Sacred Heart School
Syllabus title: Mathematics Grade 4
Teacher Information: Maureen Kamercia
Grade 4
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Course description: The fourth grade math program balances computational skill, conceptual understanding and problem solving, while introducing pre-algebra and algebraic concepts. Through repetition, and memorization of math facts, and fluency in computation the students learn to use mathematics in real life situations.

Course content: Throughout the series, emphasis is placed on the development of mathematical concepts and their applications, as well as on proficiency in problem solving, mathematical reasoning and higher order thinking. To facilitate this, the series included the following:

- Investigative work
- Communication skills in mathematics
- Appropriate computation and estimation skills
- Mental calculation
- Problem-solving

General course objectives:

Math Facts

The student will:

- Add, subtract, and order whole numbers
- Memorize multiplication and division facts through 12

Number and Operations

- Identify place value through the billions
- Add, subtract, order, and compare numbers
- Use conventional symbols (<, >, +) for number comparison
- Write numbers in standard form, expanded form , and word form
- Compare decimals in tenths and hundredths using money
- Use operations with decimals
- Extend place value to decimals
- Draw factor trees
- Identify Least Common Multiples and Greatest Common Factors

Whole Number Computation and Estimation

- Compute using regrouping
- Use strategies for mental addition, subtraction, multiplication, and division
- Subtract numbers to thousands with and without regrouping
- Multiply 2-digit numbers by 1-digit numbers and 2-digit numbers
- Multiply 3-digit numbers by 1-digit numbers
- Use patterns to find products with factors
- Divide numbers in the thousands by single number divisors with or without remainders
- Divide up to four-digit dividends by one-digit divisors
- Model division of up to four-digit dividends by one-digit divisors
- Round numbers to estimate sums
- Draw pictures and write related number sentences to solve problems
- Identify prime and composite numbers

Fractions

- Identify equal fractions
- Identify and communicate fractions written as numbers, words, and in drawings
- Find equivalent fractions using the least common denominator
- Express equivalent fractions in simplest form
- Add and subtract fractions
- Compare proper fractions
- Solve word problems involving addition and subtraction of fractions with like denominators
- Multiply a fraction by a whole number
- Solve word problems involving multiplication of a fraction by a whole number

Geometry

- Identify geometric figures on a plain
- Identify parallel, perpendicular, and intersecting lines
- Identify rays
- Identify two and three dimensional geometric shapes
- Calculate area, perimeter
- Measure volume by counting cubic units
- Classify angles as right, acute or obtuse
- Measure angles
- Analyze shapes of symmetry

Measurement and Data

- Represent and interpret data
- Solve problems involving addition and subtraction of fractions by using measurement data in line plots
- Make a line plot to display measurements involving halves, fourths, and eighths of a unit

Estimation

- Round numbers up to the hundred thousand place value
- Use various strategies to estimate numbers
- Write and solve multi-step word problems involving estimation

Algebra

- Use the properties of addition, subtraction, multiplication, and division in computation
- Recognize that a whole number is a multiple of each of its factors
- Create and extend patterns that follow a given rule
- Identify and apply various properties

Course materials:

- Pearson Envision Math Common Core textbook /Supplements
- Worksheets
- Measurement tools
- Manipulative tools

Instructional Strategies:

- Lecture
- Small groups
- Modeling

- Peer tutoring
- Discovery with manipulative
- Problem finding/solving
- Computer practice/applications

Assessment/grading:

- Observations of verbal and written work
- Fluency/Mastery of addition, subtraction, multiplication, and division facts
- Chapter and unit testing

Student expectations:

- Actively participate in individual and group work
- Work to complete assignments on time and review information in class
- Be responsible for identifying any missing work assignments and completing them in a timely manner of within a week when absences occur
- Be respectful of other students and adults, their property and the classroom