

Fourth Grade Math Unit 4: Fractions & Decimals Enrichment Activities

Students needing gifted services should have a journal in which to complete these enrichment activities. These activities can be to supplement or supplant the math material in BYOC, depending on the students' needs. For hard copies of the journal questions and math projects, please see your building gifted specialist.

Topic 1: Multiply a fraction by a whole number.

Learning Target	Possible Activities
<ul style="list-style-type: none"> ● I can rewrite multiplication as repeated addition. ● I can represent fractions as the sum of unit fractions using pictures. ● I can represent a fraction as the sum of unit fractions using number line. ● I can represent a fraction as the sum of unit fractions using an area model. ● I can visualize what the product of a whole number and fraction looks like without calculating the answer. ● I can estimate products in multiplication of whole numbers and fractions. ● I can use a number line for multiplication of fractions and whole number. ● I can use a fraction model for multiplication of fractions and whole numbers. ● I can use repeated addition for multiplication of fractions and whole numbers. ● I can explain why $a/b = a \times 1/b$ using models. ● I can decompose a fraction into multiple unit fractions. 	<ul style="list-style-type: none"> ● IXL 4th Grade <ul style="list-style-type: none"> ○ Multiply Fractions T1 - T6 <ul style="list-style-type: none"> ■ multiply unit fractions by whole numbers ● Math journal questions <ul style="list-style-type: none"> ○ Tom says that $5/8$ is the same as $5 \times 1/8$. Is Tom correct? Draw a model to prove your answer. ○ Show how to use a fraction model to find $5 \times 1/6$. Use this strategy to multiply another fraction by a whole number. ○ An athlete runs $1/2$ kilometer and then stops to drink water. He repeats this 4 times. How many kilometers does he run in total? Use a fraction model to show your thinking.

Topic 2: Word problems involving multiplication of a fraction by a whole number.

Learning Target	Possible Activities
<ul style="list-style-type: none"> ● I can understand what a word problem is asking. ● I can solve word problems that involve multiplication of a fraction by a whole number. 	<ul style="list-style-type: none"> ● IXL 4th Grade <ul style="list-style-type: none"> ○ Multiply Fractions: T7-T8 ● Math journal project <ul style="list-style-type: none"> ○ Max bought 12 apples and ate $1/3$ of them. Sam bought 12

	<p>apples and ate $\frac{1}{4}$ of them. How many apples did they each eat? Draw a model to explain your reasoning.</p> <ul style="list-style-type: none"> ○ Joe has 5 people in his family. If each person will each $\frac{3}{8}$ of a pizza for lunch, how many pizzas will they need to order? Use a fraction model to show your thinking. ● Math project: Adjusting a recipe <ul style="list-style-type: none"> ○ Adjust a recipe using operations with fractions (see the building gifted specialist for a hard copy of this project).
--	--

Topic 3: Decimal notations for fractions and comparing decimal fractions

Learning Target	Possible Activities
<ul style="list-style-type: none"> ● I can represent a fraction on a 100 grid. ● I can represent a decimal on a 100 grid. ● I can represent a decimal as a fraction. ● I can compare visual models of decimals using mathematical symbols. ● I can represent a decimal on a number line. ● I can compare two decimal lengths using a ruler. ● I can compare two decimal dollar amounts using coin values. 	<ul style="list-style-type: none"> ● IXL 4th Grade <ul style="list-style-type: none"> ○ Decimals U1-U19 ● Math journal questions <ul style="list-style-type: none"> ○ Which is larger: 0.9 or 0.13? Explain your reasoning. ○ Classify the following decimals as Near to 0, About $\frac{1}{2}$, or Close to 1. 0.4, .15, .8, 0.47, 0.94. Explain your reasoning. Name 3 other decimals that belong in each group. ○ How many different decimals can you write using the digits 7, 0, and 8? Order the numbers from smallest to largest. Then, order them from largest to smallest. ○ Lisa ate 0.3 kg of grapes. Sarah ate 0.38 kg of grapes. Rachel ate an amount between Lisa and Sarah's amounts. How many kg of grapes might Rachel have eaten? Explain your thinking.

Topic 4: Word problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Learning Target	Possible Activities
<ul style="list-style-type: none"> ● I can convert measurements to solve distance problems ● I can convert measurements to solve volume problems. ● I can convert measurements to solve weight problems. ● I can convert time units to solve time problems. ● I can solve real life problems using operations and measurement conversions. ● I can solve measurement word problems that include whole numbers, fractions, and decimals. ● I can convert larger units into equivalent smaller units to solve a problem. 	<ul style="list-style-type: none"> ● IXL 4th Grade <ul style="list-style-type: none"> ○ Measurement N1-N7 ○ Time O1-O8 ● Math journal questions <ul style="list-style-type: none"> ○ Would you be more likely to measure the length of a bus in liters, meters, or kilometers? Explain your reasoning. ○ Name 3 objects you would measure using each of the following units: liters, meters, kilometers. What would the measurement of each object approximately be? Explain your reasoning. ○ Explain how the following units of measurement are related: <ul style="list-style-type: none"> ■ foot/yard/mile ■ pint/quart/gallon ○ What is the length of your desk in millimeters, centimeters, decimeters, meters? IF you find one measurement, how can you find the others without measuring? ○ Sam’s dog weighs 8 pounds. Liam’s dog weighs 125 ounces. Whose dog is heavier? Explain your reasoning. ● Math project: Temperatures Across the World <ul style="list-style-type: none"> ○ Collect, analyze and plot temperature data on a line graph (see the building gifted specialist for a hard copy of this project)

Activities Applicable to Every Unit

- Math Project: Design a Game
 - design a game based on a math concept
- Math Project: Create a Math Storybook
 - create a book based on a math concept

Other websites that might provide more suggestions for enrichment activities:

<http://www.k-5mathteachingresources.com/4th-grade-number-activities.html>

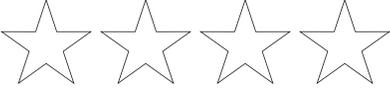
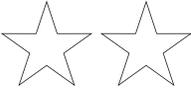
<http://www.byrdseed.com/tag/math/>

<http://www.mathwire.com/archives/enrichment.html#number>

<http://www.yummymath.com/?s=4th>

Journal activities adapted from: K-5 Math Teaching Resources (www.k-5mathteachingresources.com)

4th Grade Math Journal Rubric

<p style="text-align: center;">4</p> <p style="text-align: center;"></p>	<p>My work shows that I have a thorough understanding of this math concept.</p> <ul style="list-style-type: none">• I solved the problem correctly using an efficient strategy.• I have evidence of how I checked my answer.• My evidence is clear and organized. I included my work, what I did and why I chose the operation or strategy.• I effectively used math vocabulary that was specific to the task.
<p style="text-align: center;">3</p> <p style="text-align: center;"></p>	<p>My work shows that I have a good understanding of the math in this task.</p> <ul style="list-style-type: none">• I solved the problem correctly.• My explanation is clear. I included my work, what I did and why I chose the operation or strategy.• I used some math vocabulary.
<p style="text-align: center;">2</p> <p style="text-align: center;"></p>	<p>My work shows some understanding of the math in this task.</p> <ul style="list-style-type: none">• I solved part of the problem correctly <u>or</u> made some small errors.• My explanation is unclear or incomplete.• I used little math vocabulary <u>or</u> used some math vocabulary incorrectly.
<p style="text-align: center;">1</p> <p style="text-align: center;"></p>	<p>My work shows that I need more help to understand this math concept.</p> <ul style="list-style-type: none">• I could not solve the problem <u>or</u> my answer is incorrect.• I did not include an explanation.