



7th Grade Math Essential Skills List

1. Ratios and equivalent ratios

2. Unit Rates

3. Adding and subtracting fractions with like denominators

4. Adding and subtracting fractions with unlike denominators

5. Multiplying fractions

6. Dividing fractions

7. Adding and subtracting with decimals

8. Multiplying and dividing with decimals

9. Know all benchmark fractions and their decimal equivalents

10. Converting fractions into decimals.

Skill	Computation Sample	Constructive Response Sample	Thinking	Resources & How To Videos																				
6.RP.3 Ratios and Equivalent Ratio		<p>1. Complete the ratio table.</p> <table border="1"> <tr> <td>7</td> <td>5</td> </tr> <tr> <td>14</td> <td><input type="text"/></td> </tr> <tr> <td>35</td> <td>25</td> </tr> <tr> <td>42</td> <td>30</td> </tr> <tr> <td>63</td> <td><input type="text"/></td> </tr> </table> <p>2. Four gallons of gasoline cost \$14. Complete the table.</p> <table border="1"> <tr> <td>Gallons</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td>6</td> </tr> <tr> <td>Cost (\$)</td> <td>3.5</td> <td>7</td> <td>14</td> <td><input type="text"/></td> </tr> </table> <p>How much does the cost increase if the number of gallons is increased from 6 to 8?</p>	7	5	14	<input type="text"/>	35	25	42	30	63	<input type="text"/>	Gallons	<input type="text"/>	<input type="text"/>	<input type="text"/>	6	Cost (\$)	3.5	7	14	<input type="text"/>	<p>Think: The original ratio is 7 to 5. How can I get from 7 to 14? Multiply $7 \times 2 = 14$. So what I do to one side of the table, I must do to the other side. Therefore, what do I multiply 5 by to find the missing value?</p> <p>THIRD ROW: $7 \times 5 = 35$ true and $5 \times 5 = 25$ true.</p> <p>Fourth Row: $7 \times 6 = 42$ true and $5 \times 6 = 30$.</p> <p>Fifth Row: $7 \times \underline{\quad} = 63$ And $5 \times \underline{\quad} = \underline{\quad}$</p>	<div style="background-color: #4a7ebb; color: white; padding: 10px; text-align: center;"> https://www.youtube.com/watch?v=u8_qTU3DbLM </div>
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<p>6.RP.2 Solve unit rate problems.</p>	<p>5 cans of soda cost \$3.25. How much does each can cost?</p> $\frac{5 \text{ cans}}{\$3.25} = \frac{1 \text{ can}}{??}$ <p>Think: $5/5 = 1$ So if I divide the numerator(top) by 5, then I have to divide the denominator by 5 for equivalency.</p> $\begin{array}{r} \underline{0.65} \\ 5 \overline{)3.25} \\ \underline{-30} \\ 25 \\ \underline{-25} \\ 0 \end{array}$ <p>Each can costs \$0.65 cents</p>	<p>Felicity babysat 2 hours each night for 10 nights. She earned \$180 babysitting. How much does Felicity earn</p>	<p>Think: How many total hours did Felicity work? How much money did she make?</p> <p>How can we find the amount she makes for babysitting one hour?</p>	<div style="background-color: #4a7ebb; color: white; padding: 10px; text-align: center;"> https://www.youtube.com/watch?v=liW_ALj4Qj8 </div>

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<p>6 NS.B.3</p> <p>Dividing Fractions</p>	<p style="text-align: center;">Dividing Fractions</p> $\frac{3}{4} \div \frac{2}{7}$ <p style="text-align: center;">Keep Change Flip</p> $\frac{3}{4} \times \frac{7}{2} = \frac{21}{8}$	<p>You have $\frac{2}{4}$ of a pizza and you want to share it equally between 2 people. How much of the pizza does each person get?</p> $\frac{2}{4} \div \frac{2}{1}$ <p>Keep Change Flip</p> $\frac{2}{4} \cdot \frac{1}{2}$ $= \frac{1}{4}$ <p>Each person gets $\frac{1}{4}$ slice</p>	<p>Think: I have half a pizza pie. If i divided it into 6 slices (or $\frac{1}{6}$) how many slices is that?</p>	<p>https://www.khanacademy.org/math/arithmetic/fraction-arithmetic/arith-review-dividing-fractions/v/dividing-fractions-example</p>
<p>4.NF.B.3</p> <p>Adding and subtracting fractions with like denominators</p>	<p>Adding:</p> $\frac{3}{7} + \frac{2}{7} = \frac{5}{7}$ <p style="text-align: center;">ADD the numerators</p> $\frac{a}{d} + \frac{b}{d} = \frac{a+b}{d}$ <p style="text-align: center;">Same denominators Copy common denominator</p> <p>Subtracting:</p> $\frac{3}{7} - \frac{2}{7} = \frac{1}{7}$ <p style="text-align: center;">SUBTRACT the numerators</p> $\frac{a}{d} - \frac{b}{d} = \frac{a-b}{d}$ <p style="text-align: center;">Same denominators Copy common denominator</p>	<p>After painting her room, Maryann had $\frac{3}{8}$ cans of burgundy and $\frac{4}{8}$ cans of taupe paint left. How much paint in all did Maryann have left over?</p>	<p>If the denominators of the two fractions are both the same. Then we can easily add or subtract these fractions by adding/subtracting their numerators and copying the common denominator.</p> <p>Step 1: Add/Subtract the numerators (the top numbers)</p> <p>Step 2: Put that answer over the denominator (the bottom number)</p> <p>Step 3: Simplify/reduce the fraction, if possible.</p>	<p>https://www.youtube.com/watch?v=aMJZXKRhEzE</p> <p>Calculator: https://www.desmos.com/scientific</p>

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<p>5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p>	<p>Multiply the numerators $\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$</p> <p>Multiply the denominators $\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$</p> <p>Reduce the fraction if necessary $\frac{6}{20} = \frac{3}{10}$</p> <p>Mixed Numbers</p> <p>$1\frac{3}{4} \times 2\frac{1}{2} = ?$</p> <p>$1\frac{3}{4} \times 2\frac{1}{2} = \frac{7}{4} \times \frac{5}{2} = \frac{35}{8} = 4\frac{3}{8}$</p> <p>$1 \times 4 + 3 = 7$</p> <p>$2 \times 2 + 1 = 5$</p>	<p>Marco bakes cookies for his class. He uses $\frac{3}{4}$ cup of butter in each batch of cookies and bakes $2\frac{1}{2}$ batches. Which equation can be used to determine the number of cups of butter Marco uses to bake cookies?</p> <p>A $\frac{5}{2} \times \frac{3}{4} = 1\frac{7}{8}$</p> <p>B $\frac{3}{2} \times \frac{3}{4} = 1\frac{1}{8}$</p> <p>C $\frac{5}{2} \times \frac{4}{3} = 3\frac{1}{3}$</p> <p>D $\frac{3}{2} \times \frac{4}{3} = 2$</p>	<p>1) Multiply the numerators</p> <p>2) Multiply the Denominators</p> <p>3) Simplify the fraction, if necessary.</p> <p><i>Mixed Numbers</i></p> <p>1) Convert the Mixed Numbers to Improper Fractions</p> <p>2) Follow the steps above.</p>	<p>https://www.youtube.com/watch?v=qmfXyR7Z6Lk</p> <p>https://www.youtube.com/watch?v=HQ3EXyW36es&t=215s</p>
<p>BENCHMARK FRACTIONS</p>	 <p>Place $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{3}$, and $\frac{2}{3}$ on the number line</p>	<p>Write 3 fractions that are greater than $\frac{1}{2}$.</p>		
<p>5.NBT.B.7: Adding and Subtracting with decimals</p>	<p>239.86 +40.50 280.36</p>	<p>Rosalita spent \$18.95 on a large box of greeting cards, \$2.95 for a roll of ribbon, \$15.64 for a scrapbook, and \$5 for scrapbook stickers (prices include tax). The cashier gave Rosalita \$7.46 change.</p> <p>How much money did Rosalita give to the cashier?</p> <p><i>Explain the strategy you used to determine your answer.</i></p>	<p>In order to add and subtract decimals you have to line up your numbers around the decimal and then perform the operation.</p>	<p>https://www.youtube.com/watch?v=vJXkxu7JIOo</p>

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Multiplying and Dividing with decimals	$\begin{array}{r} 23.8 \\ \times 9.2 \\ \hline 218.96 \end{array}$ $25.5 / 2.5 = 10.2$	<p>Nayla needs to purchase some school supplies. She has \$15 to spend. Notebooks cost \$2.99 each and pencils are 25¢.</p> <p>She needs 4 notebooks and 10 pencils. Does she have enough money to buy these supplies? If yes, how much money will she have left over. If no, how much more money does she need?</p>		<div style="background-color: #4a7ebb; color: white; padding: 10px; text-align: center;"> https://www.youtube.com/watch?v=XpH7d1suJRM </div>
Converting fractions into decimals	What number is equivalent to $43/12$?	Write a statement that describes the decimal equivalent to $\frac{7}{8}$? Be sure to include whether or not it is a terminating decimal or repeating decimal.	Calculator- When using your calculator you will take your numerator and divide it by your denominator. For example $43/12$. I would first put my numerator 43 then hit my division symbol and lastly hit the number 12. This is 43 divided by 12. You will find your response. Same goes for taking your numerator 7, hit the division symbol and then the number 8.	<div style="background-color: #4a7ebb; color: white; padding: 10px; text-align: center;"> https://www.youtube.com/watch?v=BDhSG7Lsfug </div>

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