**Critical Areas for Grade 6 – Page 1 of 5**

| In Grade 6, instructional time should focus on four critical areas: | *Cluster Headings* | *How do the cluster headings help clarify the concepts in the critical areas?* | *How does the content compare with what you are already teaching?* <br> <u>Green</u>: *similar* <br> <u>Yellow</u>: *could be easily added* <br> <u>Red</u>: *new and I would need support* |
|---|---|---|---|
| **Critical Area 1: Connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems.** Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates. | | | |

**Critical Areas for Grade 6 – Page 2 of 5**

| | Cluster Headings | How do the cluster headings help clarify the concepts in the critical areas? | How does the content compare with what you are already teaching? <br> Green: similar <br> Yellow: could be easily added <br> Red: new and I would need support |
|---|---|---|---|
| **Critical Area 2: Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers.** <br> Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane. | | | |

## Critical Areas for Grade 6 – Page 3 of 5

| | Cluster Headings | How do the cluster headings help clarify the concepts in the critical areas? | How does the content compare with what you are already teaching? <br> Green: similar <br> Yellow: could be easily added <br> Red: new and I would need support |
|---|---|---|---|
| **Critical Area 3: Writing, interpreting, and using expressions and equations.** <br> Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities. | | | |
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**Critical Areas for Grade 6 – Page 4 of 5**

| | Cluster Headings | How do the cluster headings help clarify the concepts in the critical areas? | How does the content compare with what you are already teaching? Green: similar Yellow: could be easily added Red: new and I would need support |
|---|---|---|---|
| **Critical Area 4: Developing understanding of statistical thinking.** Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability. Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. | | | |
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**Cluster Headings for Grade 6 – Page 5 of 5**

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| 6. A Understand ratio concepts and use ratio reasoning to solve problems. | 6.G Represent and analyze quantitative relationships between dependent and independent variables. |
| 6.B Apply and extend previous understandings of multiplication and division to divide fractions by fractions. | 6.H Solve real-world and mathematical problems involving area, surface area, and volume. |
| 6.C Compute fluently with multi-digit numbers and find common factors and multiples. | 6.I Develop understanding of statistical variability. |
| 6.D Apply and extend previous understandings of numbers to the system of rational numbers. | 6.J Summarize and describe distributions. |
| 6.E Apply and extend previous understandings of arithmetic to algebraic expressions. | |
| 6.F Reason about and solve one-variable equations and inequalities. | |

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