

**St. Clement's School**  
**Course Outline**  
**Fifth Grade Math**  
**Fall Semester**

This overall course outline is a general guide to familiarize students and parents with an overview of the course. It is an approximation of the content and objectives of the course for the fall semester. The rate of progress may vary depending upon the learning pace that the students can accomplish through the semester.

- I. Course content
  - A. Unit one
    - 1. Familiarization with the Student Reference Book and Journal
    - 2. Multiplication arrays
    - 3. Factors and products
    - 4. Divisibility
    - 5. Prime and composite numbers
    - 6. Square numbers
    - 7. Unsquaring numbers
    - 8. Factor strings
    - 9. Prime factorization
  - B. Unit two
    - 1. Strategies for estimating
    - 2. Place value for whole numbers and decimals
    - 3. Addition and column addition strategies and review
    - 4. Subtraction strategies and review
    - 5. Multiplication of whole numbers and decimals
    - 6. Number stories
    - 7. Probability
    - 8. Place value from decimals to trillions
    - 9. Maximum, minimum, median, mode, and mean
  - C. Unit three
    - 1. Review probability and estimation
    - 2. Angle measurement
    - 3. Protractor skills
    - 4. Compass skills
    - 5. Triangles
    - 6. Polygons
    - 7. Tessellations
  - D. Unit four
    - 1. Division facts, mental math in division
    - 2. Long division methods
    - 3. Estimation in division
    - 4. Divide with decimals
    - 5. Understanding the remainder
    - 6. Variables

7. Review mathematical skills
- E. Unit five
1. Review fractions and parts of large whole numbers
  2. Review the whole, or one
  3. Mixed numbers and improper fractions
  4. Ordering fractions
  5. Equivalent fractions
  6. Rename fractions as decimals
  7. Rounding decimals
  8. Finding decimals between pairs of numbers
  9. Fraction and decimal equivalents
  10. Fractions, decimals, and percents
  11. Bar and circle graphs
  12. Percents and circle graphs
- II. Learning objectives
- A. Students will be able to:
1. Know multiplication and division facts, draw and use arrays for factors and products
  2. List the factors of a number, find the prime factorization of a number
  3. Identify even and odd numbers
  4. Understand exponential notation and rewrite numbers written in exponential notation
  5. Understand how square numbers and their square roots are related
  6. Test numbers for divisibility
- B. Students will be able to:
1. Round numbers to designated places
  2. Estimate problems by using ballpark estimating and magnitude estimating strategies
  3. Find the sum and difference of multi-digit whole numbers and decimals
  4. Multiply multi-digit whole numbers and decimals
  5. Write and solve open sentences for number stories
  6. Apply chance vocabulary and become familiar with probability
  7. Know place value from thousandths to billions, become familiar with trillions
  8. Identify the maximum, minimum, median, mode, and mean for a data set
- C. Students will be able to:
1. Apply vocabulary and skills of estimation and probability to various situations
  2. Find the degrees of angles based on relationships with other angles and circles
  3. Identify types of angles
  4. Use a protractor to measure and draw angles
  5. Use a compass to draw circles, copy line segments, and investigate angles formed by intersecting lines
  6. Define equilateral, isosceles, scalene, and congruent triangles
  7. Classify and sort geometric shapes

8. Find the sum of the measure of the angles in polygons
9. Discover tessellations and polygons that tessellate
10. Solve geometric problems and utilize polygon vocabulary and attributes

D. Students will be able to:

1. Memorize division facts
2. Mentally divide two digit numbers by one digit number
3. Construct and perform division algorithms for whole numbers by whole numbers
4. Make magnitude estimates for quotients
5. Divide decimals by whole numbers
6. Solve division number stories and interpret remainders within the context of the story
7. Use variables to represent a range of values
8. Strengthen a variety of mathematical skills

E. Students will be able to:

1. Understand, read, and construct fractions, fractions of shapes, and fractional parts of whole numbers
2. Understand the whole, or one, as a fraction
3. Covert between mixed numbers and improper fractions
4. Use manipulatives or drawings to order fractions
5. Use manipulatives or drawings to find equivalent fractions
6. Formulate multiplication and division rules for finding equivalent fractions
7. Rename fractions as decimals and percents, decimals as percents and fractions, etc.
8. Round decimals to the thousandths
9. Find the decimal between pairs of numbers
10. Use a calculator to find decimal equivalents for fractions and to convert fractions to decimals and percents
11. Construct bar graphs
12. Understand the properties of circle graphs
13. Find the percentages of circle graphs
14. Construct accurate circle graphs

III. Assessment

Students are expected to work to the best of their ability and to take an interest in and responsibility for their learning.

A. Homework

1. Assignments are generally given on a daily basis and will be written on a designated place in the classroom. It is the student's responsibility to record the assignments on a homework sheet or other organized place.

B. Weighting and re-dos

1. Daily class assignments and homework assignments, as well as any quizzes, will be weighted once in the averaging of each student's grade.
2. Homework with a grade below 60 may be redone with a parent's signature to receive a passing grade of 70. Re-dos are not available for late work or tests.

