## Rational Numbers, Ratios, and Percent

## By Bill Davidson

Fraction and Decimal Equivalency	Standard(s)	<b>Pages</b>
Factors of 100	5.NBT.3	1 - 2
Hundredths	5.NBT.3	3 - 4
Factors of 1,000	7.NS.2	5 - 6
Equivalent unit fractions (thousandths)	7.NS.2	7 - 8
Equivalent non-unit fractions (thousandths)	7.NS.2	9 - 10
Unit fraction/decimal equivalency	7.NS.2	11 - 12
The opposite of an opposite (tenths)	6.NS.6	13 - 14
The opposite of an opposite with mixed numbers (tenths)	6.NS.6	15 - 16
The opposite of an opposite (hundredths)	6.NS.6	17 - 18
The opposite of an opposite (tenths and hundredths)	6.NS.6	19 - 20
Fractions and Mixed Numbers as Decimals	Standard(s)	Pages
Convert mixed numbers to decimals (tenths)	5.NBT.3	21 - 22
Convert mixed numbers to decimals (hundredths)	5.NBT.3	23 - 24
Convert mixed numbers to decimals (tenths and hundredths)	6.NS.6	25 - 26
Denominators of 1,000	7.NS.2	27 - 28
Denominators that are multiples of 100	5.NBT.3	29 - 30
Denominators of 40	7.NS.2	31 - 32
Denominators of 8	7.NS.2	33 - 34
Fractions as decimals (thousandths)	7.NS.2	35 - 36
Unit fractions as decimals	7.NS.2	37 - 38
Fractions and mixed numbers as repeating decimals	7.NS.2	39 - 40
<b>Decimals as Fractions and Mixed Numbers</b>	Standard(s)	Pages
Decimals as unit fractions in their simplest form	7.NS.2	41 - 42
Decimals as fractions in their simplest form	7.NS.2	43 - 44
Decimals as fractions or mixed numbers	7.NS.2	45 - 46
Repeating decimals as fractions or mixed numbers	7.NS.2	47 - 48
Add and Subtract Fractions to make Decimals	Standard(s)	Pages
Add fractions to make decimals	6.NS.3	49 - 50
Add fractions to make decimals (2)	6.NS.3	51 - 52
Add fractions to make decimals (3)	6.NS.3	53 - 54
Add mixed numbers to make decimals	6.NS.3	55 - 56
Add mixed numbers to make decimals (2)	6.NS.3	57 - 58
Add mixed numbers to make decimals (3)	6.NS.3	59 - 60
Add and subtract mixed numbers to make decimals	6.NS.3	61 - 62

<b>Multiply and Divide Fractions by Fractions</b>	Standard(s)	Pages
Multiply decimal fractions (hundredths) Multiply decimal fractions (hundredths and thousandths) Fractions divided by fractions	6.NS.2 6.NS.2 6.NS.1	63 - 64 $65 - 66$ $67 - 68$
Fractions divided by mixed numbers	6.NS.1	69 – 70
Multiply and Divide Decimals	Standard(s)	<b>Pages</b>
Multiply single-digit numbers by decimals Multiply decimals by multiples of 10 Multiply decimals by multiples of 100 Multiply decimals by multiples of 10 and 100 Estimate the product Divide decimals by decimals (tenths) Divide decimals by decimals (hundredths) Estimate the quotient	6.NS.3 6.NS.3 6.NS.3 6.NS.3 6.NS.3 6.NS.3 6.NS.3	71 - 72 $73 - 74$ $75 - 76$ $77 - 78$ $79 - 80$ $81 - 82$ $83 - 84$ $85 - 86$
Ratios	Standard(s)	<b>Pages</b>
Ratios Ratios (2) Equivalent ratios Equivalent ratios (2) Simplify ratios Reciprocals	6.RP.1 6.RP.1 6.RP.1 6.RP.1 6.RP.1	87 - 88 $89 - 90$ $91 - 92$ $93 - 94$ $95 - 96$ $97 - 98$
Fractions as Percentages	Standard(s)	Pages
Hundredths, tenths, and halves Denominators that are factors of 100 Denominators that are multiples of 100 (2) Denominators that are factors of 100 and multiples of 100 Halves and fourths as a percent Thirds as a percent Sixths as a percent Eighths as a percent Thirds, sixths, and eighths as percentages	7.RP.3 7.RP.3 7.RP.3 7.RP.3 7.EE.3 7.EE.3 7.EE.3 7.EE.3 7.EE.3	99 - 100 $101 - 102$ $103 - 104$ $105 - 106$ $107 - 108$ $109 - 110$ $111 - 112$ $113 - 114$ $115 - 116$
<b>Decimal/Percent Connections</b>	Standard(s)	<b>Pages</b>
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Percentage of a Quantity	Standard(s)	Pages
Percentage of a quantity Percentage of a quantity (2) Find the percent Find the quantity	7.RP.3 7.RP.3 7.RP.3 7.RP.3	121 - 122 $123 - 124$ $125 - 126$ $127 - 128$

	Find the quantity (2)	7.RP.3	129 - 130
	Find the quantity (3)	7.RP.3	131 - 132
	Find the quantity (4)	7.RP.3	133 - 134
	Find the quantity (5)	7.RP.3	135 – 136
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Per	centage Increase	Standard(s)	<b>Pages</b>
	Percent more than	7.RP.3	137 - 138
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	Percent more than (5)	7.RP.3	145 – 146
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	Percent less than	7.RP.3	147 – 148
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	Percent less than (3)	7.RP.3	151 - 152
	Percent less than (4)	7.RP.3	153 – 154
	Percent less than (5)	7.RP.3	155 – 156
	Percent less than (6)	7.RP.3	157 – 158
Per	centage Difference	Standard(s)	Pages
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	Find the percent (less than)	7.RP.3	161 - 162
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	Find the percent (more than or less than)	7.RP.3	163 – 164
Neg	± ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		
Neg	Find the percent (more than or less than) gative Numbers	7.RP.3 <b>Standard(s)</b>	163 – 164 <b>Pages</b>
Neg	Find the percent (more than or less than)  gative Numbers  The opposite of positive numbers	7.RP.3 <b>Standard(s)</b> 6.NS.5	163 – 164 <b>Pages</b> 165 – 166
Ne	Find the percent (more than or less than)  gative Numbers  The opposite of positive numbers The opposite of an opposite	7.RP.3 <b>Standard(s)</b> 6.NS.5 6.NS.6	163 – 164 <b>Pages</b> 165 – 166 167 – 168
Neg	Find the percent (more than or less than)  gative Numbers  The opposite of positive numbers The opposite of an opposite Absolute value	7.RP.3  Standard(s) 6.NS.5 6.NS.6 6.NS.7	163 – 164 <b>Pages</b> 165 – 166 167 – 168 169 – 170
Neg	Find the percent (more than or less than)  gative Numbers  The opposite of positive numbers The opposite of an opposite Absolute value Negative numbers on a number line	7.RP.3  Standard(s) 6.NS.5 6.NS.6 6.NS.7 6.NS.6	163 – 164  Pages  165 – 166 167 – 168 169 – 170 171 – 172
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Neg	Find the percent (more than or less than)  gative Numbers  The opposite of positive numbers The opposite of an opposite Absolute value Negative numbers on a number line Order negative numbers Compare negative integers Compare negative fractions Compare negative fractions and mixed numbers Compare negative mixed numbers and improper fractions	7.RP.3  Standard(s) 6.NS.5 6.NS.6 6.NS.7 6.NS.6 6.NS.7 6.NS.7 6.NS.7 6.NS.7	Pages  165 – 166 167 – 168 169 – 170 171 – 172 173 – 174 175 – 176 177 – 178 179 – 180 181 – 182
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	The opposite of positive numbers The opposite of an opposite Absolute value Negative numbers on a number line Order negative numbers Compare negative integers Compare negative fractions Compare negative mixed numbers and improper fractions Compare negative decimals Compare negative fractions and decimals  d and Subtract with Negative Numbers  Add negative numbers when the first addend is positive Add negative numbers	7.RP.3  Standard(s) 6.NS.5 6.NS.6 6.NS.7 6.NS.6 6.NS.7 6.NS.7 6.NS.7 6.NS.7 6.NS.7 6.NS.7 5.NS.7 7.NS.1 7.NS.1	Pages  165 – 166 167 – 168 169 – 170 171 – 172 173 – 174 175 – 176 177 – 178 179 – 180 181 – 182 183 – 184 185 – 186  Pages  187 – 188 189 – 190 191 – 192
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	The opposite of positive numbers The opposite of an opposite Absolute value Negative numbers on a number line Order negative numbers Compare negative integers Compare negative fractions Compare negative mixed numbers and improper fractions Compare negative decimals Compare negative fractions and decimals  d and Subtract with Negative Numbers  Add negative numbers when the first addend is positive Add negative numbers	7.RP.3  Standard(s) 6.NS.5 6.NS.6 6.NS.7 6.NS.6 6.NS.7 6.NS.7 6.NS.7 6.NS.7 6.NS.7 6.NS.7 5.NS.7 7.NS.1 7.NS.1	Pages  165 – 166 167 – 168 169 – 170 171 – 172 173 – 174 175 – 176 177 – 178 179 – 180 181 – 182 183 – 184 185 – 186  Pages  187 – 188 189 – 190 191 – 192

Add and subtract negative numbers Additive inverses Inverses and the Identity Property of Zero	7.NS.1 7.EE.1 7.EE.1	$     199 - 200 \\     201 - 202 \\     203 - 204 $
Multiply and Divide with Negative Numbers	Standard(s)	<b>Pages</b>
Multiply negative numbers by negative numbers Multiply by negative numbers Divide negative numbers by negative numbers Divide positive and negative numbers Multiply 3 or more numbers with negatives Multiply and divide 3 or more numbers with negatives Multiplicative inverses Multiplicative inverses Multiply and divide negative numbers with fractions Multiply and divide negative numbers with decimals	7.NS.2 7.NS.2 7.NS.2 7.NS.2 7.NS.2 7.NS.2 7.EE.1 7.EE.1 7.NS.2 7.NS.2	205 - 206 $207 - 208$ $209 - 210$ $211 - 212$ $213 - 214$ $215 - 216$ $217 - 218$ $219 - 220$ $221 - 222$ $223 - 224$
Order of Operations	Standard(s)	<b>Pages</b>
Order of operations without parentheses Order of operations with parentheses Order of operations with exponents Order of operations with exponents and parentheses Mixed order of operations	6.EE.3 6.EE.3 6.EE.3 6.EE.3	225 - 226 $227 - 228$ $229 - 230$ $231 - 232$ $233 - 234$
Divisibility Rules	Standard(s)	<b>Pages</b>
Divisibility rules for 2 and 5 Divisibility rules for 3 Divisibility rules for 4 Divisibility rules for 6 Divisibility rules for 7 Divisibility rules for 8 Divisibility rules for 9	6.NS.4 6.NS.4 6.NS.4 6.NS.4 6.NS.4 6.NS.4	235 - 236 $237 - 238$ $239 - 240$ $241 - 242$ $243 - 244$ $245 - 246$ $247 - 248$
Other Rational Number Topics	Standard(s)	<b>Pages</b>
Even and odd sums The connection of addition and subtraction True and false number sentences Estimate the quotient (2) Least Common Multiple Greatest Common Factor Rational and irrational numbers	6.NS.4 6.EE.3 6.EE.5 6.NS.3 6.NS.4 6.NS.4 8.NS.1	249 - 250 $251 - 252$ $253 - 254$ $255 - 256$ $257 - 258$ $259 - 260$ $261 - 262$