

Grade 5 Mathematics

Second Trimester

November 5 – March 16

(Check out our Math Parent Resources at

<http://www.tufsd.org/wi/mathresources/grade5.html>)

November: Investigating Length and Perimeter

Essential Questions:

Do I know that different shapes can have the same perimeter?

How does a change in length and width affect the perimeter of a rectangle?

Skills:

Understand the need for having standard units of measure.

Convert units within the customary system of measurement.

Use decimal notation to express metric units.

Convert units of measurement within the metric system.

Develop and use strategies to estimate results of computations with whole numbers and with decimal numbers.

Carry out simple unit conversions within a system of measurement.

Develop, understand, and use a formula to find the perimeter of a rectangle.

Understand how changes to a 2 dimensional shape affect perimeter.

Working with Fractions

Essential Questions:

What is the relationship between the denominator and the size of a fractional piece?

What are the similarities and differences in strategies when adding or subtracting fractions with like denominators?

Skills:

Recognize and generate equivalent forms of commonly used fractions.

Develop and use strategies to estimate computations involving fractions.

Use concrete or visual models and equivalent forms to add or subtract commonly used fractions.

Recognize and generate equivalent forms of commonly used fractions.
Develop understanding of fractions as part of a collection and compare fractional parts of collections.
Develop and use strategies to add and subtract fractions (including mixed numbers).
Use visual models to generate equivalent forms of unrelated fractions.
Use visual models to add and subtract unrelated fractions.
Compare fractions using $<$, $>$, or $=$.
Compare and order fractions with unlike denominators.
Simplify fractions to lowest terms.
Convert improper fractions to mixed numbers and visa versa.

December: Analyzing Everyday Data

Essential Questions:

Can I find the median and mean of a set of data?
Can I construct, read, interpret, and represent data in a bar, circle, and line graph?

Skills:

Classify and describe different types of graphs.
Construct, read, and interpret bar graphs.
Explore measures of central tendency: median and mean.
Collect and organize a set of data and identify the median.
Calculate the mean for a set of data.
Develop understanding of a fraction as part of a whole.
Recognize and generate equivalent form of commonly used fractions.
Represent data as a pie (circle) graph.
Describe the shape and important features of a set of data.
Collect data using observations, surveys, or experiments.
Construct a line graph to represent data.
Read and interpret data presented in a line graph.

Working with Large Numbers

Essential Questions:

How do you estimate large numbers?
When is it appropriate to represent large numbers as fractions of millions?

Skills:

Understand the place value structure of the base ten number system and be able to represent and compare whole numbers.

Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.

Interpret data found in charts and graphs.

Describe important features of a set of data and compare related data.

Propose and justify conclusions and predictions that are based on data.

Create equivalent representations for the same number.

Develop and use strategies to estimate large numbers.

January: Thinking Visually

Essential Questions:

What is the difference between a flip, slide, and a turn?

Why do some shapes have more lines of symmetry than others?

Skills:

Identify and/or draw flips, slides, and turns for 2 dimensional shapes.

Find and/or draw all lines of symmetry.

Identify, describe, and create rotational symmetry in 2 dimensional shapes or designs.

Note relationships between the measure of the central angle in a simple design and the number of times the design repeats.

Create 2 dimensional designs that have either line symmetry or rotational symmetry.

Adding and Subtracting Decimal Fractions

Essential Questions:

What is the relationship between fractions and decimals?

What is the relationship between the place value and size of the decimal?

Do I know how to add and subtract decimals?

Skills:

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

Develop understanding of decimals as locations on number lines and as divisions of whole numbers.

Develop and use strategies to estimate computations involving decimals.
Understand the place value structure of decimals and decimal fractions.
Represent and compare decimals.
Add and subtract decimals.
Add and subtract decimal fractions in solving real world problems.
Make predictions and justify conclusions based on data.
Read decimal numbers using base ten terminology.
Develop and use strategies to estimate computations involving decimals.
Use metric measurements as a context for representing, comparing, adding, and subtracting decimal fractions.
Carry out simple unit conversions such as within a system of measurement.
Visualize, model, and understand ten thousandths.

February: Using Division to Find Rates

Essential Questions:

Why does a unit price of an item decrease when the amount purchased decreases?
How are ratios and fractions related?

Skills:

Use inverse relationships between multiplication and division to solve problems.
Develop and use strategies to estimate quotients of whole numbers and judge the reasonableness of the result.
Use division to identify rates (special ratios).
Develop fluency in dividing whole numbers.
Note patterns between basic number combinations and related problems.
Develop fluency with basic number combinations for division and use them to mentally compute related problems.
Develop fluency in estimating and calculating quotients.
Calculate and use averages to solve problems.
Understand the concept of ratio and the different ways to express ratios.
Create and describe ratios to compare and analyze data.

Algebraic Thinking

Essential Questions:

Where can I find numeric patterns in the real world?

Can I make generalizations about data within graphs?

Can I describe patterns that I analyzed?

Skills:

Describe and extend numeric patterns in order pairs and plot them on a coordinate grid.

Represent and analyze patterns using words, tables, or graphs.

Describe, extend, and make generalizations about geometric and numeric patterns.

Represent data using tables and graphs as line plots or line graphs.

Beginning of March: Working with Decimals

Essential Questions:

Can I fluently add, subtract, multiply and divide decimals?

Do I have full understanding of decimals and can compare their values?

Do decimals have the same relationships as whole numbers?

Skills:

Use effective strategies to add, subtract and multiply decimals mentally or with models.

Identify and use inverse relationships between operations such as division and multiplication to solve problems.