

# Grade 7: Access Points

## Algebraic Reasoning AR

### 1 Rewrite algebraic expressions in equivalent forms. AR.1

- 1 Add and subtract linear expressions that include like terms. MA.7.AR.1.AP.1
  - 2 Use tools or manipulatives to compare two linear expressions, with no more than two operations, to determine whether they are equivalent. MA.7.AR.1.AP.2
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### 2 Write and solve equations and inequalities in one variable. AR.2

- 1 Select a one-step inequality from a list that represents a real-world situation and given a set of three or fewer values, use substitution to solve. MA.7.AR.2.AP.1
  - 2a Set up two-step equations in one variable based on real-world problems. MA.7.AR.2.AP.2A
  - 2b Solve two-step equations in one variable based on real-world problems, where all terms have positive integer coefficients. MA.7.AR.2.AP.2B
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### 3 Use percentages and proportional reasoning to solve problems. AR.3

- 1 Solve simple percentage problems in real-world contexts. MA.7.AR.3.AP.1
  - 2 Solve simple ratio problems in real-world contexts. MA.7.AR.3.AP.2
  - 3 Use tools to solve real-world problems involving conversion of units in the same measurement system. MA.7.AR.3.AP.3
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### 4 Analyze and represent two-variable proportional relationships. AR.4

- 1 Given a table or a graph, determine whether two quantities have a proportional relationship. MA.7.AR.4.AP.1
  - 2 Identify the constant of proportionality when given a table or graph of a proportional relationship. MA.7.AR.4.AP.2
  - 3 Given a table or equation, graph a proportional relationship. MA.7.AR.4.AP.3
  - 4 Given a table representation of a proportional relationship, translate the relationship into an equation or a graph. MA.7.AR.4.AP.4
  - 5 Solve simple real-world problems involving proportional relationships. MA.7.AR.4.AP.5
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## Data Analysis and Probability DP

### 1 Represent and interpret numerical and categorical data. DP.1

- 1 Use context to determine the appropriate measure of center (mean or median) or range to summarize a numerical data set with 10 or fewer elements, represented numerically or graphically. MA.7.DP.1.AP.1
  - 2 Given two numerical or graphical representations of data in the same form, compare the mean, median or range of each representation. MA.7.DP.1.AP.2
  - 3 Given data from a random sample of the population, select from a list an appropriate prediction about the population based on the data. MA.7.DP.1.AP.3
  - 4 Use proportional reasoning to interpret data in a pie chart. MA.7.DP.1.AP.4
  - 5 Given a data set, select an appropriate graphical representation (histogram, bar chart, or line plot). MA.7.DP.1.AP.5
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### 2 Develop an understanding of probability. Find and compare experimental and theoretical probabilities. DP.2

- 1 Use tree diagrams, frequency tables, organized lists, and/or simulations to collect data from a simple experiment. MA.7.DP.2.AP.1
  - 2 Given the probability of a simple chance event written as a fraction, percentage or decimal between 0 and 1, determine how likely is it that an event will occur. MA.7.DP.2.AP.2
  - 3 Determine the theoretical probability of a simple chance event. MA.7.DP.2.AP.3
  - 4 Conduct a simple experiment to find experimental probabilities. MA.7.DP.2.AP.4
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## Geometric Reasoning GR

### 1 Solve problems involving two-dimensional figures, including circles. GR.1

- 1 Given the formulas, find the area of parallelograms and rhombi. MA.7.GR.1.AP.1
  - 2 Decompose complex shapes (polygon, trapezoid, and pentagon) into simple shapes (rectangles, squares, triangles) to measure area. MA.7.GR.1.AP.2
  - 3 Apply a given formula for the circumference of a circle to solve mathematical problems. MA.7.GR.1.AP.3
  - 4 Apply a given formula to find the area of a circle to solve mathematical problems. MA.7.GR.1.AP.4
  - 5 Use a scale factor to draw a scale drawing of a real-world two-dimensional polygon on graph paper. MA.7.GR.1.AP.5
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### 2 Solve problems involving three-dimensional figures, including right circular cylinders. GR.2

- 1 Match the parts of a given formula to the right circular cylinder using the figures net. MA.7.GR.2.AP.1
  - 2 Given the formula, use tools to find the surface area of a right circular cylinder using the figures net. MA.7.GR.2.AP.2
  - 3 Given a formula, use tools to calculate the volume of right circular cylinders. MA.7.GR.2.AP.3
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## Number Sense and Operations NSO

### 1 Rewrite numbers in equivalent forms. NSO.1

- 1 Use properties of whole number exponents to produce equivalent expressions. MA.7.NSO.1.AP.1
  - 2 Rewrite positive rational numbers in different but equivalent forms such as fractions, mixed numbers, repeating decimals and/or percentages to solve problems. MA.7.NSO.1.AP.2
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### 2 Add, subtract, multiply and divide rational numbers. NSO.2

- 1 Solve mathematical problems, using no more than four operations, with rational numbers including grouping symbols, whole-number exponents and absolute value. MA.7.NSO.2.AP.1
- 2 Using tools or models, add, subtract, multiply and divide rational numbers. MA.7.NSO.2.AP.2
- 3 Using tools or models, solve real-world problems involving any of the four operations with rational numbers. MA.7.NSO.2.AP.3