

# Grade 4 Mathematics

## Second Trimester

November 5 – March 16

(Check out our Math Parent Resources at

<http://www.tufsd.org/wi/mathresources/grade4.html> )

November: Finding Fractions

### **Essential Questions:**

**Do I know how to find a fraction of a set?**

**How can I create fractions from unit wholes and collections of sets?**

**How do we identify equivalent fractional amounts?**

### **Skills:**

**Create fractional parts from unit wholes and from collections or sets.  
Identify equivalent representations of the same fraction.**

**Demonstrate understanding of fractions as equal parts of whole units  
or parts of a collection.**

**Use models and equivalent forms to judge the size of fractions.**

**Identify and compare fractional amounts.**

**Recognize equivalent representations of the same fractional amount.**

**Recognize and generate equivalent forms of commonly used  
fractions.**

Working with Fractions

### **Essential Questions:**

**How do I use models to determine the sums and differences of  
common fractions?**

**What are mixed numbers?**

**How do I decide where fractions are placed on a number line?**

**What is the relationship between fractions and decimals?**

### **Skills:**

Use models to show addition or subtraction of commonly used fractions.

Write number sentences to represent addition and/or subtraction of fractions.

Use visual models and equivalent forms to compare commonly used fractions.

Interpret data represented in a circle graph.

Explore addition of mixed numbers.

Estimate location of fractions on a number line.

Explore addition and subtraction of fractions with like denominators.

Estimates sums and differences for two fractions with like denominators.

Recognize and generate equivalent fractions.

## Multiplying by 1-Digit Numbers

### **Essential Questions:**

Do I understand the meaning of multiplication and its relationship to addition and division?

Do I know some strategies for multiplying mentally?

### **Skills:**

Use arrays to model multiplication facts.

Use multiplication to count numbers of objects.

Use multiplication and estimation to solve problems.

Develop fluency in multiplying whole numbers.

Develop strategies to multiply mentally.

## December: Working with Time

### **Working with Time**

### **Essential Questions:**

How can I express times in different ways?

Do I understand how seconds, minutes, and hours are related?

What are the different ways to express time?

What are different strategies that I can use to calculate elapsed time?

### **Skills:**

Read and interpret information from a line graph and a calendar.  
Express time as minutes past the hour and as minutes before the hour.

Write and solve problems involving intervals of time.

Understand the relationships among seconds, minutes, and hours.

Develop strategies for calculating elapsed time.

## Exploring Shapes and Perimeters

### **Essential Questions:**

How does the number of faces, vertices and edges influence the shape of a pyramid or prism?

How do I calculate the perimeter of different polygons?

### **Skills:**

Recognize and extend geometric and numeric patterns.

Recognize and count the number of faces, edges, and vertices in a solid shape.

Find the perimeters of the faces of solid figures.

Explore properties of pyramids.

Read and interpret information from a graph.

Estimate and find perimeters of everyday objects.

Use perimeter to solve problems.

Compare perimeters of shapes.

Find perimeters of regular polygons.

Find perimeters using different methods.

Understand that measurements are not always exact.

## January: Linking Multiplication and Division

### **Essential Questions:**

What types of math problems require multiplication and division to solve?

What does the division algorithm mean and how is it used to solve division problems?

### **Skills:**

Develop fluency in multiplying whole numbers.

Use multiplication and division to solve problems.

Use arrays to represent multiplication and division.

Recognize when to use multiplication and division when solving problems.

Use the division algorithm to divide 2 and 3 digit numbers.

Share a number of objects equally among members of a group.

## Dividing Large Numbers

### **Essential Questions:**

What are the various meanings of division?

What is the formula for area of a rectangle and why is it so closely linked to multiplication?

### **Skills:**

Understand various meanings of division.

Develop fluency in dividing whole numbers.

Understand the meaning of a remainder when dividing whole numbers.

Understand the effects of dividing whole numbers and whole numbers by 10.

Understand the place value structure of the base ten number system, including decimals.

## Manipulating Money

### **Essential Questions:**

What is a budget and why is it useful in every day life?

How do I calculate what my change should be when I purchase something?

How do I subtract across zeros while working with money?

### **Skills:**

Solve problems involving amounts of money.

Subtract across zeros. For example:  $4.00 - 2.34 = ?$

Make change using combined coins and dollar amounts.

## February: Multiplying by Tens

### **Essential Questions:**

What happens when I multiply a number by 10, 100, or 1,000?

### **Skills:**

Describe, extend and make generalizations about numeric patterns. Understand the effect of multiplying a whole number by a multiple of 10, 100, or 1,000.

Develop fluency in adding, multiplying, and dividing whole numbers. Generate equivalent representations of the same number by decomposing and composing numbers.

Develop and use strategies to find the area of a rectangle.

## Investigating Decimal Fractions

### **Essential Questions:**

How is the place value system related to decimals?

What are decimal fractions and why are they important in the world of money and measurement?

### **Skills:**

Understand the place value structure of the base ten number system and be able to read, write, represent, and compare decimal fractions through the hundredths place.

Write fractional amounts as common fractions and as decimal fractions.

Add and subtract decimals through the hundredths place.

Use models and equivalent forms to judge the size of decimals.

Develop and use strategies to estimate decimal sums and differences.

Describe, extend, and make generalizations about decimal patterns.

## Dealing with Data

### **Essential Questions:**

What is the difference between a picto-, bar and a line graph?

How do I collect and organize data?

What is the best way to represent a certain set of data?

Why is the scale/key always important in any graph?

**Skills:**

Develop organized picto-graphs and be able to read and interpret.

Develop organized bar graphs and be able to read and interpret.

Read and interpret line graphs.

Create accurate and constant scales for graphs.

Beginning of March: Multiplying by 2-Digit Numbers

**Essential Questions:**

What are factors, multiples and products and how do they relate to 2 digit multiplication?

How can I compose and decompose numbers to generate the same number?

**Skills:**

Develop fluency in multiplying whole numbers.

Recognize equivalent representations for the same number and generate them by decomposing and composing numbers.

Understand various meanings of multiplication.