

Alpine Academy of Rockford
Mathematics Mastery Learning Skills

Teachers at each grade level will review the skills from the prior grade level and check to see that the student has retained the mastered skills. Teachers each year are expected to build upon previously mastered skills.

Preschool 3-Year Olds

1. Count objects to 5 with 90% accuracy.
2. Match objects by using one-to-one correspondence with 90% accuracy.
3. Classify objects by common attribute (such as color or shape) with 90% accuracy.
4. Recognize and identify shapes (circle, triangle, square) with 100% accuracy.
5. Count to 10 with 100% accuracy.

Retention methods:

1. Repetition
2. Parent guide

Preschool 4-Year Olds

Curriculum from 3-year old is essential skills to have at 90% accuracy.

1. Demonstrate terms of comparison (big/little, long/short, empty/full, heavy/light) with 90% accuracy.
2. Understand the concept of more, less, same with 90% accuracy.
3. Recognize numerals in their environment with 90% accuracy.
4. Sequence objects by size with 90% accuracy.

Kindergarten

Preschool curricula are essential at 90% accuracy.

Other essential skills include:

1. Recognize and write whole numbers from 0 – 30, at 90% accuracy.
2. Count up and back with numbers 1 – 12, at 90% accuracy.
3. Count to 100 at 75% accuracy.
4. Skip count by fives and tens to 100 at 75% accuracy.

Other priority skills include:

1. Determine time on the hour and half hour on both face and digital clock at 75% accuracy.
2. Recognize and exchange pennies, nickels, and dimes equivalently at 75% accuracy.
3. Solve simple verbal problems using concrete materials at 90% accuracy.
4. Combine sets up to the sum of 5 and record addition actions with 90% accuracy.

5. Separate sets and record subtraction actions with 90% accuracy.

First Grade

Essential skills include those skills from the previous grades and:

1. Identify and write numbers to 100 at 90% accuracy.
2. Basic addition facts with sums to 18 at 90% accuracy.
3. Understand addition and subtraction operation at 100% accuracy.
4. Relate subtraction facts to the corresponding addition fact at 90% accuracy.
5. Know the difference for a basic subtraction fact to 18 at 90% accuracy.
6. Count by 2's, 5's, and 10's to 100 at 100% accuracy.

Skills that need to be learned at 80% accuracy:

1. Know the sum or difference of two 2-digit numbers without regrouping.
2. Recognize and know the value of a penny, nickel, dime and quarter.
3. Tell time to the hour or half hour on a face and digital clock.
4. Choose the correct operation (addition or subtraction) to use when solving a verbal problem.
5. Count back from any number from 50 or less.

Second Grade

Essential skills include those from previous grades and:

1. Memorize addition and subtraction facts 1 – 12 at 90% accuracy.
2. Count by 3's and 4's at 90% accuracy.
3. Solving story problems at 80% accuracy.
4. Relate subtraction with addition check at 90% accuracy.
5. Use mental math to do addition and subtraction at 80% accuracy.
6. Know place values, to the thousands at 100% accuracy.
7. Addition of two digit numbers at 90% accuracy.
8. Able to tell time at hour, half hour, quarter hour, and five minute intervals at 90% accuracy.
9. Learn trading of 1 ten for 10 ones at 90% accuracy.
10. Subtraction of 2-digit numbers at 90% accuracy.

Skills that need to be learned at 80% accuracy:

1. Know the pattern of odd and even numbers.
2. Know comparisons (greater than, less than, equal).
3. Adding and subtracting of money.
4. Estimating of numbers to the hundred place.
5. Know measurements of length, weight, and capacity.

Third Grade

Essential skills are those from previous grades, and:

1. Compute addition problems up to 4-digit addends with trading at 90% accuracy.
2. Read, write, and identify places in 2- to 6-digit numbers at 90% accuracy.
3. Use ordinal numbers to describe positions of ordered items at 90% accuracy.
4. Round to the nearest ten, hundred, or dollar at 90% accuracy
5. Tell time to the minute and use AM or PM at 90% accuracy.
6. Count money and count to make change at 80% accuracy.
7. Subtract 4-digit numbers with trading at 90% accuracy.

Skills that need to be learned at 80% accuracy:

1. Read and make graphs (bar and picture) and draw conclusions from data.
2. Know multiplication facts 0 – 10.
3. Estimate, measure, and compare units of measure (length, volume, weight).
4. Know basic units of geometry; symmetry, congruency, and six basic shapes.

Fourth Grade

Essential skills include those from previous grades and:

1. Identification, reading and writing any number to the 100 million place, and know the value of each digit at 90% accuracy.
2. Round any whole number to any place value to the hundred thousand place at 90% accuracy.
3. Add and subtract fractions with like denominators at 90% accuracy.
4. Know method for finding mean, median, and mode at 80% accuracy.
5. Know basic units of geometry (polygons, segments, points, angles, symmetry, congruent, coordinates, etc.).

Skills that need to be learned at 80% accuracy:

1. Reduction of fractions to the lowest terms.
2. Relation of improper fraction to its equivalent mixed numeral.
3. Solution of problems using metric or customary units of measure.
4. Calculate the area of a square or rectangle.
5. Find the product or quotient for any basic multiplication or division fact for instant recall.
6. Know basic units of geometry (polygons, segments, points, angles, symmetry, congruent, coordinates, etc.)

Fifth Grade

Essential skills include those from previous grades and:

1. Read, write, and round whole numbers to the billions at 85% accuracy.
2. Multiply by two and three digit factors at 90% accuracy.
3. Show relationship between multiplication and division at 90% accuracy.

4. Divide four digit numbers by one- and two-digit factors at 85% accuracy.
5. Divide by multiples of ten at 90% accuracy
6. Identify factors, primes, and composite numbers at 90% accuracy.
7. Collect, organize, and describe data at 85% accuracy.
8. Identify and name geometric figures and types of lines at 90% accuracy.
9. Identify and measure different angles at 85% accuracy.
10. Add, subtract, multiply, and divide decimals at 85% accuracy.
11. Compare, order, and round decimals at 90% accuracy
12. Compare fractions and decimals at 85% accuracy.
13. Add and subtract fractions and mixed numbers at 90% accuracy.
14. Multiply fractions at 90% accuracy.
15. Locate and graph ordered pairs at 85% accuracy.
16. Use a protractor and a compass at 90% accuracy.
17. Familiarity with calculator use at 90% accuracy.

Skills that need to be learned at 80% accuracy:

1. Use of multiplication patterns and properties.
2. Finding alternate solutions to solve problems, including drawings.
3. Relate basic fractions, decimals, and percents.

Sixth Grade

Essential skills include those of previous years and:

1. Perform all operations with fractions, mixed numbers, decimals, and whole numbers at 90% accuracy.
2. Recognize prime and composite numbers at 90% accuracy.
3. Use of prime factorization at 90% accuracy.
4. Use metric and customary units of measure at 85% accuracy.
5. Conversion of decimals to fractions and percentages at 90% accuracy.
6. Find a percent of a whole number at 90% accuracy.
7. Rounding of decimals and fractions at 90% accuracy.
8. Write and solve simple equations at 90% accuracy.
9. Order and add integers at 90% accuracy.
10. Solve simple algebraic equations at 85% accuracy.

Skills that need to be learned at 80% accuracy:

1. Order fractions, mixed numerals, and decimals.
2. Identify and classify polygons, geometric solids and angles, lines, segments, rays, and use geometric symbols.
3. Perform simple ratio, probability and statistics.
4. Perform expanded and exponential notation for whole numbers.