

ISTEP+ Performance Level Descriptors

Mathematics – Grade 3

Grade 3

Pass+

Pass+ students demonstrate advanced comprehension of mathematical and problem-solving skills. Students display mastery of the relationships among numbers, competently solve a variety of problems using addition and subtraction, represent the concepts of multiplication and division, and skillfully select appropriate symbols and operations to solve number relationships. Students utilize appropriate units of measure to solve problems, and they describe and compare the attributes of plane and solid shapes, while using their understanding to show relationships and solve problems. *Pass+* students synthesize and apply mathematical skills in order to solve sophisticated problems and convey their thoughts in a clear and concise manner.

Some examples of specific knowledge, skills, and abilities for Grade 3 students scoring at the *Pass+* level include:

- Model and compare fractions with the same numerators or denominators
- Use properties of operations to demonstrate the relationship between multiplication and division
- Determine unknown whole numbers in multiplication or division equations
- Create, extend, and give an appropriate rule for number patterns that use multiplication
- Determine elapsed time
- Partition shapes into parts with equal areas and express each area as a unit fraction of the whole
- Use the area formula to determine the areas of rectangles in real-world problems
- Create data displays and solve two- step problems regarding data to make predictions
- Rationalize answers and solutions by explaining why and how answers were found

Pass

Pass students demonstrate proficient mathematical and problem-solving skills. Students understand relationships among numbers, solve problems using addition and subtraction, represent the concepts of multiplication and division, and select appropriate symbols and operations to solve simple number relationships. Students describe and compare the attributes of shapes and utilize appropriate units of measure. *Pass* students experience success when solving problems, communicating ideas, and applying mathematical knowledge to new situations.

Some examples of specific knowledge, skills, and abilities for Grade 3 students scoring at the *Pass* level include:

- Represent a fraction on a number line
- Understand two fractions as equivalent and generate simple equivalent fractions

- Demonstrate knowledge of the inverse relationship between multiplication and division
- Use place value understandings to round 2- and 3-digit whole numbers
- Represent the concepts of multiplication and division using models
- Understand and use attributes of shapes to define categories, such as quadrilaterals
- Use appropriate tools and terms to identify, describe, and draw points, lines, and line segments
- Estimate and measure length to the nearest quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit
- Tell time to the nearest minute
- Find area of a rectangle by modeling with square units and the perimeter of a polygon given the side lengths
- Create scaled picture graphs, scaled bar graphs, and frequency tables to represent a data set
- Use explanations to describe how answers were discovered

Did Not Pass

Did Not Pass students demonstrate a limited understanding of mathematical and problem-solving skills. Students may find it difficult to understand relationships among numbers, attempt to solve problems using addition and subtraction, and strive to select symbols to solve simple number problems. Students may struggle with describing and comparing the attributes of shapes and recognizing simple units of measure. *Did Not Pass* students find it challenging to make decisions about how to approach problem-solving situations, how to communicate their ideas, and how to apply mathematical knowledge to other situations.

Some examples of specific knowledge, skills, and abilities for Grade 3 students scoring at the *Did Not Pass* level include:

- Read and write numbers in words, models, standard, and expanded form
- Compare two whole numbers
- Understand a fraction as one part when the whole is in equal pieces
- Add and subtract whole numbers fluently within 1000
- Solve real-world problems involving addition and subtraction of whole numbers within 1000
- Identify and describe various solid figures
- Draw points, lines, and line segments
- Tell time in five-minute increments
- Find the value of a collection of coins and bills and solve real-world problems to determine if there is enough money to make a purchase
- Solve and check problems
- Decide whether an answer makes sense