

# Grade 8

## Expressions, Equations and Inequalities

### A Work with radicals and integer exponents. 8.EE1.A

- 1 Know and apply the properties of integer exponents to generate equivalent expressions. 8.EE1.A.1
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### B Understand the connections between proportional relationships, lines and linear equations. 8.EE1.B

- 6a Explain why the slope ( $m$ ) is the same between any two distinct points on a nonvertical line in the Cartesian coordinate plane. 8.EE1.B.6A
  - 6b Derive the equation  $y = mx$  for a line through the origin and the equation  $y = mx + b$  for a line intercepting the vertical axis at  $b$ . 8.EE1.B.6B
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### C Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations. 8.EE1.C

- 7a Create and identify linear equations with one solution, infinitely many solutions or no solutions. 8.EE1.C.7A
  - 7b Solve linear equations and inequalities with rational number coefficients, including equations and inequalities whose solutions require expanding expressions using the distributive property and combining like terms. 8.EE1.C.7B
  - 8a Graph systems of linear equations and recognize the intersection as the solution to the system. 8.EE1.C.8A
  - 8b Explain why solution(s) to a system of two linear equations in two variables correspond to point(s) of intersection of the graphs. 8.EE1.C.8B
  - 8c Explain why systems of linear equations can have one solution, no solution or infinitely many solutions. 8.EE1.C.8C
  - 8d Solve systems of two linear equations. 8.EE1.C.8D
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## Geometry and Measurement

### A Understand congruence and similarity using physical models, transparencies or geometry software. 8.GM.A

- 3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates. 8.GM.A.3
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### B Understand and apply the Pythagorean Theorem. 8.GM.B

- 6 Use models to demonstrate a proof of the Pythagorean Theorem and its converse. 8.GM.B.6

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**C Solve problems involving volume of cones, pyramids and spheres.** 8.GM.C

- 9a Understand the concept of surface area and find surface area of pyramids. 8.GM.C.9A
- 9b Understand the concepts of volume and find the volume of pyramids, cones and spheres. 8.GM.C.9B
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**Functions**

**A Define, evaluate and compare functions.** 8.F.A

- 1b Determine if a relation is a function. 8.F.A.1B
- 2 Compare characteristics of two functions each represented in a different way. 8.F.A.2
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**B Use functions to model relationships between quantities.** 8.F.B

- 4a Explain the parameters of a linear function based on the context of a problem. 8.F.B.4A
- 5 Describe the functional relationship between two quantities from a graph or a verbal description. 8.F.B.5
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**Data, Statistics and Probability**

**A Investigate patterns of association in bivariate data.** 8.DSP.A

- 3 Interpret the parameters of a linear model of bivariate measurement data to solve problems. 8.DSP.A.3
- 4a Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. 8.DSP.A.4A