The Number System

8.NS.1 - **Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour.***

Video(s):
http://learnzillion.com/lessonsets/41

https://www.youtube.com/watch?v=iFh2VvM9iyM - Introduction to Unit Rates (10)

https://www.youtube.com/watch?v=liW_ALj4Qj8 - Apply Unit Rates and Ratios in the Real World | Common Core Math (10)

Worksheet(s):

Game/Software Links:
http://www.virtualnerd.com/pre-algebra/ratios-proportions/rates-word-problem-solution.php - Overview of background concepts (10)

http://www.mathsisfun.com/measure/unit-price-game.html - Unit Price online game (10)

Apps: (Android or IOS)

https://itunes.apple.com/us/app/middle-school-math-8th-grade/id669529866?mt=8 - iTunes website for 8th grade math apps (10)

Chapter:

8.NS.2(a) - Estimate irrational numbers value and locate them on a number line.

Video(s):
https://www.youtube.com/watch?v=zxMGkta8w7U - Estimating Irrational Numbers (10)

Worksheet(s):
http://www.lumoslearning.com/llwp/resources/common-core-parcc-math-english-worksheets/sample-worksheets.html?cur=558&id=7699 - Estimating Irrational Numbers (10)

Game/Software Links:
https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-approximating-irrational-numbers/e/approximating-irrational-numbers-without-a-calculator - Khan Academy link (very useful website for tutorials and practice on all topics) (10)

Apps: (Android or IOS)

Chapter:

8.NS.2(b) - Approximate irrational numbers into rational numbers.

Video(s):

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

Expressions & Equations

8.EE.1 - Apply the properties of integer exponents to create equivalent expressions.

Video(s):
http://learnzillion.com/lessonsets/307

Worksheet(s):
8.EE.1 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.2(a)- Evaluate square root and identify which is a perfect square or irrational number.

Video(s):
http://learnzillion.com/lessonsets/351

https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-square-roots/v/approximating-square-roots (10)

Worksheet(s):
8.EE.2(a) Practice Worksheet

Game/Software Links:

http://study.com/academy/lesson/simplifying-square-roots-when-not-a-perfect-square.html (10)

https://www.mathsisfun.com/square-root.html (10)

Apps: (Android or IOS)

Chapter:

8.EE.2(b)- Evaluate cube root symbols to determine which is a perfect cube or irrational number.

Video(s):

http://learnzillion.com/lessonsets/45

https://www.khanacademy.org/math/pre-algebra/pre-algebra-exponents-radicals/pre-algebra-cube-root/v/finding-cube-roots (10)

Worksheet(s):
8.EE.2(b) Practice Worksheet

Game/Software Links:

https://learnzillion.com/resources/72622-understand-perfect-cubes-and-cube-roots (10)

Apps: (Android or IOS)

Chapter:

8.EE.3- Estimate very large and very small numbers using the power of 10.

Video(s):
http://learnzillion.com/lessonsets/272
https://learnzillion.com/resources/72709-estimate-and-compare-with-integers-to-the-power-of-10-8-ee-a-3 (10)

Worksheet(s):
8.EE.3 Practice Worksheet

Game/Software Links:

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http://ed.ted.com/lessons/michael-mitchell-a-clever-way-to-estimate-enormous-numbers (10)

Apps: (Android or IOS)

Chapter:

8.EE.4- Perform operations with scientific notation.

Video(s):
http://learnzillion.com/lessonsets/276

Worksheet(s):
8.EE.4 Practice Worksheet

Game/Software Links:
http://www.webmath.com/sn_convert.html
http://www.xpmath.com/forums/arcade.php?do=play&gameid=21
https://janus.astro.umd.edu/astro/scinote/

Apps: (Android or IOS)
--Google "scientific notation apps"

Chapter:

8.EE.5(a)- Compare different proportional relationships in different ways (graphs, equations…)

Video(s):
http://learnzillion.com/lessonsets/275

Worksheet(s):
8.EE.5(a) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.5(b)- Interpret the slope of a graph as the unit rate.

Video(s):
http://learnzillion.com/lessonsets/275

https://www.youtube.com/watch?v=a1aXFFuH66Q (10)

Worksheet(s):
8.EE.5(b) Practice Worksheet

Game/Software Links:

https://www.khanacademy.org/math/algebra-home/alg-linear-eq-func/alg-slope/v/slope-and-rate-of-change (10)

Apps: (Android or IOS)

Chapter:

8.EE.6(a)- Determine slope between any two distinct point on a graph.

Video(s):
http://learnzillion.com/lessonsets/274

Worksheet(s):
8.EE.6(a) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.6(b)- Interprete the equation y=mx+b from a graph.

Video(s):
http://learnzillion.com/lessonsets/274

Worksheet(s):
8.EE.6(b) Practice Worksheet
8.EE.6(b) Practice Worksheet
Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.7(a)- Solve linear equations without using distributive properties.

Video(s):
http://learnzillion.com/lessonsets/128

Worksheet(s):
8.EE.7(a) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.7(b)- Solve linear equations by expanding expressions using distributive properties.

Video(s):
http://learnzillion.com/lessonsets/128

Worksheet(s):
8.EE.7(b) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.8(a)- Solve systems of linear equations by a graph using real world problems.

Video(s):
http://learnzillion.com/lessonsets/129

Worksheet(s):
8.EE.8(a) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.EE.8(b)- Solve systems of linear equations algebraically using real world problems.

Video(s):
http://learnzillion.com/lessonsets/129

Worksheet(s):
8.EE.8(b) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

Functions

8.F.1 - Determine the output (input) by knowing the function and input (output).

Video(s):
http://learnzillion.com/lessonsets/271

Worksheet(s):
8.F.1 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.F.2 - Compare properties (e.g., rate of change, intercepts, domain and range) of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.

Video(s):
http://learnzillion.com/lessons/290-compare-distancetime-graphs-with-distancetime-equations.

Worksheet(s):
8.F.2 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.F.3 - Determine which functions are linear and non-linear and give examples.

Video(s):
http://learnzillion.com/lessonsets/277

Worksheet(s):
8.F.3 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.F.4(a) - Determine the rate of change and initial value from a table, graph, and equation.

Video(s):
http://learnzillion.com/lessonsets/357

Worksheet(s):
8.F.4(a) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.F.4(b) - Interpret the rate of change and initial value into the context of the situation.

Video(s):
http://learnzillion.com/lessonsets/357

Worksheet(s):
8.F.4(b) Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.F.5 - Sketch a graph and describe where it is increasing, decreasing, constant, linear, and nonlinear.

Video(s):
http://learnzillion.com/lessonsets/358

Worksheet(s):
8.F.5 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

Geometry

8.G.1 - Verify experimentally the properties of rotations, reflections, and translations.

a. Lines are transformed to lines and line segments to line segments of the same length
b. Angles are transformed to angles of the same measure
c. Parallel lines are transformed to parallel lines .

Video(s):

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.2 - Identify congruent figures and describe a sequence of rotations, reflections, and translations.

Video(s):

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.3 - Describe the effects of dilations, translations, rotations, and reflections.

Video(s):

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.4 - Identify similar figures and describe a sequence of dilations, rotations, reflections, and translations.

Video(s):
http://learnzillion.com/lessonsets/289

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.5 - Find angle measures based on facts about angle sums.

Video(s):
http://learnzillion.com/lessonsets/115

Worksheet(s):
8.G.5 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.6 - Explain a proof of the Pythagorean Theorem.

Video(s):
http://learnzillion.com/lessonsets/279

Worksheet(s):
8.G.6 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.7 - Apply the Pythagorean Theorem to determine unknown side lengths in real world situations.

Video(s):
http://learnzillion.com/lessonsets/279

Worksheet(s):
8.G.7 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.8 - Apply the Pythagorean Theorem to find a distance on a coordinate system.

Video(s):
http://learnzillion.com/lessonsets/287

Worksheet(s):
8.G.8 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.G.9 - Apply the formulas for a cylinder, cone, and sphere to solve real world problems.

Video(s):
http://learnzillion.com/lessonsets/286

Worksheet(s):
8.G.9 Practice Worksheet

Game/Software Links:

Apps: (Android or IOS)

Chapter:

Statistics & Probability

8.SP.1(a) - Construct a scatterplot between two variables.

Video(s):
http://learnzillion.com/lessonsets/143

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.SP.1(b) - Describe patterns such as clusters, outliers, pos. / neg. assoc., linear, and non-linear.

Video(s):
http://learnzillion.com/lessonsets/143

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.SP.2 - Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit (e.g., line of best fit) by judging the closeness of the data points to the line

Video(s):

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.SP.3 - Solve problems in the context of the scatterplot by using a linear model by finding the slope and intercept and using the equation.

Video(s):
http://learnzillion.com/lessonsets/254

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.SP.4(a) - Construct data on two way relative frequency tables.

Video(s):
http://learnzillion.com/lessonsets/295

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter:

8.SP.4(b)- Interpret and describe data on two way relative frequency tables.

Video(s):
http://learnzillion.com/lessonsets/295

Worksheet(s):

Game/Software Links:

Apps: (Android or IOS)

Chapter: