

## 6<sup>th</sup> Grade Math Unit 1 Information

### Number System Fluency

Milestones Domain & Weight: Numbers & Operations 17%

Flip Books are in Content Map, by Standards

[Content Descriptors: Unit 1](#)

[Prerequisites for Unit 1](#)

Unit length: 21 days

[Checklist for Unit 1](#)

[Study Guide for Unit 1](#)

[Study Guide KEY for Unit 1](#)

**No Calculators Allowed in Unit 1**

[\\*\\*What Did Students Learn About Fractions Prior to 6<sup>th</sup> Grade?\\*\\*](#)

Click on the links below for resources by Concept:

[Concept One – Least Common Multiple / G C F/ Distributive Property](#)

[Concept Two – Division of Fractions – Mathematical & Real World Problems](#)

[Concept Three – Fluently Dividing Multi-Digit Numbers](#)

[Concept Four – Fluent Operations with Decimals](#)

# TCSS 6<sup>th</sup> Math Unit 1 ~ Number System Fluency

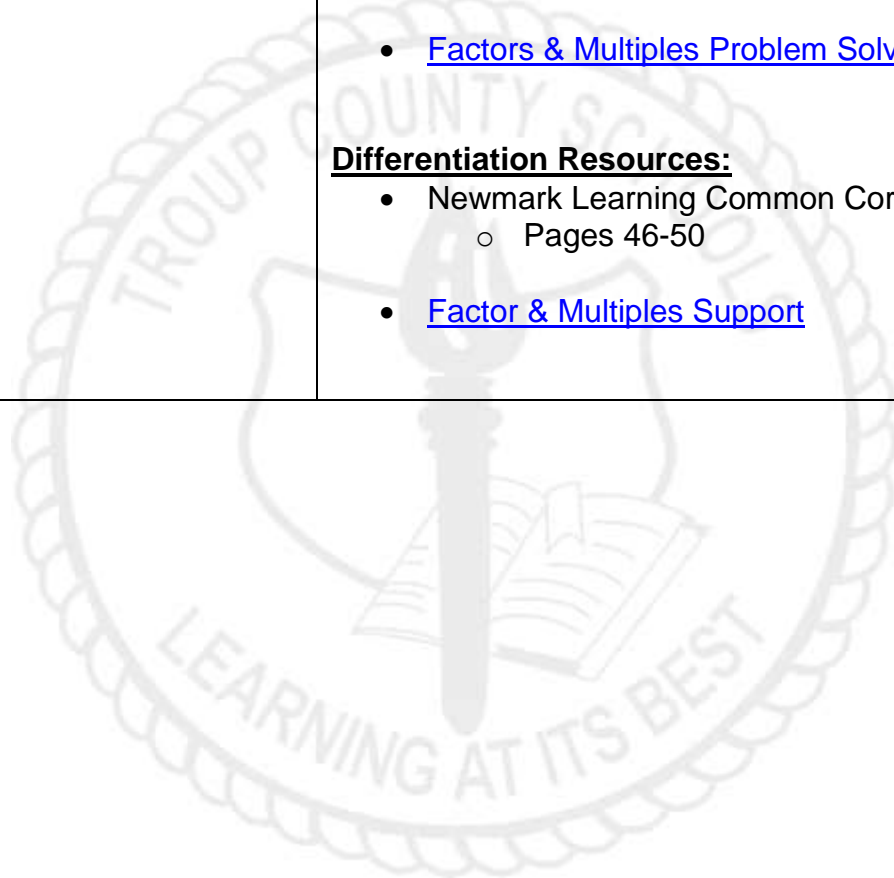
## Concept One ~ LCM / GCF / Distributive Property

| Standard(s) & Essential Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Vocabulary                                                                                                                                                    | Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Assessment Examples |
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| <p><b>MGSE6.NS.4</b> Find the common multiples of two whole numbers less than or equal to 12 and the common factors of two whole numbers less than or equal to 100.</p> <p>a. Find the greatest common factor of 2 whole numbers and use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factors. (GCF)<br/><i>Example: <math>36 + 8 = 4(9 + 2)</math></i></p> <p>b. Apply the least common multiple of two whole numbers less than or equal to 12 to solve real-world problems.</p> <p><b>EQ:</b> When or why would it be helpful to know the least common multiple of a set of numbers?</p> <p><b>EQ:</b> How can the distributive property help me with computation?</p> | <p>Factor</p> <p>Prime</p> <p>Composite</p> <p>Multiple</p> <p>Least Common Multiple(LCM)</p> <p>Distributive Property</p> <p>Greatest Common Factor(GCF)</p> | <p><a href="#">NS.4 Flipbook</a></p> <p>Activator:<br/><a href="#">ActivInspire – LCM GCF Flipchart</a></p> <ul style="list-style-type: none"> <li>• Eureka Math (2014 Common Core) <a href="#">License</a> Concept One ~ <a href="#">TE</a>   <a href="#">SE</a></li> <li>• CCGPS Frameworks on Factors &amp; Multiples: <a href="#">Secret Number SE</a>   <a href="#">Secret Number TE</a></li> <li>• <a href="#">Factors &amp; Multiples Spotlight</a></li> <li>• <a href="#">Geared Up Spotlight Task</a></li> <li>• <a href="#">Back to School SE</a>   <a href="#">Back to School TE</a></li> <li>• CCGPS Framework on GCF:<br/><a href="#">Finding Common Factors SE</a><br/><a href="#">Finding Common Factors TE</a></li> <li>• CCGPS Framework:<br/><a href="#">Let's Distribute SE</a>   <a href="#">Let's Distribute TE</a></li> <li>• <a href="#">Station Activity Book ~ GCF</a> <i>See notes:</i> <ul style="list-style-type: none"> <li>▪ <i>Stations 1, 3, and 4 are good.</i></li> <li>▪ <i>Station 2 is fine, but needs tiles.</i></li> </ul> </li> </ul> <p style="color: green;"><i>Continued on next page...</i></p> | <p>GSE.M.NS.4</p>   |

# TCSS 6<sup>th</sup> Math Unit 1 ~ Number System Fluency

## Concept One ~ LCM / GCF / Distributive Property

| Standard(s) & Essential Questions | Vocabulary | Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Assessment Examples |
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|                                   |            | <p><i>...Continued from previous page</i></p> <ul style="list-style-type: none"><li>• Glencoe CCSS Math Text (McGraw-Hill, 2013), Page 7-14</li><li>• <a href="#">Factors &amp; Multiples Problem Solving</a></li></ul> <p><b><u>Differentiation Resources:</u></b></p> <ul style="list-style-type: none"><li>• Newmark Learning Common Core Math Book<ul style="list-style-type: none"><li>○ Pages 46-50</li></ul></li><li>• <a href="#">Factor &amp; Multiples Support</a></li></ul> |                     |



# TCSS 6<sup>th</sup> Math Unit 1 ~ Number System Fluency

## Concept 2 ~ Division of Fractions – Mathematical & Real World Problems

| Standard(s) & Essential Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Vocabulary                                                                                                                                         | Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Assessment                                                                                               |
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| <p><b>MGSE6.NS.1</b> Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, including reasoning strategies such as using visual fraction models and equations to represent the problem.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> <li>• Create a story context for <math>(2/3) \div (3/4)</math> and use a visual fraction model to show the quotient;</li> <li>• Use the relationship between multiplication and division to explain that <math>(2/3) \div (3/4) = 8/9</math> because <math>3/4</math> of <math>8/9</math> is <math>2/3</math>. (In general, <math>(a/b) \div (c/d) = a/b \cdot d/c</math>.)</li> <li>• How much chocolate will each person get if 3 people share <math>1/2</math> lb of chocolate equally?</li> <li>• How many <math>3/4</math>-cup servings are in <math>2/3</math> of a cup of yogurt?</li> <li>• How wide is a rectangular strip of land with length <math>3/4</math> mi and area <math>1/2</math> square mi?</li> </ul> <p><b>EQ:</b> Why does the process of invert and multiply work when dividing fractions?</p> <p><b>EQ:</b> When I divide one number by another number, do I always get a quotient smaller than my original number?</p> | <ul style="list-style-type: none"> <li>▪ Divisor</li> <li>▪ Dividend</li> <li>▪ Quotient</li> <li>▪ Reciprocal</li> <li>▪ Mixed numbers</li> </ul> | <ul style="list-style-type: none"> <li>• Excellent Activator: Inquiry Lab On page 301 of the Glencoe CCSS Text</li> <li>• <a href="#">Do 2 Eureka Lessons on Modeling Fractions</a></li> <li>• Eureka Math Concept One ~ <a href="#">TE</a>   <a href="#">SE</a> <a href="#">License</a></li> <li>• <a href="#">ActivInspire- Multiplying and Dividing Fractions</a></li> <li>• <a href="#">Powerpoint – Multiply Fractions</a></li> <li>• <a href="#">Powerpoint – Divide Fractions</a></li> <li>• CCGPS Framework <a href="#">Dividing Fractions SE</a>   <a href="#">Dividing Fractions TE</a></li> <li>• CCGPS Frameworks <a href="#">Fractional Divisors SE</a>   <a href="#">Fractional Divisors TE</a></li> <li>• <a href="#">Kool-Aid Spotlight</a></li> <li>• <a href="#">Station Activity ~ Multiplying &amp; Dividing Fractions</a><br/><b>NOTES:</b> Stations 1 &amp; 4 involve multiplication, good for background/review. Stations 2 &amp; 3 are division.</li> <li>• Investigation: Multiplying &amp; Dividing Fractions <a href="#">TE</a>   <a href="#">SE</a></li> <li>• Glencoe CCSS Math Text (McGraw-Hill, 2013) p. 301-332</li> <li>• <a href="#">Multiplication &amp; Division Word Problems</a></li> </ul> <p><b>Differentiation Resources:</b></p> <ul style="list-style-type: none"> <li>• Newmark Learning Common Core Math Book <ul style="list-style-type: none"> <li>○ Multiplying Fractions: Page 51-55</li> <li>○ Dividing Fractions: Page 56-60</li> </ul> </li> </ul> | <p><a href="#">NS.1 Flipbook</a></p> <p><a href="#">CC.6.NS.1</a></p> <p><a href="#">Back to Top</a></p> |

# TCSS 6<sup>th</sup> Math Unit 1 ~ Number System Fluency

## Concept 3 ~ Fluent Division of Multi-Digit Numbers

| Standard(s) & Essential Questions                                                                                                                                            | Vocabulary                                                                                                                                                                                                                                                                                                                 | Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Assessment                                                                                                                 |
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| <p><b>MGSE6.NS.2</b> Fluently divide multi-digit numbers using the standard algorithm.</p> <p><b>EQ:</b> Which strategies are helpful when dividing multi-digit numbers?</p> | <ul style="list-style-type: none"> <li>▪ Reciprocal</li> <li>▪ factor</li> <li>▪ difference</li> <li>▪ product</li> <li>▪ algorithm</li> <li>▪ subtrahend</li> <li>▪ divisor</li> <li>▪ dividend</li> </ul> <p><i>Per DOE: Definitions are for teacher reference only and are not to be memorized by the students.</i></p> | <ul style="list-style-type: none"> <li>• Eureka Math (2014 Common Core) <a href="#">License</a> Concept Three (ALL) ~ <a href="#">TE</a>   <a href="#">SE</a></li> </ul> <p style="text-align: center;"><b>Divide Multi-Digit Numbers</b></p> <ul style="list-style-type: none"> <li>• <a href="#">NS.2 Flipbook</a></li> <li>• Glencoe CCSS Math Text (McGraw-Hill) p. 215-220</li> <li>• <a href="#">Divide Multi-Digit Practice</a></li> <li>• <a href="#">Divide Multi-Digit Problem Solving</a></li> <li>• <b>Differentiation Resources:</b> <ul style="list-style-type: none"> <li>○ Newmark Learning Common Core Math Book           <ul style="list-style-type: none"> <li>▪ Pages 31-35</li> </ul> </li> </ul> </li> </ul> | <p style="text-align: center;"><a href="#">CC.6.NS.2</a></p> <p style="text-align: right;"><a href="#">Back to Top</a></p> |

# TCSS 6<sup>th</sup> Math Unit 1 ~ Number System Fluency

## Concept 4 ~ Fluent Operations with Decimals

| Standard(s) & Essential Questions                                                                                                                                                                                                              | Vocabulary                                                                                                                                                                                                                                                                                                                                                                                         | Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Assessment                                                                                                                  |
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| <p><b>MGSE6.NS.3</b> Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p> <p><b>EQ:</b> Which strategies are helpful when performing operations on multi-digit decimals?</p> | <ul style="list-style-type: none"> <li>▪ sum</li> <li>▪ minuend</li> <li>▪ addend</li> <li>▪ reciprocal</li> <li>▪ factor</li> <li>▪ difference</li> <li>▪ product</li> <li>▪ algorithm</li> <li>▪ multiple</li> <li>▪ subtrahend</li> <li>▪ divisor</li> <li>▪ dividend</li> </ul> <p><i>Per DOE: Definitions are for teacher reference only and are not to be memorized by the students.</i></p> | <ul style="list-style-type: none"> <li>• Eureka Math (2014 Common Core) <a href="#">License</a><br/><b>Concept Three (+,-,x,÷) ~ <a href="#">TE</a>   <a href="#">SE</a></b></li> </ul> <p style="text-align: center;"><b>Add/Subtract Decimals</b></p> <ul style="list-style-type: none"> <li>• <a href="#">NS.3 Flipbook</a></li> <li>• CCGPS Framework:<br/><a href="#">Estimation is the Root of Fluency</a></li> <li>• <a href="#">ActivInspire –Adding &amp; Subtracting Decimals</a></li> <li>• Glencoe CCSS Math Text (McGraw-Hill) p. 177-184</li> <li>• <a href="#">Adding &amp; Subtracting Decimals (Problem Solving)</a></li> <li>• <a href="#">Adding &amp; Subtracting Decimals (Practice)</a></li> <li>• <b><u>Differentiation Resources:</u></b> <ul style="list-style-type: none"> <li>○ Newmark Learning Common Core Math Book           <ul style="list-style-type: none"> <li>▪ Pages 36-40</li> </ul> </li> </ul> </li> <li>• <a href="#">Adding &amp; Subtracting Decimals : Support</a></li> </ul> <p style="text-align: center;"><b>Multiply Decimals</b></p> <ul style="list-style-type: none"> <li>• CCGPS Framework:<br/>Estimation is the Root of Fluency <a href="#">SE</a><br/>Estimation is the Root of Fluency <a href="#">TE</a></li> <li>• Glencoe CCSS Math Text (McGraw-Hill) p. 185-208</li> <li>• <a href="#">Multiplying Decimals (Problem Solving)</a></li> </ul> <p style="color: green; text-align: center;"><i>Continued on next page...</i></p> | <p style="text-align: center;"><a href="#">CC.6.NS.3</a></p> <p style="text-align: center;"><a href="#">Back to Top</a></p> |

# TCSS 6<sup>th</sup> Math Unit 1 ~ Number System Fluency

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| <p><b>MGSE6.NS.3</b> Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p> <p><b>EQ:</b> Which strategies are helpful when performing operations on multi-digit decimals?</p> | <ul style="list-style-type: none"><li>▪ sum</li><li>▪ minuend</li><li>▪ addend</li><li>▪ reciprocal</li><li>▪ factor</li><li>▪ difference</li><li>▪ product</li><li>▪ algorithm</li><li>▪ multiple</li><li>▪ subtrahend</li><li>▪ divisor</li><li>▪ dividend</li></ul> <p><i>Per DOE: Definitions are for teacher reference only and are not to be memorized by the students.</i></p> | <p><i>...Continued from previous page.</i></p> <p><b>Differentiation Resources:</b></p> <ul style="list-style-type: none"><li>• Newmark Learning Common Core Math Book<ul style="list-style-type: none"><li>○ Pages 41-45</li></ul></li><li>• <a href="#">Multiplying Decimals Support</a></li></ul> <p style="text-align: center;"><b>Divide Decimals</b></p> <ul style="list-style-type: none"><li>• CCGPS Framework:<ul style="list-style-type: none"><li><a href="#">Estimation is the Root of Fluency SE</a></li><li><a href="#">Estimation is the Root of Fluency TE</a></li></ul></li><li>• Glencoe CCSS Math Text (McGraw-Hill) p. 215-248</li><li>• <a href="#">Dividing Decimals Problem Solving</a></li><li>• <a href="#">Dividing Decimals Practice</a></li><li>• <b>Differentiation:</b></li><li>• Newmark Learning Common Core Math Book<ul style="list-style-type: none"><li>○ Pages. 41- 45</li></ul></li><li>• <a href="#">Divide Decimals by Decimals - Support</a></li></ul> <p><u>Closing Activity</u> – All Decimal Operations- Real World</p> <ul style="list-style-type: none"><li>○ <a href="#">Hamburger Hut Menu Activity</a></li><li>○ <a href="#">End of Module Task</a></li></ul> | <p style="text-align: center;"><a href="#">CC.6.NS.3</a></p> <p style="text-align: center;"><a href="#">Back to Top</a></p> |
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