



Mathematics Outcomes

1. Students will use appropriate problem solving strategies.

Students will

Kindergarten

- Repeat pattern;
- Create patterns;
- Sort and classify by attributes.

Grade 1

- Choose between addition and subtraction to solve a problem;
- Use methods such as "doubles plus one" and "counting back."

Grade 2

- Use mental math skills;
- Recognize which operations and skills are needed to solve a problem;
- Make estimates.

Grade 3

- Have varied daily opportunities for problem solving;
- Independently develop and choose appropriate problem solving techniques;
- Focusing on the "action" in the problem in order to choose correct mathematical operations;
- Determine the reasonableness of results.

Grade 4

- Organize data;
- Create and solve student-generated problems.

Grade 5

- Organize data in a logical manner;
- Select and utilize correct techniques.

2. Students will understand and apply the four fundamental operations in developmentally appropriate ways.

Students will

Kindergarten

- Match objects one-to-one;
- Identify numerals 0-20;
- Manipulate objects and form number stories.

Grade 1

- Add sums up to 18;
- Subtract from sums up to 18.

Grade 2

- Use the partial sums and trade first algorithm;
- Add and subtract 1, 2 and 3-digit numbers with and without trading;
- Compare numbers (whole and fractions) using $>$, $<$, or $=$.

Grade 3

- Practice the concepts and language of the four operations;
- Learn basic fact strategies and work toward immediate recall;
- Complete computation to the appropriate level for each operation;
- Add 4-digits with and without regrouping;
- Multiply 2-digits by 1-digit;
- Divide with remainders;
- Solve word problems by looking for the action words;



- Estimate using rounding and other appropriate strategies;
 - Use mental math strategies.
- Grade 4
- Add and subtract whole numbers;
 - Multiply and divide whole numbers;
 - Multiply by one and two digit factors;
 - Divide by one digit factors;
 - Become familiar with fractions.
- Grade 5
- Add, subtract, multiply and divide whole numbers with accuracy;
 - Add, subtract, multiply and divide decimals;
 - Add, subtract, multiply and divide fractions.

3. Students will utilize and interpret graphing techniques.

Students will

Kindergarten

- Recognize a graph;
- Interpret and give information about a simple graph.

Grade 1

- Make and interpret real, picture and bar graphs of every day objects and events.
- Answer questions, make predictions, and analyze data.

Grade 2

- Read and use data from and for graphs, not only in math, but also in science, social studies, and in other areas of the curriculum.

Grade 3

- Interpret a variety of graphs from real life events;
- Collect, analyze and represent data with appropriate graphs.

Grade 4

- Make and read a bar graph, pictograph and line graph;
- Read and interpret data from a chart.

Grade 5

- Read and interpret graphing data;
- Make inferences from data;
- Collect information and record it on a graph;
- Make and verify realistic predictions.

4. Students will understand basic geometric concepts.

Students will

Kindergarten

- Identify a circle in a mixed group;
- Identify a square in a mixed group;
- Identify a triangle in a mixed group;
- Identify a rectangle in a mixed group.

Grade 1

- Recognize and name plane and solid shapes (i.e., square and cube, circle and sphere, triangle and cone, rectangle and box cylinder).
- Construct and compare plane and solid shapes.

Grade 2



- Solve problems using perimeter and area.
 - Identify and classify all simple geometric shapes.
 - Identify symmetrical shapes and figures.
- Grade 3
- Recognize, identify, analyze and find real world applications for three dimensional shapes;
 - Explore two dimensional shapes (polygons), angles, lines, line segments;
 - Understand relationships among polygons;
 - Explore symmetry;
 - Identify congruent shapes.
- Grade 4
- Become familiar with spheres, cylinders, cones, pyramids and prisms;
 - Recognize polygons, angles, parallel and perpendicular lines.
- Grade 5
- Identify plane and space figures

5. Students will demonstrate knowledge of various types of measurement.

Students will

Kindergarten

- Measure non-standard objects such as blocks, hands, paper clips, links, etc.

Grade 1

- Measure time on the hour and half hour;
- Measure length in inches and centimeters;
- Measure capacity of cups, pints and quarts;
- Identify fractions of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{3}{4}$;
- Read and interpret temperatures and thermometers.

Grade 2

- Identify and count coins to one dollar;
- Tell and write time to five minute intervals;
- Read and use a calendar;
- Estimate and measure length and weight using non-standard and standard units;
- Identify and write fractions to $\frac{1}{3}$, $\frac{1}{2}$, and $\frac{1}{4}$.
- Read temperature to the nearest degree.

Grade 3

- Measure length, capacity and weight with non-standard and standard units using both customary and metric systems;
- Develop concepts of area and measure with square units;
- Develop concepts of perimeter and measure perimeter of simple shapes;
- Read and represent time to the minute (analogue and digital);
- Count money and apply money concepts.

Grade 4

- Recognize such terms as inch, foot, yard, mm, cm, m;
- Estimate and measure capacity, weight, perimeter and length;
- Review time and money skills.

Grade 5

- Express measurement of distance, weight and capacity in customary and metric units;
- Choose and utilize appropriate tools (ruler, compass and string) for different types of measurement;
- Use time and money concepts in real life.



6. Students will demonstrate an understanding of number sense and numeration.

Students will

Kindergarten

- Match objects one-to-one;
- Identify numerals 0-20.

Grade 1

- Count and write to 100 by 1's, 5's, 10's;
- Compare numbers;
- Determine what number comes before, after, between;
- Identify numbers to 100 as groups of tens and ones;
- Recognize and build patterns with manipulatives and numbers;
- Begin to estimate and check;
- Apply counting patterns to count coins to 99 cents;
- Predict and interpret probability;
- List probable outcomes of 1-stage experiments (e.g., flipping a coin or rolling a die).

Grade 2

- Identify and implement correct strategies to solve a problem

Grade 3

- Model numbers to four digits with manipulatives and/or pictures;
- Read and write numbers to the hundred-thousands place;
- Identify place value of digits in six-digit numbers;
- Compare and order numbers to the hundred thousands place;
- Round numbers to the nearest ten, hundred or dollar;
- Give many names for the same number;
- Skip count patterns (2's, 5's, 10's, 100's, 3's, 4's);
- Develop concepts of even and odd numbers;
- Develop concepts of ordinal numbers.

Grade 4

- Recognize the relationship of ones, tens, hundreds, thousands and millions;
- Put numbers in order from $>$ $<$ and $<$ $>$.

Grade 5

- Understand, read and write place value through a million in whole numbers;
- Understand, read and write place value through hundredths in decimals;
- Compare and order whole numbers, fractions and decimals;
- Round whole numbers;
- Use estimation skills.