

Grade 3 Mathematics

Second Trimester

November 5 – March 16

(Check out our Math Parent Resources at

<http://www.tufsd.org/wi/mathresources/grade3.html>)

November: Analyzing Shapes

Essential Questions:

Can I identify, describe, compare, contrast, and draw 2 dimensional shapes?

Where is a line of symmetry drawn and can there be more than one line of symmetry?

Skills:

Identify and describe 2 and 3 dimensional shapes in the environment.

Compare and contrast the attributes of 2 and 3 dimensional shapes.

Sort polygons by a variety of attributes.

Use a square corner (right angle) as a benchmark for determining angles of various sizes.

Describe and classify 2 dimensional shapes according to their attributes.

Draw shapes based on attributes.

Identify and create 2 dimensional shapes that have line symmetry.

Draw lines of symmetry in 2 dimensional shapes.

Predict and describe the results of sliding 2 dimensional shapes on a grid.

Use transformations (slides, flips, and turns) to move or repeat a shape.

Understanding Fractions

Essential Questions:

Do I understand that a fraction represents one or more equal parts of a whole?

Can I construct models, name in words, and record fractions in symbolic form?

Do I know how to show halves and fourths?

Skills:

Recognize that a fraction represents a part of a unit whole that has been divided into equal parts of a fair share.

Divide models into equal parts.

Compare fractional parts of an area model using concrete materials.

Recognize fractions equivalent to one whole.

Read and write fractions using mathematical notation.

Use concrete materials to understand and compare fractions.

Recognize and generate equivalent fractions.

Understand that different models can show one whole.

Construct different regions to demonstrate $\frac{1}{2}$ or $\frac{1}{4}$ of a whole.

Construct the whole unit when given a region representing $\frac{1}{2}$ or $\frac{1}{4}$.

December: Developing Multiplication Concepts

Essential Questions:

How can I use the “equal groups” and the “array” model to show multiplication?

What is a “turn around” fact? Do I understand the “rules” for multiplying by one and zero?

Skills:

Model and solve multiplication problems (forming equal groups with concrete materials and using array pictures).

Use and interpret the symbol for multiplication.

Use and interpret the commutative property.

Create arrays to find factors.

Identify factors for a known total.

Create groups of arrays to model multiplication when one is a factor.

Multiply by one.

Construct multiplication patterns involving zero (empty groups).

Multiply by zero.

Developing the Concept of Division

Essential Questions:

What is division?

How are multiplication and division related?

Do I understand that division means equal groups or equal size?

Skills:

Use division to find either the number of groups or the size of the groups in a set.

Understand the relationship between multiplication and division.

Understand that division means finding the size of a group (share) or finding the number of groups.

Understand and use the symbol \div for division.

Identify, understand, and use the relationship between multiplication and division.

Begin to develop fluency in dividing whole numbers.

Use arrays to model multiplication and division.

Explore division with remainders.

January: Collecting and Analyzing Data

Essential Questions:

How is data collected, organized, and displayed on a bar graph?

How can a graph be used to compare data?

What are the parts of a picture graph?

How are adding, skip counting, and multiplying helpful when reading a picture graph?

Skills:

Read a bar graph and analyze data.

Use a graph to compare data.

Make predictions based on data.

Compare different representations of the same or related data.

Analyze data to make inferences.

Collect data using a survey; record results in a bar graph.

Use a key to determine the number of units represented in a picture graph.

Understand that when there is a large range of data it can be organized into intervals.

Read and interpret information from picture graphs.

Extract information from graphs and charts.

Use logical reasoning to analyze information from graphs and charts.

Understand that a graph may show overlapping information.

Develop fluency in combining money amounts (decimals and whole numbers).

Organize and represent data using tables, charts, and graphs.

Subtracting 2 and 3-Digit Numbers

Essential Questions:

Can I use mental subtraction to find a difference?

Can I choose the appropriate operation to solve a story problem?

When should I estimate to get an answer?

Skills:

Develop fluency with addition, subtraction, multiplication, and division.

Solve 1 and 2 step problems.

Develop and use strategies to estimate results of whole number operations.

Understand that an estimate represents a range of exact numbers.

Apply appropriate strategies to solve real world subtraction problems.

Solve subtraction problems with mental computation.

Select appropriate methods for subtracting whole numbers.

Solve problems involving subtraction of 3 digit numbers.

Solve problems that arise in everyday situations.

February: Analyzing 3-D Shapes

Essential Questions:

Can I identify 3 dimensional shapes in different positions in space?

Can I use pictures of the front, back, and side views of a 3 dimensional shape to construct it?

How can I identify and describe a given 3 D object?

Can I classify different 3 D shapes?

Skills:

Visualize 3 dimensional objects from different perspectives.

Describe locations.

Describe, identify, and develop vocabulary for attributes of 3 dimensional shapes.

Define classes of shapes and classify 3 dimensional shapes.

Construct 3 dimensional geometric shapes based on pictures and descriptions.

Identify and build 3 dimensional objects from 2 dimensional objects.

End of February-Beginning of March:

Multiplication and Division Facts

Essential Questions:

How are multiplication and addition related?

How are division and subtraction related?

How are division and multiplication related?

What are square numbers?

Do I know fluently my basic multiplication facts?

How can I use the doubling strategy to learn other facts?

Skills:

Develop fluency with basic number combinations (basic facts) for multiplication.

Develop strategies for using a known fact to find an unknown fact.

Develop strategies for multiplication.

Identify and use the inverse relationship between multiplication and division.

Identify a fact family for a given fact.

Apply appropriate strategies to solve problems.

Develop models for square numbers by constructing arrays.

Find patterns in square numbers.

Use arrays to find factors of numbers.

Use arrays to solve problems.

Develop strategies to determine multiplication facts for nines.

Develop fluency with basic number combinations for multiplication.

Use “double double” and “build on” strategies to develop new multiplication facts.

Develop fluency with basic number combinations for multiplication.

Use multiplication and division in problem solving situations.

Develop strategies to estimate products.