# Level A

### Grade 3 Advanced
Third grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the length/width of an item with an affixed ruler with one inch markings up to five inches,
- identify an ABAB pattern,
- identify the denominator of a unit fraction that matches a representation (thirds),
- select an object representation that models an addition or subtraction problem with sums up to five, and
- identify equivalent fractions using a visual model.

### Grade 3 Proficient
Third grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- uses a number line to identify the nearest ten of a number up to 10,
- identify the solution for a one-step, real-world subtraction problem with numbers up to 5 and object support,
- count up to five pennies or dollar bills,
- identify a set of numbers up to five presented from smallest to largest with a visual model,
- identify an equation that matches a multiplication model with numbers up to 10, and
- identify the perimeter of a rectangle by counting up to 10 units.

### Grade 3 Novice
Third grade students performing at the **Novice** level are generally able to:
- identify the solution to a one-step, real-world addition problem with numbers up to five and object support,
- identify the denominator of a unit fraction that matches a representation (halves or fourths),
- identify similar polygons based on the number of sides,
- identify the area of a rectangle by counting up to five units,
- identify an object that extends and ABAB pattern, and
- select a set of pictures to be added to a pictograph based on stated information with numbers up to five.

### Grade 3 Emerging
Third grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- identify a measurement tool that is appropriate for a given context,
- identify time on an analog clock to the hour,
- identify similar polygons based on the number of sides, and

- identify a measurement tool that is appropriate for a given context.

## Grade 4 Advanced
Fourth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. They are generally able to:
- compare single-digit numbers up to 10 using $<, =, >$,
- select an object representation of a multiplication or division problem with numbers up to 10, and
- identify the set of objects that extends an additive (+2) pattern with quantities up to 10 given a rule.

## Grade 4 Proficient
Fourth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify the decimal that is equivalent to a fraction with a denominator up to 10 with a visual model,
- identify the solution to a one-step, real-world multiplication problem with numbers up to 10,
- identify the area of a combined rectangle by counting up to 10 units,
- identify the equation used to find the perimeter of a rectangle,
- identify sums of or differences between two whole numbers up to ten with object support, and
- compare representations of fractions with like denominators using $<, =, >$.

## Grade 4 Novice
Fourth grade students performing at the **Novice** level are generally able to:
- select a pictograph that shows data displayed in a table with numbers up to five,
- match shapes to a given shape by counting the number of sides,
- identify the solution to a one-step, real-world addition or subtraction problem with object support and numbers up to five, and
- identify an appropriate unit of measure for a given context with a visual model.

## Grade 4 Emerging
Fourth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- match shapes to a given shape by counting the number of sides, and
- identify the solution to a one-step, real-world addition problem with object support and numbers up to five.

## Grade 5 Advanced
Fifth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify a point in the first quadrant that matches an ordered pair, and
- use a conversion table to identify equivalent measures with numbers up to 10.

## Grade 5 Proficient
Fifth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify a set of pictures that extends a subtraction pattern (-2) with quantities up to 10,
- identify the sum or difference of two decimals with answers less than one and a visual model,
- identify the value of a digit with three-digit numbers and a visual model,
- identify the numerator in subtraction problems of fractions with like denominators (halves, thirds, or fourths) and visual support, and
- identify an ordered pair (*x, y*) that matches a point in the first quadrant.

## Grade 5 Novice
Fifth grade students performing at the **Novice** level are generally able to:
- interpret labels and quantities in graphs in order to identify a value missing from a table,
- identify a two-dimensional figure using number of sides,
- count to identify a product of 2 and a single-digit whole number with answers up to 10,
- identify the numerator of two fractions with like denominators (halves, thirds, fourths) with sums less than one provided a visual model,
- compare numbers to the ones place using <, =, >, and
- identify the volume of a cube assembled with unit cubes.

## Grade 5 Emerging
Fifth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- identify a two-dimensional figure using number of sides, and
- count to identify a product of 2 and a single-digit whole number with answers up to 10.

## Grade 6 Advanced
Sixth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the solution to a one-step, real-world addition/subtraction equation with a variable and whole numbers up to 10 and a visual model,
- identify the quotient of two single-digit whole numbers up to 10 with a visual model,
- locate the opposite of a given positive/negative number on a number line, and
- identify the median of five values presented on a number line.

## Grade 6 Proficient
Sixth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify data by making comparisons on a number line,
- identify the mode in data presented with a visual model,
- identify positive/negative integers that match a given situation with a visual model,
- identify products up to 10 of whole numbers with object support,
- identify the solution to a unit rate problem with a visual model, and
- identify a pictorial representation of a mathematical expression that matches a one-step subtraction problem with whole numbers.

## Grade 6 Novice
Sixth grade students performing at the **Novice** level are generally able to:
- locate a positive number on a number line,
- select a multiple of ten from a number chart,
- match three-dimensional shapes based on attributes (e.g., shape of base),
- identify a pictorial representation of a mathematical expression that matches a one-step addition problem with whole numbers,
- identify the sum of two one-digit numbers with a visual model,
- identify the volume of a rectangular prism by counting unit cube models, and
- identify an ordered pair (*x, y*) that matches a point in the first quadrant.

## Grade 6 Emerging
Sixth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- locate a positive number on a number line,
- select a multiple of ten from a number chart, and
- match three-dimensional shapes based on attributes (e.g., shape of base).

## Grade 7 Advanced
Seventh grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the equation that matches a one-step addition or subtraction problem with whole numbers and a visual model,
- identify the quotient of two positive, whole numbers up to 10 with a number line, and
- identify the difference between two positive numbers using a number line model.

## Grade 7 Proficient
Seventh grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify a line graph that matches a relationship presented in a table with visual support,
- interpret values of ordered pairs with a visual model,
- identify the difference (less than one) between two decimals to the tenths place with a visual model,
- compare the means of two data sets (numbers have same tens place value) presented in graphs using $<, =, >$,
- identify the sum (less than one) of two fractions (halves, thirds or fourths),
- identify the expression used to find the volume of a rectangular prism given three dimensions and a formula, and
- identify the expression used to find the area of a parallelogram given two dimensions and a formula.

## Grade 7 Novice
Seventh grade students performing at the **Novice** level are generally able to:
- identify three-dimensional figures with a given attribute,
- identify the product up to ten of two positive, whole numbers with a number line,
- identify sums less than one of two decimals to the tenths place,
- identify the probability of an event (certain/impossible or likely/unlikely),
- compare the range of two data sets using a pictograph, and
- use a given context to select a percentage (price reduction, tip, or tax).

## Grade 7 Emerging
Seventh grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- identify three-dimensional figures with a given attribute, and
- identify the product up to ten of two positive, whole numbers with a number line.

## Grade 8 Advanced
Eighth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the solution to a two-step, real-world addition or subtraction problem given an equation with one variable using a visual model, and
- identify decimals to the hundredths place that are equivalent to given fractions with a visual model.

## Grade 8 Proficient
Eighth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify the point of a non-terminating decimal on a number line,
- identify the expanded form of a squared or cubed number with a visual model,
- identify an equation that matches a two-step, real-world subtraction problem, and
- identify data by reading a two-way table.

## Grade 8 Novice
Eighth grade students performing at the **Novice** level are generally able to: They may be able to:
- identify the equation used to calculate the volume of a triangular prism given dimensions and a formula,
- identify the $y$-intercept of a line ($y = mx + b$) on a graph,
- identify the value of $y$ on a line graph with a visual model and teacher modeling,
- match congruent figures that have been rotated, reflected, or translated, and
- identify an equation that matches a two-step addition problem with whole numbers, and
- identify a line graph ($y = mx$) that matches data in a table.

## Grade 8 Emerging
Eighth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- match congruent figures that have been rotated, reflected, or translated, and
- identify an equation that matches a two-step addition problem with whole numbers.

## Grade 11 Advanced
Eleventh grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the decimal that is equivalent to a unit fraction in a real-world problem with a visual model.

## Grade 11 Proficient
Eleventh grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- compare two unit prices using $<$, $=$, $>$,
- identify a data set with the highest/lowest mean given a table,
- identify the value of $y$ on a line graph with a visual model,
- identify the sign (+/-) for an operation performed in an equation-solving algorithm,
- identify data by reading a two-way table, and
- identify the unconditional probability of an event.

## Grade 11 Novice
Eleventh grade students performing at the **Novice** level are generally able to:
- identify the value of an unknown dimension given the formula for area of a rectangle, one of the dimensions, and a visual model,
- identify a three-dimensional figure that matches a net,
- identify a missing coordinate given a linear equation ($x + b = y$), a table of ordered pairs, and teacher modeling,
- interpret the effect of changing one variable on another in a linear equation with a visual model, and
- identify the equation ($x + b = y$) that matches a scenario.

## Grade 11 Emerging
Eleventh grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level A PASA. They may be able to:
- identify a three-dimensional figure that matches a net, and
- identify a missing coordinate given a linear equation ($x + b = y$), a table of ordered pairs, and teacher modeling.

# Level B

## Grade 3 Advanced

Third grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:

- identify the number that extends an additive (+2) pattern with numbers up to 20,
- select the representation that models a subtraction problem with numbers up to 10,
- identify the unit fraction that matches a picture (with fourths or sixths),
- identify the appropriate measurement tool for a given context,
- identify equivalent fractions with a visual model, and
- identify the perimeter of a rectangle presented on a grid by counting up to 10 units.

## Grade 3 Proficient

Third grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:

- select the set of pictures to be added to a pictograph based on information presented in a table with numbers up to 10,
- identify the area of a rectangle by counting up to 10 units,
- count pennies/dollar bills in quantities up to 10,
- round to the nearest 10 between 10 and 20,
- identify the solution to a one-step, real-world subtraction problem with numbers up to 10 and a visual model, and
- select a representation that models a multiplication problem with products up to 20.

## Grade 3 Novice

Third grade students performing at the **Novice** level are generally able to:

- identify the length/width of an object aligned to a unit-ruler with numbers up to 10 with picture support,
- identify one similarity between two polygons with picture support,
- select the time shown on an analog clock to the hour with picture support,
- order three consecutive numbers up to five with picture support, and
- select the representation that models an addition problem with sums up to 10 with picture support.

## Grade 3 Emerging

Third grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:

- identify the solution to a one-step, real-world addition problem with numbers up to 10 and a visual model,
- select the time shown on an analog clock to the hour with picture support, and
- order three consecutive numbers up to five with picture support.

**Grade 4 Advanced**
Fourth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. They are generally able to:
- select the representation that matches a multiplication or division problem, and
- identify a decimal that is equivalent to a fraction (tenths).

**Grade 4 Proficient**
Fourth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify the differences between two whole numbers with numbers up to 20,
- identify the equation to find the area of a given rectangle when provided unit squares and a formula,
- identify the sum (up to 20) of two whole numbers,
- compare fractions with like denominators or multi-digit numbers up to 1,000 with a visual model using $<$, $>$, $=$,
- identify the number that extends an additive pattern ($+2$ or $+5$) with numbers up to 20,
- identify the perimeter of a rectangle when provided with side dimensions and a formula, and
- identify the solution to a two-step, real-world addition or subtraction problem with numbers up to 10 and a visual model.

**Grade 4 Novice**
Fourth grade students performing at the **Novice** level are generally able to:
- select the bar graph that corresponds to data in a table with numbers up to 10 with picture support,
- identify the appropriate unit of measurement in a given context with picture support,
- sort three shapes into groups based on the number of sides with picture support,
- identify the solution to a two-step, real-world addition or subtraction problem with picture support, and
- identify the solution to a one-step, real-world multiplication problem with picture support.

**Grade 4 Emerging**
Fourth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:
- sort three shapes into groups based on the number of sides with picture support,
- identify the solution to a two-step, real-world addition, subtraction, or multiplication problem with picture support.

## Grade 5 Advanced
Fifth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the number that extends a pattern (-2 or -5) involving subtraction, and
- identify a two-dimensional figure with given properties.

## Grade 5 Proficient
Fifth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- convert units up to 20 that are equivalent given a conversion table,
- identify the point in the first quadrant that matches a given ordered pair $(x, y)$,
- identify the place value of a digit in a three-digit number with a visual model, and
- compare decimals using $<, =, >$ to the tenths place.

## Grade 5 Novice
Fifth grade students performing at the **Novice** level are generally able to:
- identify the volume of a cube filled with unit cubes with picture support,
- identify the difference (up to 1.0) between two decimals with a visual model with picture support,
- identify the sum or difference (up to 1.0) with two fractions (halves, thirds, fourths, or eighths) with a visual model,
- identify the value missing from a table by interpreting the labels and $y$-axis values of a bar graph with picture support,
- identify the ordered pair $(x, y)$ that matches a point in the first quadrant with picture support,
- identify the sum (up to 1.0) of two decimals with a visual model with picture support, and
- identify the product (up to 20) of 2 or 5 and a single-digit whole number using an abstract model with picture support.

## Grade 5 Emerging
Fifth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:
- identify the value missing from a table by interpreting the labels and $y$-axis values of a bar graph with picture support, and
- identify the ordered pair $(x, y)$ that matches a point in the first quadrant with picture support.

## Grade 6 Advanced

Sixth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:

- identify the solution to a real-world problem presented as a one-step addition/subtraction equation with a variable and whole numbers ≤ 20 with picture support,
- identify the median in a table with five ordered values, and
- identify the quotient of two numbers with two-digit dividends (less than 100) and one-digit divisors when provided object support.

## Grade 6 Proficient

Sixth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:

- identify the mathematical expression that matches a one-step subtraction problem with whole numbers,
- identify the solution to a one-step, real-world addition or subtraction problem presented as an equation with a visual model,
- identify an ordered pair ($x$, $y$) in the first or second quadrant,
- identify the product (up to 100) of two whole numbers with a visual model,
- identify the ratio that represents a visual model,
- identify the volume of a rectangular prism by adding disassembled layers, and
- interpret a table to identify the solution to a unit rate problem.

## Grade 6 Novice

Sixth grade students performing at the **Novice** level are generally able to:

- locate a positive/negative integer when given context,
- sort three-dimensional figures into groups based on attributes,
- make comparisons on a line plot to identify data,
- identify multiples of 5, 10, 25, or 100 in problems involving money,
- identify the sum of two, two-digit numbers with a visual model,
- locate a given positive/negative integer, or its opposite, on a number line,
- identify the mode in a tally chart, and
- identify the mathematical expression that matches a one-step addition problem with whole numbers and a visual model.

## Grade 6 Emerging

Sixth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:

- make comparisons on a line plot to identify data,
- identify multiples of 5, 10, 25, or 100 in problems involving money, and
- identify the sum of two, two-digit numbers with a visual model.

## Grade 7 Advanced

Seventh grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:

- identify the difference between two negative numbers on a number line, and
- identify the quotient of two positive/negative whole numbers up to 10 on a number line.

## Grade 7 Proficient

Seventh grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:

- identify sums (up to 1) of fractions (halves, thirds, fourths, or eighths) with a visual model,
- identify 50% of a sum up to $100 in the context of a coupon,
- identify a line graph that matches a proportion presented in a table,
- identify a mathematical equation that matches a one-step subtraction problem with positive/negative whole numbers,
- identify the volume of a rectangular prism given three dimensions and a formula,
- identify the probability of an event (likely/unlikely) with a visual model,
- identify the difference between two decimals up to 10.0, and
- identify the product (up to 10) of two positive/negative whole numbers with a number line.

## Grade 7 Novice

Seventh grade students performing at the **Novice** level are generally able to:

- identify the meaning of a point on a graph given a specific context,
- identify the area of a parallelogram given two dimensions and a formula,
- identify an equation that matches a one-step addition problem with positive/negative whole numbers,
- identify the sum (up to 10) of two decimals to the tenths place,
- compare the means of two data sets presented in tables using $<, =, >$,
- identify a three-dimensional figure with a given attribute, and
- compare two data sets presented in bar graphs based on interpretation of the range of data conveyed.

## Grade 7 Emerging

Seventh grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:

- identify a three-dimensional figure with a given attribute,
- identify the sum (up to 10) of two decimals to the tenths place, and
- compare the means of two data sets presented in tables using $<, =, >$.

### Grade 8 Advanced
Eighth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- locate a non-terminating decimal on a number line, and
- identify a decimal that matches a fraction to the hundredths place with a visual model.

### Grade 8 Proficient
Eighth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify the solution to two-step, real-world addition or subtraction problems with a single variable equation and a visual model,
- identify the slope of a line presented in $y = mx$ form on a graph,
- identify the expanded form of a squared or cubed number in exponential form with a model provided in a table, and
- identify a graph of a line in $y = mx + b$ form.

### Grade 8 Novice
Eighth grade students performing at the **Novice** level are generally able to:
- match congruent figures that have been rotated, reflected, or translated, and
- identify data by reading a two-way table,
- identify an equation that matches a two-step addition or subtraction problem with whole numbers,
- identify the value of $y$ for a missing point on a line graph of an equation, and
- identify the equation used to calculate the volume of a square pyramid given dimensions and a formula.

### Grade 8 Emerging
Eighth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:
- match congruent figures that have been rotated, reflected, or translated, and
- identify data by reading a two-way table.

### Grade 11 Advanced
Eleventh grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- solve an equation by identifying a step that completes a sequence, and
- identify the data set with a mean score that is most/least distorted by an outlier value.

### Grade 11 Proficient
Eleventh grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify a decimal that is equivalent to a fraction in a real-world context,
- identify the equation in $mx = y$ form that matches a scenario,
- identify the effect of a change in one variable on another variable in a linear equation,
- identify the value of an unknown dimension in a rectangle given a formula for area and one dimension, and
- identify the missing coordinate in an ordered pair given a linear equation in $y = mx + b$ form and a table of ordered pairs.

### Grade 11 Novice
Eleventh grade students performing at the **Novice** level are generally able to:
- calculate and compare two unit prices using $<, =, >$,
- identify the unconditional probability of an event,
- identify a three-dimensional figure that matches a given net,
- identify the missing coordinate in an ordered pair given a linear equation in $y = mx + b$ form and a table of ordered pairs,
- identify the value of $y$ in a real-world problem given the value of $x$ and a linear equation, and
- identify data by reading a two-way table.

### Grade 11 Emerging
Eleventh grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level B PASA. They may be able to:
- identify a three-dimensional figure that matches a given net, and
- identify the missing coordinate in an ordered pair given a linear equation in $y = mx + b$ form and a table of ordered pairs.

## Pennsylvania PASA Mathematics Performance Level Descriptors (PLD)
# Level C

### Grade 3 Advanced
Third grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify fractions that match provided visual models (halves or sixths),
- measure the length or width of an object using a ruler with one-inch markings, and
- analyze similar polygons in terms of characteristics of lines, angles, sides, etc.

### Grade 3 Proficient
Third grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- select a model that represents a subtraction (numbers up to 10) or multiplication problem (products up to 50),
- place tabular data onto a graph with numbers up to 20,
- round two-digit numbers to the nearest ten,
- perform multiple addition activities with numbers up to 20 (including counting the number of pennies/dollars),
- add units of area with rectangles, and
- extend a +5 additive pattern with numbers up to 50.

### Grade 3 Novice
Third grade students performing at the **Novice** level are generally able to:
- interpret data from a table or a graph,
- read an analog clock to the half-hour,
- add rectangle sides to generate perimeters,
- sequence numbers up to 10 in order from smallest to largest,
- match mathematical expressions involving addition and subtraction with numbers up to 10 to visual models and real-world problems,
- identify +5 additive numerical patterns, and
- identify the appropriate measurement tool to use for specific applications.

### Grade 3 Emerging
Third grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:
- sequence numbers one through ten,
- use simple addition to solve one-step problems,
- understand a variety of numerical patterns, and
- identify appropriate measurement tools.

## Grade 4 Advanced
Fourth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. They are generally able to:
- work with fractions (with denominators up to 10),
- convert fractions to decimals,
- select the representation that models a division problem, and
- sort similar two-dimensional shapes based on their angles.

## Grade 4 Proficient
Fourth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify the area and perimeter of a rectangle when given dimensions and formula,
- select a model that represents a multiplication problem,
- select a graphic display (line plot or bar graph) that displays the data from a table, and
- extend +6 and +2 additive patterns.

## Grade 4 Novice
Fourth grade students performing at the **Novice** level are generally able to:
- compare multi-digit numbers and fractions (fourths and eighths) using <, >, =,
- solve two-step, real world addition, subtraction, and multiplication (with a visual model),
- solve problems with multi-digit numbers without visual models,
- identify the appropriate measurement unit for specific applications,
- solve subtraction problems involving numbers up to 1,000, and
- solve multi-step addition and subtraction expressions.

## Grade 4 Emerging
Fourth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:
- perform simple addition, subtraction, or multiplication (with a visual model) to solve one- or two-step real-world problems, and
- demonstrate a basic understanding of measurement units and applications.

## Grade 5 Advanced
Fifth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the point in a quadrant that matches a specific ordered pair,
- analyze and extend a mathematical pattern involving subtraction (not -2 or -5), and
- identify the volume of a three-dimensional figure when provided with unit cubes.

## Grade 5 Proficient
Fifth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- identify the ordered pair (x, y) that matches a point in a quadrant,
- complete addition and subtraction problems involving fractions with like denominators (halves, thirds, fourths, or eighths), and
- identify two-dimensional geometric figures with given properties (i.e., characteristics of sides and angles).

## Grade 5 Novice
Fifth grade students performing at the **Novice** level are generally able to:
- identify a measurement conversion with numbers up to 100 when provided with a table (e.g., feet to inches),
- identify the place value a digit represents in a three-digit number with no visual support,
- use the mathematical symbols of <, =, > to compare multi-digit numbers to the hundredths place,
- identify the value missing from a table by interpreting a graph and scale, and
- solve addition and subtraction of numbers involving decimals to the tenths place.

## Grade 5 Emerging
Fifth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:
- understand place value,
- identify the product of two single-digit whole numbers,
- identify the difference between two decimals to the tenths place,
- use the mathematical symbols <, =, > to compare numbers, and
- interpret data from a bar graph to identify a number missing from a table.

## Grade 6 Advanced

Sixth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:

- identify the volume of a rectangular prism given three dimensions and the correct formula,
- solve unit rate problems presented with an equation,
- identify the median number in a table with five unordered values up to 100, and
- sort up to six three-dimensional figures based on their attributes.

## Grade 6 Proficient

Sixth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:

- identify an ordered pair (x, y) on a coordinate plane in any of the four quadrants,
- identify the solution to a real-world problem addition or subtraction equation involving whole numbers up to 100,
- identify numbers that are multiples of 25,
- locate the opposite values of positive/negative numbers on a number line from -30 to +30, and
- identify the ratio that represents a mathematical statement.

## Grade 6 Novice

Sixth grade students performing at the **Novice** level are generally able to:

- identify the mathematical expression that matches a one-step, real-world addition or subtraction problem involving whole numbers,
- identify data by making comparisons on a histogram,
- complete two- and three-digit calculations using any of the four basic operations,
- locate a positive/negative integer on a number line,
- identifies the quotient of two numbers with a three-digit dividend up to 1,000 and a two-digit divisor, and
- identifies the mode in a data table of 10 values with numbers up to 100.

## Grade 6 Emerging

Sixth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:

- perform addition, subtraction, and multiplication using two- and three-digit numbers (with or without a calculator), and
- demonstrate a rudimentary understanding of positive and negative numbers and their positions on a number line.

## Grade 7 Advanced

Seventh grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:

- identify the data set that has the characteristics stated by comparing sets of data on a line graph,
- identify the percent of a dollar amount up to $100 in the context of a price reduction, fee, tip, or tax, and
- identify the line graph that matches a relationship presented in $y = mx$ form.

## Grade 7 Proficient

Seventh grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:

- identify the sum of two fractions (between 1 and 2) with like denominators,
- identify the difference between a positive number and a negative number on a number line,
- identify the product or quotient of two positive/negative whole numbers up to 1,000,
- identify mathematical equations that match a one-step subtraction problem,
- interpret the meaning of a point on a graph in a specific context, and
- identify the area of a parallelogram given two dimensions and the formula.

## Grade 7 Novice

Seventh grade students performing at the **Novice** level are generally able to:

- identify three-dimensional figures once two or more attributes are given,
- identify the mathematical symbol ($<, =, >$) to compare the means of two sets of data presented in tables,
- identify the probability of an event (certain/impossible or likely/unlikely) given visual support,
- identify the sum or difference of two numbers up to 100 with decimals to the hundredths place,
- identify mathematical equations that match a real-world, one-step addition problem with decimals,
- identify the volume of a rectangular prism given three dimensions and a formula, and
- identify a three-dimensional figure when given two or more attributes.

## Grade 7 Emerging

Seventh grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:

- identify solutions of addition and subtraction problems involving numbers up to 100 with decimals to the hundredths place, and
- identify the equation that matches a one-step addition problem with decimals.

## Grade 8 Advanced

Eighth grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:

- identify the decimal to the hundredths place that is the equivalent to a fraction, and
- identify the slope and intercept of a line ($y = mx + b$) on a graph.

## Grade 8 Proficient

Eighth grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:

- match translated, reflected, or rotated figures that are congruent, when one is a translation, reflection or rotation of the other,
- identify the graph that shows a linear equation in the form $y = mx + b$,
- identify the expanded form of a number in exponential form with exponents of 2 of 3,
- identify the solution to a two-step, real world problem involving addition or subtraction given an equation with one variable,
- identify data by reading a two-way table, and
- identify the equation that matches a two-step subtraction problem with decimals.

## Grade 8 Novice

Eighth grade students performing at the **Novice** level are generally able to:

- locate a non-terminating decimal on a number line,
- identify the equation used to calculate volume of a square pyramid given the dimensions and formula,
- identify one figure that is a reflection of another,
- identify the value of $y$ for a point missing on a graph of a linear equation,
- identify the equation used to calculate the volume of a square, and
- identify the equation that matches a two-step addition or subtraction problem involving decimals.

## Grade 8 Emerging

Eighth grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:

- identify the equation that matches a two-step addition problem involving decimals,
- identify one figure that is a reflection of another, and
- identify the value of $y$ for a point missing on a graph of a linear equation.

## Grade 11 Advanced
Eleventh grade students performing at the **Advanced** level are able to perform almost all of the knowledge and skills that define Proficient and Novice performance. In addition, they are generally able to:
- identify the repeating decimal that is equivalent to a fraction in a real-world problem, and
- identify the value of an unknown dimension given the formula for volume of a rectangular prism, the values of two dimensions, and the volume.

## Grade 11 Proficient
Eleventh grade students performing at the **Proficient** level are able to perform almost all of the knowledge and skills that define Novice performance. In addition, they are generally able to:
- order four steps to solve an equation ($mx + b = y$),
- identify the mathematical symbol ($>$, $<$, $=$) to compare two unit prices when it requires calculation of two unit prices,
- identify the effect of a change in a variable given the graph of a linear equation,
- identify the data set with a mean score that is the most/least representative of the data set, and
- identify the equation used to calculate conditional probability in a scenario.

## Grade 11 Novice
Eleventh grade students performing at the **Novice** level are generally able to:
- identify the missing coordinate in an ordered pair given a linear equation ($y = mx$) and a table of ordered pairs,
- identify the equation ($mx + b = y$) that matches a scenario,
- identify the value of $y$ in a real-world problem given the value of $x$ and a graph of a linear equation,
- identify three-dimensional figures given a net,
- identify data by reading a two-way table, and
- identify a picture of a three dimensional figure that matches a net.

## Grade 11 Emerging
Eleventh grade students performing at the **Emerging** level demonstrate limited understanding of the knowledge and skills assessed on the Level C PASA. They may be able to:
- identify the value of $y$ in a real-world problem given the value of $x$ and a graph of a linear equation without teacher support to identify the axes, and
- identify data by reading a two-way table.