

## Third Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- count, read, write, show quantities to 100.
- identify a missing number in a sequence, counting 1s up to 100.
- add single digit whole numbers.
- choose an addition number sentence to represent the picture.
- answer simple questions from data represented by pictographs.
- locate the numbers on an analog clock.
- count pennies or dimes up to \$1.
- select the appropriate tool to measure time on a clock and calendar.
- select an equal sign to complete simple number sentences.
- read, write, and order numbers through the hundreds.

### **Partially Proficient Students**

- count, read, write, show quantities, and order numbers to 100.
- identify missing numbers in a sequence by skip counting 10s up to 100.
- add and subtract single digit whole numbers.
- identify shapes divided into equal parts.
- choose an addition or subtraction number sentence to represent the picture.
- recognize two-dimensional shapes.
- answer simple questions from data represented by tally marks.
- tell time on digital and analog clocks to the nearest hour.
- count pennies, nickels, or dimes up to \$1.
- select the appropriate tool to measure time and temperature.
- select + and = symbols to complete simple number sentences.
- Read, write, order, compare, and identify place value of numbers through the hundreds.

## Third Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- read, write, show quantities, order of numbers to 100, and identify 1s and 10s place value.
- identify missing numbers in a sequence by skip counting 5s and 10s up to 100.
- add two-digit whole numbers between 0 and 100 without regrouping.
- identify fractions represented in visual models.
- select an operation to solve problems involving addition.
- recognize two -dimensional shapes in their environment.
- answer simple questions from data represented by bar graphs.
- tell time on digital and analog clocks to the nearest hour and half-hour.
- count mixed pennies, nickels, and dimes up to \$1.
- select the appropriate tool to measure time, weight, and temperature.
- select +, -, and = symbols to complete simple number sentences.
- read, write, order, compare, and identify place value of numbers through the thousands.

### **Advanced Proficient Students**

- read, write, show quantities, order, and compare numbers to 1000, and identify place value through the hundreds place.
- identify missing numbers in a sequence by skip counting 2s up to 100.
- add and subtract two-digit whole numbers between 0 and 100 without regrouping.
- identify a fraction that represents part of a set.
- select an operation to solve problems involving addition and subtraction.
- identify two and three-dimensional shapes.
- answer simple questions from data represented by tables.
- tell time on digital and analog clocks to five minute intervals.
- count mixed coins pennies, nickels, dimes, and quarters up to \$1.
- select the appropriate tool to measure time, weight, length, and temperature.
- select +, -, =, <, and > symbols to complete simple number sentences.
- read, write, order, compare, and identify place value of numbers through the ten-thousands.

## Fourth Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- read, write, and order numbers through the hundreds.
- identify odd or even single-digit numbers.
- add and subtract two-digit whole numbers without regrouping.
- multiply two single-digit numbers with multipliers of 0-5.
- identify shapes divided into equal parts.
- identify two-dimensional shapes.
- identify shapes that are similar.
- interpret simple bar graphs.
- tell time on digital and analog clocks to the nearest hour.
- identify coins and their values.
- select the appropriate tool to measure length, weight, and temperature.
- determine missing elements of a simple object pattern.

### **Partially Proficient Students**

- read, write, order, compare, and identify place value of numbers through the hundreds.
- identify odd or even two-digit numbers.
- round whole numbers to nearest tens.
- add and subtract two-digit whole numbers.
- multiply two single-digit numbers.
- identify fractions represented in visual models.
- estimate sums
- identify two and three -dimensional shapes.
- identify transformed congruent shapes through translation.
- interpret simple bar and circle graphs.
- tell time on digital and analog clocks to the nearest half hour.
- count like- coins up to \$1.
- select and use the appropriate tool to measure length and temperature.
- determine missing elements of a simple number pattern.

## Fourth Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- read, write, order, compare, and identify place value of numbers through the thousands.
- identify odd or even three-digit numbers.
- round whole numbers to the nearest tens and hundreds.
- add and subtract three-digit whole numbers.
- multiply two-digit numbers by a single-digit number.
- identify the fraction which represents the part of the set of objects.
- identify the number of sides, vertices, and angles of two-dimensional shapes.
- identify the location of a given ordered pair on a grid.
- identify congruent shapes and shapes with a single line of symmetry.
- interpret simple bar, line and circle graphs.
- identify the possible outcomes of a simple event.
- tell time on digital and analog clocks to the nearest five minutes.
- count mixed coins up to \$1.
- select and use the appropriate tool to measure length, weight, and temperature.
- use patterns to solve problems with missing elements.

### **Advanced Proficient Students**

- read, write, order, compare, and identify place value of numbers through the ten thousands.
- identify odd or even four-digit numbers.
- round whole numbers to tens, hundreds, and thousands.
- add and subtract four-digit whole numbers.
- multiply three-digit numbers by a single-digit number.
- add simple fractions with like denominators with sums less than 1.
- compare physical attributes of two-dimensional shapes and identify right angles, points, rays, line segments, and lines.
- use the ordered pair to identify the location of points on a grid.
- identify congruent shapes and shapes with lines of symmetry.
- interpret and solve problems based on data in simple bar, line and circle graphs.
- determine the most likely outcome of a simple event.
- tell time to the nearest minute and determine elapsed time by the hour.
- count mixed coins and bills up to \$10.
- select and use the appropriate tool to measure length, weight, capacity, and temperature.
- determine missing elements of a pattern of multiples.

## Fifth Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- order and compare fractions with like denominators when given a visual model and whole numbers to 100.
- add and subtract whole numbers to 100 and add fractions with like denominators when given a visual model.
- multiply a one-digit number by a one-digit number.
- divide a two-digit number by a one-digit number without remainders.
- identify the number of sides and vertices in a two-dimensional figure.
- identify parallel lines.
- identify two-dimensional figures that are similar and congruent.
- identify different parts of the graph; e.g. title, label, scale, data.
- identify the possible outcomes of a simple event.
- identify the least and greatest value of a set of data.
- estimate and measure to the nearest inch, and tell time to the nearest quarter hour.
- select appropriate units of measure.
- count mixed coins and bills.
- recognize a simple pattern.
- identify a number sentence to solve a word problem.

### **Partially Proficient Students**

- round, order and compare fractions with like denominators and whole numbers to 1,000.
- add and subtract whole numbers to 1,000 and fractions with like denominators.
- multiply a two-digit number by a one-digit number.
- divide a three-digit number by a one-digit number without remainders.
- identify the number of sides, vertices, and angles in a two-dimensional figure.
- identify parallel and intersecting lines.
- identify the changes in position of congruent and two-dimensional figures after slide transformations.
- interpret data from a circle graph.
- identify the most likely outcome of a simple event.
- identify the mode of a set of data.
- estimate and measure to the nearest inch and tell time to the nearest five minutes.
- convert time.
- make change up to \$1.
- complete a simple pattern.
- solve addition and subtraction equations with variables.

## Fifth Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- round, order and compare fractions with like denominators, decimals to tenths place, and whole numbers to 10,000.
- add and subtract whole numbers to 10,000, fractions with like denominators, and decimals to tenths place.
- multiply a multi-digit number by a one-digit number.
- divide a three-digit by a one-digit number with or without remainders.
- identify the number of sides, vertices, and right angles in a two-dimensional figure.
- identify parallel, perpendicular, and intersecting lines.
- identify the changes in position of congruent and similar two-dimensional figures after slide and turn transformations
- interpret data from a line graph and a circle graph.
- determine the probability of a simple event.
- calculate the mode and range of a set of data.
- estimate and measure to a  $\frac{1}{2}$  inch, and elapsed time on a clock by the hour.
- convert time and length.
- make change up to \$5.
- complete a simple pattern by determining the missing element.
- solve addition, subtraction, multiplication, and division equations with variables.

### **Advanced Proficient Students**

- round, order and compare fractions and mixed numbers with like denominators, decimals to hundredths place, and whole numbers to 100,000.
- add and subtract whole numbers to 100,000, fractions and mixed numbers with like denominators, and decimals to hundredths place.
- multiply a multi-digit number by a two-digit number.
- divide a multi-digit number by a one-digit number with or without remainders.
- identify two- and three-dimensional objects by their attributes.
- identify parallel, perpendicular, intersecting, and line segments.
- identify the changes in position of congruent and similar two-dimensional figures after flips (reflections), slides (translations), and turns (rotations).
- identify and interpret data from a line graph, circle graph, and coordinate graph.
- determine the probability of a simple event.
- calculate the mode, mean, and range of a set of data.
- estimate and measure to a  $\frac{1}{4}$  inch; elapsed time on a clock by the half hour, schedules and calendars.
- identify the relationships between perimeter and area; convert time, length, and capacity.
- make change up to \$10.

**Fifth Grade NDAA2 Mathematics**  
**Performance Level Descriptors**

**Advanced Proficient Students**

- complete a complex pattern by determining the missing element.
- solve a problem involving variables and parentheses.

## Sixth Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- order and compare whole numbers to 1,000 and fractions with like denominators.
- add and subtract whole numbers to 100 and fractions with like denominators.
- multiply a one-digit number by a one-digit number.
- divide by a one-digit number without remainders.
- use order of operations to solve numeric expressions using addition and subtraction.
- identify repeated multiplication.
- identify diagonals, parallel and perpendicular lines in a two-dimensional figure.
- identify the x- and y-axis of a coordinate grid.
- interpret data from a pictograph and frequency table.
- identify the possible outcomes of a simple event.
- identify the least and greatest value of a set of data.
- estimate and measure length using benchmark angle  $90^\circ$ , to the nearest inch, and elapsed time on a clock.
- calculate the perimeter of squares given a formula and all side lengths.
- identify a rule for a simple pattern.

### **Partially Proficient Students**

- order and compare percents, fractions with like denominators, decimals to tenths place, and whole numbers to 10,000.
- add and subtract whole numbers to 1,000, fractions with like denominators, and decimals to tenths place.
- multiply by a two-digit number by a one digit number.
- divide by a one-digit number with and without remainders.
- use order of operations to solve numeric expressions using addition or subtraction with multiplication.
- identify exponential notation.
- identify diagonals, parallel and perpendicular lines, line segments, and rays in a two-dimensional figure.
- identify a point given an ordered pair in quadrant 1 of a coordinate grid.
- interpret data from a pictograph, bar and line graph.
- identify the most likely outcome of a simple event.
- identify the mode of a set of data.
- estimate and measure length using benchmark angle  $45^\circ$  and  $90^\circ$ , to a  $\frac{1}{2}$  inch, and elapsed time on a calendar.
- calculate the perimeter and area of squares and rectangles given a formula and all side lengths.
- identify a rule for a pattern involving addition.

## Sixth Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- round, order and compare percents, fractions with like denominators, decimals to hundredths place, and whole numbers to 100,000.
- add and subtract whole numbers to 100,000, fractions with like denominators, and decimals to hundredths place.
- multiply a multi-digit number by a two-digit number.
- divide by a two-digit number without remainders.
- use order of operations to solve numeric expressions using addition and subtraction with multiplication.
- represent exponential notation as repeated multiplication
- identify diagonals, parallel and perpendicular lines, line segments, rays, diameter and radius, obtuse and acute angles in a two-dimensional figure.
- identify the ordered pair of a point in quadrant 1 of a coordinate grid.
- interpret data from a pictograph, bar, line, and circle graph.
- determine the probability of a simple event.
- calculate the mode and range of a set of data.
- estimate and measure length using benchmark angle  $45^\circ$ ,  $90^\circ$ , and  $180^\circ$ , to a  $\frac{1}{4}$  inch, and elapsed time on a calendar and schedule.
- calculate the perimeter and area of squares and rectangles given formulas and two side lengths.
- identify a rule for a pattern involving addition and subtraction.

### **Advanced Proficient Students**

- order and compare percents, fractions with like and unlike denominators, decimals to thousandths place, and whole numbers to 1,000,000.
- add and subtract whole numbers to 100,000, fractions with like and unlike denominators, and decimals to thousandths place.
- multiply a multi-digit number by a multi-digit number.
- divide by a two-digit number with and without remainders.
- use order of operations to solve numeric expressions using addition and subtraction with multiplication and division.
- convert between exponential notation and repeated multiplication
- identify diagonals, parallel and perpendicular lines, line segments, rays, planes, diameter, radius, chord, obtuse and acute angles in a two-dimensional figure.
- plot ordered pairs in quadrant 1 of a coordinate grid.
- interpret data from a pictograph, bar, line, and circle graph.
- express as a ratio the probability of a simple event.
- calculate the mode, mean, and range of a set of data.
- estimate and measure length using benchmark angle  $45^\circ$ ,  $90^\circ$ ,  $180^\circ$ ,  $270^\circ$ , and  $360^\circ$ , to  $\frac{1}{8}$  inch, and elapsed time between time zones and on a calendar and schedule.
- calculate the perimeter and area of squares and rectangles and the volume of rectangular prisms given a formula.
- identify a rule for a pattern involving addition, subtraction, and multiplication.

## Seventh Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- identify equivalent forms of fractions.
- represent parts of a whole as a fraction.
- recognize divisibility of a number.
- simplify a numeric expression using addition and subtraction.
- add and subtract fractions with like denominators without renaming.
- recognize a shape as a polygon.
- use ordered pairs to locate a point in quadrant one on a coordinate plane.
- find the mode of a set of data.
- determine which outcome of an event is most likely.
- retrieve data from a graph or table.
- differentiate units of weight, length and capacity.
- use formula to find perimeter of rectangles
- identify the variable in a number sentence.
- recognize a pattern.

### **Partially Proficient Students**

- identify equivalent forms of fractions and decimals.
- represent parts of a whole as a fraction and decimal
- find factors of a number.
- simplify a numeric expression using addition or subtraction with multiplication.
- add and subtract fractions with like denominators.
- identify polygons up to five sides.
- use a point in quadrant one of a coordinate plane to give the ordered pair.
- calculate the range and find the mode of a set of data.
- list possible outcomes of an event.
- select the most appropriate means for displaying data given a set of data.
- relate inches to feet, cups to pints, and ounces to pounds.
- use formula to find perimeter and area of rectangles.
- use a variable to represent the unknown.
- complete a pattern.

## Seventh Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- identify equivalent forms of fractions and decimals; compare and order values of fractions and decimals.
- represent parts of a whole as a fraction, decimal and percent.
- find factors and multiples of numbers.
- simplify a numeric expression using addition, subtraction, multiplication and division.
- add and subtract fractions with like denominators and multiply fractions.
- identify polygons up to eight sides.
- plot points on an x- or y- axis.
- calculate the mean and median and find the mode of a set of data.
- determine probability of an event.
- represent data using a table or graph.
- select appropriate unit of measure.
- use formulas to find perimeter and area of triangles and rectangles .
- use a variable to solve numerical sentences.
- identify a pattern represented by tables, graphs and sequences.

### **Advanced Proficient Students**

- identify equivalent forms of fractions and decimals; compare and order values of fractions, decimals, mixed numbers and integers.
- represent parts of a whole as a fraction, decimal, percent, and expresses it as a ratio.
- generate a list of factors, prime factors, and multiples.
- simplify a numeric expression using addition, subtraction, multiplication, division, parentheses and exponents.
- add and subtract fractions with like denominators; multiply and divide fractions.
- identify polygons up to eight sides and classify triangles and quadrilaterals.
- use ordered pairs to locate a point on a coordinate plane.
- calculate the mean, median, mode, and range of a set of data.
- use decimals and ratios to represent probability.
- use data from a table or graph to make predictions.
- convert measurements within the same system.
- use formulas to find perimeter and area of triangles, rectangles, parallelograms, and circumference of a circle.
- use variable expressions to represent a problem.
- identify the rules for a pattern represented by tables, graphs and sequences.

## Eighth Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- represent a ratio in a given situation.
- list factors of a given number up to two digits.
- list the sequence of steps for order of operations.
- add positive decimals to the hundredths.
- use integers to represent quantities.
- label angles, points, and sides of a triangle.
- identify positive and negative points on vertical and horizontal number lines.
- interpret basic information from a simple table or graph.
- list all possible outcomes of a single event.
- find the mode for a set of data.
- define perimeter and area.
- choose the appropriate unit of measurement to solve a problem.
- recognize inverse operations.
- distinguish between the commutative and associative properties.

### **Partially Proficient Students**

- determine whether given ratios are equal.
- list factors and multiples of a given number up to two digits.
- recognize the correct order of operations in a given problem.
- add and subtract positive decimals and fractions with like denominators.
- use integers to compare quantities.
- classify an angle as right, obtuse or acute.
- label the coordinates, quadrants, origin, x- and y- axes of the coordinate plane.
- select the graph that best represents the given data.
- determine the most likely outcome of an event.
- calculate mean, median, mode and range with whole numbers.
- determine the perimeter and area of regular shapes.
- convert measurements within the standard system.
- solve one-step equations with whole numbers.
- distinguish between the commutative, associative and distributive properties.

## Eighth Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- solve a given proportion.
- find the greatest common factor (GCF) and least common multiple (LCM) of a given number up to two digits.
- solve a problem using the order of operations without grouping symbols and exponents.
- add and subtract positive decimals and fractions with like and unlike denominators.
- multiply and divide integers.
- classify triangles by side (scalene, isosceles and equilateral) or angle (acute, obtuse and right) measurements.
- use coordinates to label a point on a coordinate plane.
- interpret information from graphs and tables.
- compute probabilities for simple events.
- calculate mean, median, mode and range with integers.
- determine the perimeter and area of regular and irregular objects.
- convert measurements within the standard and metric system.
- solve one-step equations with integers.
- apply commutative, associative and distributive properties to numerical expressions.

### **Advanced Proficient Students**

- create and solve a proportion in a real world problem.
- use the greatest common factor (GCF) and least common multiple (LCM) to solve problems.
- solve a problem using the order of operations, including grouping symbols and exponents.
- add, subtract, multiply and divide positive decimals and fractions with like and unlike denominators.
- add, subtract, multiply and divide integers.
- identify relationships between congruent and similar figures.
- identify the result of a translation, reflection, and rotation on a coordinate plane.
- solve multi-step problems using graphs and tables.
- draw conclusions from the results of a probability experiment.
- choose the most appropriate measurement (mean, median, mode and range) representing a set of data.
- determine the perimeter and area of regular and irregular objects, and the surface area and volume of right cylinders.
- convert measurements between standard and metric systems.
- solve one-step equations and inequalities with integers.
- apply commutative, associative and distributive properties to algebraic expressions.

## 11th Grade NDAA2 Mathematics Performance Level Descriptors

### **Novice Students**

- select appropriate units and scales for problem situations involving measurement.
- simplify an expression using the commutative and associative properties of the real number system.
- identify rows and columns in a matrix.
- classify numbers as whole or natural.
- recognize the Pythagorean Theorem.
- graph an ordered pair.
- find the symmetrical point in relation to the x- and y- axes.
- identify circle graphs, bar graphs, and histograms.
- compute theoretical probability with replacement.
- calculate mean, median, mode and range with single digit whole numbers.
- distinguish between volume and surface area.
- simplify equations using properties of real numbers.
- determine if a rate of change is positive or negative.
- identify a linear or quadratic function given a graph.

### **Partially Proficient Students**

- convert between standard and metric measurements given a conversion factor.
- simplify an expression using the commutative, associative, and distributive properties of the real number system.
- provide missing elements in a partially completed matrix.
- classify numbers as integers, whole, or natural.
- distinguish between the legs and hypotenuse of a right triangle.
- calculates the slope of a line, given two points.
- find the rotational symmetry of a point in relation to the origin.
- identify circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.
- compute theoretical probabilities with or without replacement.
- calculate mean, median, mode and range with integers.
- compute the surface area of a right prism or right cylinder net.
- graphically represent the solution or solutions to an equation or inequality.
- interpret rates of change from graphical data.
- determine if a given equation is a linear or quadratic function.

## 11th Grade NDAA2 Mathematics Performance Level Descriptors

### **Proficient Students**

- use approximations to compare the standard and metric systems of measurement.
- simplify real number expressions using the order of operations and properties with grouping symbols and exponents.
- add, subtract, or scalar multiply matrices.
- classify numbers as real, rational, irrational, integers, whole and natural
- use Pythagorean Theorem to determine side lengths in a right triangle.
- calculate midpoint and slope, given two points.
- identify the result of a translation, reflection and rotation on a coordinate plane.
- interpret a set of data given circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.
- calculate probabilities of compound events using addition or multiplication.
- calculate mean, median, mode and range with real numbers.
- compute the surface area and volume of a right prism and a right cylinder given a formula list.
- solve linear equations or inequalities with real number solutions.
- interpret rates of change from numerical data.
- label the vertex and x- and y-intercepts given a graph of a linear or quadratic function.

### **Advanced Proficient Students**

- describe the effects of scalar change on the area, surface area, and volume of a figure.
- simplify algebraic expressions using the power of products, power of a power, products and quotients of powers, zero, and negative exponents.
- add or subtract along with scalar multiplication on matrices.
- identify the relationships among real numbers, rational numbers, irrationals, integers, wholes and naturals within a Venn diagram.
- use Pythagorean Theorem to solve a real world problem.
- calculate distance, midpoint and slope, given two points.
- identify the result of a double transformation using translation, reflection and rotation on a coordinate plane.
- draw a conclusion from a set of data given circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.
- determine the appropriate counting technique from the fundamental counting principle, factorials, combinations, and permutations.
- calculate mean, median, mode, range, and quartiles with real numbers.
- compute the surface area and volume of a right prism, a right cylinder, right pyramid, right cone, and a sphere given a formula list.
- use unit analysis to complete a two-step conversion.
- solve systems of two linear equations or inequalities with real number solutions.
- apply rate of change to solve a real world problem.
- identify the independent variable, dependent variable, domain, and range of a

**11th Grade NDAA2 Mathematics**  
**Performance Level Descriptors**

**Advanced Proficient Students**

function.