Shakopee Area Catholic School
Math Standards and Benchmarks
Grade Level: 5

The students will apply skills of mathematical representations, communication and reasoning

1. Communicate, reason and represent situations mathematically.
2. Solve problems by distinguishing relevant from irrelevant information, sequencing and prioritizing information and breaking multi-step problems into simpler parts.
3. Evaluate the reasonableness of the solution by considering appropriate estimates and the context of the original problem.
4. Know when it is appropriate to estimate and when an exact answer with whole numbers, fractions or decimals is needed.
5. Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context.
6. Support mathematical results using pictures, numbers, and words to explain why the steps in a solution are valid and why a particular solution method is appropriate.
7. Organize, record and communicate math ideas coherently and clearly.

The students will be able to represent fractions, decimals and whole numbers in a variety of ways, to qualify information and to solve real-world and mathematical problems. The students will understand the concept of negative numbers.

1. Read and write numbers up to three decimals places in numerals and words.
2. Represent and compare positive and negative integers.
3. Recognize equivalent common fractions, decimals and percentages.
4. Use a variety of estimation strategies such as rounding, truncation, over-and underestimation and decide when an estimated solution is appropriate.

The students will be able to compute fluently and make reasonable estimates with fractions, decimals, and whole numbers, in real-world and mathematical problems. The students will understand the meaning of arithmetic operations and how they relate to one another.

1. Use addition, subtraction, multiplication and division of multi-digit whole numbers to solve multi-step, real-world and mathematical problems.
2. Add and subtract numbers with up to two decimal places in real-world or mathematical problems.
3. Add and subtract, without a calculator, numbers containing up to five digits, such as 546.23 - 84.1.
4. Multiply, without using a calculator, a two-digit whole number or decimal by a two-digit whole number or decimal, such as 3.2 x 3.4.
5. Divide, without using a calculator, a three-digit whole number or decimal by a one-digit whole number or decimal, such as 3.51 divided by 3.
6. Model simple problems, arising from concrete situations, involving the addition and subtraction of common fractions and mixed numbers as well as fractions where the common denominator equals one of the denominators.
7. Interpret percents as a part of a hundred.

The students will understand and describe patterns in numbers, shapes, tables and graphs.

1. Identify patterns in numbers, shapes, tables, and graphs and explain how to extend those patterns.
2. Represent mathematical relationships using equations.
3. Evaluate numeric expressions in real-world and mathematical problems.

The students will represent data and use various measures associated with data to draw conclusions and identify trends.

1. Determine whether or not a given graph matches a given data set.
2. Use fractions and percentages to compare data sets.
3. Collect data using measurements, surveys or experiments and represent the data with tables and graphs with labeling.
4. Find mean, mode, median, and range of a data set.

The students will model simple probability by displaying the outcomes for real-world and mathematical problems.

1. Represent all possible outcomes for a simple probability problem with tables and grids, and draw conclusions from the results.

The students will understand the concepts of reflection and rotation symmetry as applied to two-dimensional objects.

1. Identify reflection and rotation symmetries in two-dimensional shapes and designs.

The students will be able to sort, classify, compare and describe two- and three- dimensional objects.

1. Sort three-dimensional objects according to number and shape of faces, number of edges and vertices.
2. Classify, compare and identify acute, right and obtuse angles.
3. Classify polygons as regular or irregular.
4. Know the sum of the angles in triangles and quadrilaterals.

The students will be able to measure and calculate length, area and capacity using appropriate tools and units to solve real-world and mathematical problems.

1. Find the area and perimeter of a triangle by measuring or using a grid, and label the answer with appropriate units.
2. Use a two-dimensional pattern of a cube or rectangular box to compute the surface area.
3. Select and apply the appropriate units and tools to measure perimeter, area and capacity.