and word form.	
Fraction Point Collector	5-6	Create & shade fractions to collect points - compare & create equivalent fractions	
Wolves & Sheep Challenge	4-12	Logic Puzzle	
Adding & Subtracting Fractions	4-5	Use visual models to add & subract fractions with like and unlike denominators	
Strength in Numbers	6-7	Introductory lesson for measures of center - median vs mean - students make estimations and analyze dot plots of their classmates estimates	
Creating Histograms	4-6	Students create histograms and tables from information provided	
Collect the Coconuts	6-7	Students practice finding horizontal & vertical distances on the coordinate plane by finding distances between islands	
Combine Like Terms	6-7	Sort, drag, & combine like terms	
Ordering Rational Numbers	6-7	Place & order rational numbers on number lines	
Creating Relative Frequency Histograms	6-8	Students compare and contrast histograms & relative frequency histograms	
What's My Number?	7-9	In this activity students develop their intuition for mean absolute deviation. We start with a simple question: "Can you guess my number?" Students submit a guess, receive feedback (too low, too high), and continue revising until they guess the target number.	
Graphing Inequalities	6-7	Exploring single-variable inequalities	
Data Displays	6-7	Histograms & Line plots	
Box Plots	6-7	Practice identifying mean, median, lower quarter, upper quartile	
Box Plot - Sports	6-7	Practice identifying mean, median, lower quarter, upper quartile	
Visual Ratios	6-7	Explore & compare ratios of part to part and part to whole	
Ordering Integers	6-7	Practice placing integers on number lines	
Super Bear	6-7	Practice unit rates, ratios, proportions, and constant of proportionality	
Multiplying Integers	6-8	Visual representations of multiplying integers on a number line	
5 in a Row: Integer Game	6-8	Game practicing adding & subtracting integers - requires more prep with integer cards but great game!	
Integer Game	6-8	Game practicing adding integers - very little prep, easy to follow	
Zombie Apocalypse	6-8	A game for practicing horizontal, vertical and diagonal distances on the coordinate plane (Last level include Pythagorean Theorem)	
Whole Numbers & Integers on a Number Line	6-8	Work on placing and spacing whole numbers and integers on a number line to explore numerical relationships that lead to distances and operations like addition and subtraction.	
Distributive Property	7-8	Explore the distributive property both visually & algebraically - first half is numbers, second half contains variables	
Shady Lines	7-9	Polygraph: Exploring graphs of linear inequalities - great for beginning of unit to determine student's background & misconceptions	
Growth Patterns	7-10	Students observe patterns, create next pattern, complete a table, & write an equation for the sequence (Linear then quadratic)	
Growth Patterns (Longer version)	7-10	Students observe patterns, create next pattern, complete a table, & write an equation for the sequence (Linear then quadratic)	
Scientific Notation	8-9	Brief practice of scientific notation - comparing & sorting	
iPhone Modeling	9-12	In this activity, students use previous iPhone sales data to make predictions about the number of iPhone 6s units sold during its opening weekend in September 2015. Students choose from linear, quadratic, or exponential models, or build their own based on a different function of their choosing.	
Bivariate Data	8-9	Brief practice of two-way tables followed by a question on a linear system of equations	
Math 8 Exponents	8-9	Brief practice with properties of exponents	
Math 8 Functions	8-9	Practice with a variety of functions - interpreting graphs, writing equations of lines, etc.	
Kung Fu Transversals	7-10	Practice with angle relationship vocabulary - corresponding angles, alternate interior, alternate exterior, etc.	
Distance on Coordinate Plane	8-10	Introductory lesson for using Pythagorean Theorem on the coordinate plane	
Square Dance - Square Roots	8-10	Explore the relationship between the area and side length of squares leading to rational and irrational numbers	
Des-moji	8-10	Create a character out of linear and quadratic equations using domain & range	
Translations	8-10	Introductory activity for translations on the coordinate plane including coordinate notation (x+4, y -2)	
Dilations	8-10	Practice dilating shapes on the coordinate plane - great visuals - compare reduction vs enlargement	
Rotations	8-10	Practice with rotations on the coordinate plane - 90 and 180 degree rotations	
Linear Functions/Tables	8-9	Practice linear function relationships from tables, equations, & graphs -- similar to Marbleslides	
Estimation 180 Basketball Stories	7-9	Use this activity to explore a constant rate, graphing the constant rate in a coordinate plane, constant of proportionality, and eventually have students create their own graphing story scenario.	
Winking Boy	8-10	Re-create a character using linear functions with domain & range restrictions	
Slope-Intercept	7-9	Practice creating & comparing equations in slope-intercept form	
Ramps	7-10	Polygraph: Explore a variety of slope triangles on the coordinate plane - encourage student discussion	
Math 8 Pythagorean Theorem	8-10	Practice using the Pythagorean Theorem to find missing lengths on and off the coordinate plane	
Styrofoam Cups	7-10	Use a linear & discrete function to stack cups to a certain height	
Barbie Bungee	8-10	Requires more prep in advance - students will collect, analyze, & interpret data ultimately finding a line of best fit	I've heard a lot of good things about this in the math Twitter world! Read more by clicking this link- Kourtney
Linear Hunch	7-10	Begin by using numberless word problems to establish an understanding of linear relationship. In part 2, use numbers to explore the stories in more depth as represented in tables, graphs, and equations	
Lava and Piecewise Functions	9-12	Students will be faced with four lava piecewise challenges. The goal is for students to write piecewise functions (with domain restrictions) in an attempt to avoid the red blobs of hot lava and make it to safety	This one looks really cool! :) -Kourtney
Linear Systems	8-12	Brief practice of graphing linear systems - students are required to use critical thinking skills to create graphs that fit descriptions	
Three's A Crowd	8-12	Students explore linear inequalities (and systems of linear inequalities), with an emphasis on the graphical and algebraic meaning of solutions.	
Knot That Rope	8-12	Requires more prep in advance - students will collect & analyze data relating the number of knots to the length of a rope and graph linear functions	More info at this link
Expressions Mash-Up	9-12	In this activity, students sort cards to strengthen their understanding of multiple representations, including: algebraic expression, verbal description, table of values, and algebra-tile model	
Stacking Cups	8-12	Using linear systems (and discrete functions) to explore where two different sized cups will tie (in height and number of cups). -linear systems -point of intersection -apply the math by creating a third cup	More info at this link
Linear System Estimation	8-9	Students predict where two lines will intersect and then confirm on coordinate plane - great intro lesson for systems of equations	
Similar Figures	7-10	Brief practice of sorting, comparing, & identify similar triangles	
Multiply Coordinates - Dilations	7-10	Students explore different scale factors and their effect on the graph of a dilation of a figure	
Match My Circles	10-12	Practice transforming & writing equations of circles with graphs	
Quadratics Review	9-12	Students are given restricted information & are asked to find attributes of parabolas	
Circles	10-12	Practice with circle vocabulary such as chord, secant, tangent, etc.	
Des-Patterns	8-10	In this activity students will practice writing coordinate rules to transform figures to complete patterns. They'll end by designing their own pattern and using the math they've learned to extend a pattern designed by a classmate	
Special Right Triangles	10-12	Explore side length relationships of 45-45-90 and 30-60-90 triangles	
Absolute Value Equations	8-12	Explore the relationship between absolute value equations & their graphs on a number line in contextual examples	
Dr. Evil	9-12	Students explore concepts of inflation, exponential growth, compound interest, and more all in one task	More info at this link
Parallel & Perpendicular Lines	8-10	Students explore the relationship between parallel & perpendicular lines	
Area: Multiplying Polynomials	8-10	Use an area model and the distributive property to conceptually build understanding of multiplying polynomials (specifically binomials)	
Features Hunt	10-12	Great way to familiarize students & teachers with how to type in certain functions in Desmos	
Parabola Transform-ula	9-12	Students explore the effects of a, h, & k on the graph of a parabola	
Geometry Transformations Tutorial	8-12	Students explore how to perform translations, reflections, rotations, & dilations using the Geometry DESMOS tools	
Quadrilaterals Polygraph	8-12	Polygraph: Students play a game with others in the class using attributes of quadrilaterals	
Quadrilaterals	8-12	Students build & explore quadrilaterals & their properties	
Function Transformations	11-12	Students transform absolute value functions, parabolas, hyperbolas, & square root functions to match given graphs	
Ferris Wheel	10-12	Students explore the function relationship between the height of a red car on a ferris wheel vs time	
Polynomial Matching	11-12	Match cards based on intervals, zeros, and end behavior of polynomial functions.	
Inverse Functions	9-12	Students explore inverse functions & their relationships	
Captain Jack	11-12	Two boats: will they collide? A calculus activity	
Totes	11-12	Polygraph: Students explore & discuss asymptotes on graphs	
Intro to Integration	11-12	An aerobics instructor is designing a 1-hour workout for the stationary bicycle. For best results, the speed of the wheels should stay between 10 mph (miles per hour) and 15 mph. Students will see five different workouts she is considering. The big question: What is a good estimate for "virtual distance" traveled? A calculus activity	
Big Box & Cupcake Holder	11-12	Calculus/Optimization: Students explore relationship between corner cuts, radii, & volume -- Requires some prep ahead of time	
Coloring Estimates	11-12	Calculus/Related Rates,Trig,Integration: Students explore shading 1/2, 1/4 of various figures	
Integrals Polygraph	11-12	Polygraph: Students will have the opportunity to discuss informal and formal attributes of integrals.	
Ketchup Containers	3-12	Students use estimation skills to make predictions about volume of different containers & graph results	This is meant for multiple days - could be great for an enrichment activity - K
Land the Plane	8-9	Students practice finding equations of lines in order to land a plane on a runway. Most of the challenges are well-suited to slope-intercept form, but depending on the goals of an individual class or student they are easily adapted to other forms of linear equations	
Match My Line	8-9	Students work through a series of scaffolded linear graphing challenges to develop their proficiency with direct variation, slope-intercept, point-slope, and other linear function forms.	
Solutions to Systems of Linear Equations	8-9	Students explore what it means for a point to be a solution on one and two lines to explore systems of linear equations algebraically & graphically	
Graphing Stories	6-8	This activity will help students make the transition from one-variable representations (eg. number lines) to the TWO-variable representation of the coordinate plane. Students will watch 15-second videos and translate them into graphs with your help	
Transformation Golf: Rigid Motion	8-10	Students use their existing understanding of translations, reflections, and rotations to complete a round of transformation golf. For each challenge, their task is the same: Use one or more transformations to transform the pre-image onto the image	
Transformation Golf: Non-rigid Motion	8-10	Students use their existing understanding of translations, reflections, rotations, & dilations to complete a round of transformation golf. For each challenge, their task is the same: Use one or more transformations to transform the pre-image onto the image	
Click Battle	6-7	In this proportional reasoning activity, students will explore unit rate in the Click Battle arena.	
Will It Hit the Hoop?	9-11	In this activity, students predict whether various basketball shots will go through the hoop, and then model these shots with parabolas to check their predictions.	

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