

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. A. Students will understand and apply number properties and operations.

Grade Level Objective: 1.A.5.1: develop an understand of addition, subtraction, multiplication, and division concepts and strategies for basic facts and related facts

Instructional Strategies: Students will practice their understanding of the number properties and apply their knowledge to the number properties to the daily problem solving that they are required to do each day.

Assessments: Teacher Observation

Instructional Timeline: August through May

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Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. A. Students will understand and apply number properties and operations.

Grade Level Objective: 1.A.5.2: develop fluency and quick recall of addition, subtraction and multiplication facts and related division facts

Instructional Strategies: Students will practice their facts through this internet drill <http://resources.oswego.org/games/mathmagician/cathymath.html> and they will go through multiplication facts with a partner.

Assessments: Teacher observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. A. Students will understand and apply number properties and operations.

Grade Level Objective: 1.A.5.3: develop fluency with multi-digit addition, subtraction, multiplication and division facts

Instructional Strategies: Throughout the school year, students are given basic facts practice. <http://www.aea11.k12.ia.us/e2t2/dmr.html> THIS IS A VERY IMPORTANT WEBSITE. THESE DAILY REVIEW ALONE IMPROVE STUDENT ACHIEVEMENT.

Assessments: Basic Facts worksheets and teacher observations.

Instructional Timeline:

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Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. A. Students will understand and apply number properties and operations.

Grade Level Objective: 1.A.5.4: extend place value concepts to represent and compare whole numbers

Instructional Strategies: Students are given many opportunities to write whole numbers in different ways. Students are required to write whole numbers in expanded form, standard form, short word form. They also demonstrate individual place value in these forms.

Assessments: Teacher observation, homework, and chapter test

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. A. Students will understand and apply number properties and operations.

Grade Level Objective: 1.A.5.5: develop an understanding of commonly used fractions, including recognizing and generating equivalent representations and introduce the relationship of fractions and decimals

Instructional Strategies: Card game, United Streaming Video, M & M Fraction Activity

Assessments: Homework, chapter test, Teacher Observation

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. B. Students will understand and apply concepts and procedures of algebra.

Grade Level Objective: 1.B.5.1: represent and analyze patterns and relationships involving addition, subtraction, multiplication, and division

Instructional Strategies:

<http://illuminations.nctm.org/LessonDetail.aspx?id=L291> This Lesson is from Navigating Through Algebra from the Navigations Series. It would be beneficial to order this book on loan through Heartland AEA for additional lessons for this objective.

Assessments: Homework, chapter test, Teacher Observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. B. Students will understand and apply concepts and procedures of algebra.

Grade Level Objective: 1.B.5.2: identify the commutative, associative, and distributive properties and use them to compute with whole number

Instructional Strategies: Students in groups of 4-5 will create a poster of one of the properties. They will put the property and an example on a poster. Then they will pass the poster on to another group who will then write another example of that same property.

Assessments: Teacher observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. B. Students will understand and apply concepts and procedures of algebra.

Grade Level Objective: 1.B.5.3: represents and analyze patterns and functions, using words, tables, and graphs

Instructional Strategies: Students can complete function tables on this website link. <http://www.ixl.com/math/practice/grade-5-function-tables>

Assessments: Teacher Observation

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. C. Students will understand and apply concepts of geometry.

Grade Level Objective: 1.C.5.1: Students will recognize and describe shapes and structures in the physical environment.

Instructional Strategies: Lessons from Navigating Geometry from the Navigations Series including “Build what I have Created.”

Assessments: Homework, Tests

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. C. Students will understand and apply concepts of geometry.

Grade Level Objective: 1.C.5.2: explore congruence and similarity

Instructional Strategies: Practice sorting a pair of congruent and/or similar figures on http://www.harcourtschool.com/activity/similar_congruent/.

Assessments: Homework and chapter test

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. C. Students will understand and apply concepts of geometry.

Grade Level Objective: 1.C.5.3: predict and describe the results of sliding, flipping, and turning

Instructional Strategies: Motion Commotion lesson from Navigating Geometry. Students create a paper strip of a shape being slide, flipped, or turned.

Assessments: Teacher Observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. C. Students will understand and apply concepts of geometry.

Grade Level Objective: 1.C.5.4: use geometric models to solve problems such as determining perimeter, area, volume, and surface area

Instructional Strategies: Students will participate in a lesson after reading Sir Cumference and the First Round Table. (See attached)

Assessments: Teacher Observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. C. Students will understand and apply concepts of geometry.

Grade Level Objective: 1.C.5.5: use ordered pairs on a coordinate grid to describe points

Instructional Strategies: Create a coordinate grid using masking tape on the classroom floor. Students will identify coordinates and locations using index cards.

Assessments: Teacher Observation

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. D. understand and apply concepts of measurement.

Grade Level Objective: 1.D.5.1: select and apply appropriate standard (customary and metric) units and tools to measure length/distance, temperature, time, volume, weight, and the size of angles

Instructional Strategies:

Distance Calculation

Materials: Children, tape measure

This activity is intended to help children develop a sense of distance. They will be pacing off distances in order to be able to estimate a distance.

- 1) Ask children how they might calculate the length of the playground.
- 2) Share about the ability to calculate using a pacing technique. (my pace is one for three feet)
- 3) Go to the play ground and have them figure their pace for ten yards or thirty feet.
- 4) They will then figure out how long the playground is.
- 5) Have them figure out how long the school is.
- 6) Use these same numbers to begin an lesson on area.

This activity would be a great lead - in for a lesson in orienteering. You could have them figure the perimeter of the school, the area of the school, or playground.

For advanced children start having them learn how to use a compass, and then you can chart directions.

Assessments: Teacher Observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. D. understand and apply concepts of measurement.

Grade Level Objective: 1.D.5.2: select and use benchmarks (1/2 inch, 2 liters, 5 lbs., etc.) to estimate measurements

Instructional Strategies: Students will view pictures of benchmarks and objects to analyze their estimates.

Assessments: Homework

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. E. Students will understand and apply concepts in probability and statistics

Grade Level Objective: 1.E.5.1: introduce the distribution of data using mean, median, mode and range

Instructional Strategies: Students will be given a set of data and calculate the statistics and discuss which statistic would best represent the data. The class will formulate a discussion regarding the solution.

Assessments: Homework and chapter test

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. E. Students will understand and apply concepts in probability and statistics

Grade Level Objective: 1.E.5.2: propose and justify conclusions and predictions based on data

Instructional Strategies: Students will analyze different graphs including misleading ones and discuss with the class their predictions and trends that they discover.

Assessments: Teacher observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 1 Students can understand and apply a variety of math concepts. E. Students will understand and apply concepts in probability and statistics

Grade Level Objective: 1.E.5.3: predict the **probability** of simple experiments and events and test the predictions and discuss the degree of likelihood using words such as certain, equally, likely, or impossible

Instructional Strategies

PURPOSE: The purpose of this activity, is to begin the process of helping students to learn the basic principles of probability.

OBJECTIVES: As a result of this activity the student will:

1. Conduct an experiment
2. Determine if a game is "fair"
3. Collect data (table)
4. Interpret data (range, mode, median)
5. Display data (line graph)
6. Conduct analysis of game (tree diagram)
7. State and apply the rule (definition) for probability

RESOURCES, MATERIALS: Overhead grid, overhead, pencils, paper.

ACTIVITIES & PROCEDURES:

1. Introduce activity with a demonstration of game: rock, scissors, paper.
2. Divide class into pairs (player A and player B) and have them play the game 18 times.
3. Use overhead graph grid to graph the wins of player A in red (how many A players won one game, two games, etc.) Do the same for all B players in a different color.
4. Help students determine range, mode, and mean for each set of data. Compare the results.
5. Do a tree diagram to determine the possible outcomes.
6. Answer the following questions to determine if the game is fair.
 - a. How many questions does game have ? (9)
 - b. Label each possible outcome on tree diagram as to win for A, B, or tie.
 - c. Count wins for A (3)
 - d. Find probability A will win in any round ($3/9 - 1/3$) Explain what probability means favorable outcomes/ possible outcomes.
 - e. Count wins for B (3)
 - f. Find probability B will win in any round (3/9).
 - g. Is game fair? Do both players have an equal probability of winning in any round?
(Yes)
7. Compare the mathematical model with what happened when students played the game.

TYING IT ALL TOGETHER:

1. Use this as an introduction to a unit on probability.
2. Follow-up with discussion about how probability is used in world.
3. Play game again using 3 students. Using the following rules:

1. A wins if all 3 hands are same.
2. B wins if all 3 hands are different.
3. C wins if 2 hands are same.

There will be 27 outcomes this time. 3 to the third power. $3*3*3=27$

Assessments: Teacher Observation

Instructional Timeline:

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Grade Level: 5th

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Math Standard/Benchmark: 2 Students can understand and apply methods of estimation. A. Students will understand and apply concepts and procedures of standard rounding and number sense.

Grade Level Objective: 2.A.5.1: develop the ability to estimate the results of computation with whole numbers and be able to judge reasonableness

Instructional Strategies: Students are asked to check for reasonableness when they are problem solving and when they are computing. This is taught all year long. Students will eventually form the habit of checking for reasonableness.

Assessments: Homework and Chapter tests

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 2 Students can understand and apply methods of estimation. A. Students will understand and apply concepts and procedures of standard rounding and number sense.

Grade Level Objective: 2.A.5.2: round whole numbers the nearest tens, hundreds, and thousands

Instructional Strategies: Students will practice this through their daily math review which students will complete everyday.

Assessments: Teacher observations

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 2 Students can understand and apply methods of estimation. A. Students will understand and apply concepts and procedures of standard rounding and number sense.

Grade Level Objective: 2.A.5.3: estimate the answer to an addition and subtraction problems before computing and determine if the computed answer is correct

Instructional Strategies:

Assessments:

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 2 Students can understand and apply methods of estimation. A. Students will understand and apply concepts and procedures of standard rounding and number sense.

Grade Level Objective: 2.A.5.4: use benchmarks to help develop number sense

Instructional Strategies: Students will look at actual benchmarks in the room like a stack of books and from there makes an estimate of a given problem. There are worksheets provided in the Harcourt text.

Assessments: Chapter test

Instructional Timeline:

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Grade Level: 5th

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Math Standard/Benchmark: 3 Students can solve a variety of math problems. A. solve math problems

Grade Level Objective: 3.A.5.1: can solve single step and multiple step math problems

Instructional Strategies: Students will complete the problem of the day with each of the lessons.

Assessments: Teacher observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 3 Students can solve a variety of math problems. A. solve math problems

Grade Level Objective: 3.A.5.2: identify extraneous and insufficient information in problems

Instructional Strategies: Students will solve problems on www.mathplayground.com. Some of the problems have extra information that is not necessary to solve the problem.

Assessments: Teacher observation

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 3 Students can solve a variety of math problems. B. understand and apply problem-solving approaches and procedures.

Grade Level Objective: 3.B.5.1: choose a method for solving a problem

Instructional Strategies: Students will complete varies problems using different problem solving strategies. (see attached)

Assessments: Homework and teacher observation

Instructional Timeline:

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Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 4 Students can interpret data presented in a variety of ways. A. Students will use tables and graphs to locate and read information.

Grade Level Objective: 4.A.5.1: represent and analyze data using tallies, pictographs, table, line plots, bar graphs, circle graphs and line graphs

Instructional Strategies: Title - The Incredible Yuma Bat and Clapper Rail - Data

Purpose: to introduce to the students the wonderful world of Bats and Clapper Rails.

Materials: Histogram, line graph, scatters plot, or stem-and-leaf plot Computer power Point, paper and pencil.

Objective: The students will be able to construct a histogram, line graph, scatter plot, or stem-and-leaf plot to the needed graphs exercise and show how these two data's are in conjunction with each other.

Anticipatory Set: The graphs and plots will be first explained about in the form of a computer graphing program and this will enable the student to collect all the data needed to make those graphs with ease and stability.

The teacher will teach what a histogram, line gram, scatter plot, and stem-and-plot is. The teacher will have a visual aid of these plots and will show a power point presentation of these and how they will be used in the class. After the show the teacher will pass around papers of each plot and the students will choose what plot they want to use. The plot most selected will be what the whole class will do and they will have to use it in their studies of the Bat and Clapper Rail.

Assessments: Teacher observation

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 4 Students can interpret data presented in a variety of ways. A. Students will use tables and graphs to locate and read information.

Grade Level Objective: 4.A.5.2: construct and analyze tables, bar graphs, picture graphs and line plots **(TI)**

Instructional Strategies: Students will complete or construct a graph and interpret the information. The lesson attached is an example.

Assessments: Homework and chapter test

Instructional Timeline:

MStM Math Curriculum Lesson Plan Template

Grade Level: 5th

Teacher: Mrs. Kuhns

Math Standard/Benchmark: 4 Students can interpret data presented in a variety of ways. B. interpret data from a variety of sources.

Grade Level Objective: 4.B.5.1: compare different representations of the same data and evaluate how well each representation shows important aspects of the data

Instructional Strategies: Students will create different types of graphs with the same data to see what representation would be best. **(see attached website)**

Assessments: teacher observation

Instructional Timeline: