Grade 5 Mathematics Assessment

Eligible Texas Essential Knowledge and Skills

STAAR Grade 5 Mathematics Assessment

Reporting Category 1:
Numbers, Operations, and Quantitative Reasoning

The student will demonstrate an understanding of numbers, operations, and quantitative reasoning.

(5.1)   **Number, operation, and quantitative reasoning.** The student uses place value to represent whole numbers and decimals. The student is expected to

   (A)   use place value to read, write, compare, and order whole numbers through 999,999,999,999; and *Supporting Standard*

   (B)   use place value to read, write, compare, and order decimals through the thousandths place. *Supporting Standard*

(5.2)   **Number, operation, and quantitative reasoning.** The student uses fractions in problem-solving situations. The student is expected to

   (A)   generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3; *Readiness Standard*

   (B)   generate a mixed number equivalent to a given improper fraction or generate an improper fraction equivalent to a given mixed number; *Supporting Standard*

   (C)   compare two fractional quantities in problem-solving situations using a variety of methods, including common denominators; and *Readiness Standard*

   (D)   use models to relate decimals to fractions that name tenths, hundredths, and thousandths. *Supporting Standard*

(5.3)   **Number, operation, and quantitative reasoning.** The student adds, subtracts, multiplies, and divides to solve meaningful problems. The student is expected to

   (A)   use addition and subtraction to solve problems involving whole numbers and decimals; *Readiness Standard*

   (B)   use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology); *Readiness Standard*

   (C)   use division to solve problems involving whole numbers (no more than two-digit divisors and three-digit dividends without technology), including interpreting the remainder within a given context; *Readiness Standard*

(D) identify common factors of a set of whole numbers; and ***Supporting Standard***

(E) model situations using addition and/or subtraction involving fractions with like denominators using [concrete objects,] pictures, words, and numbers. ***Supporting Standard***

(5.4) **Number, operation, and quantitative reasoning.** The student estimates to determine reasonable results. The student is expected to

(A) use strategies, including rounding and compatible numbers to estimate solutions to addition, subtraction, multiplication, and division problems. ***Supporting Standard***

Reporting Category 2:
Patterns, Relationships, and Algebraic Reasoning

The student will demonstrate an understanding of patterns, relationships, and algebraic reasoning.

(5.5)   **Patterns, relationships, and algebraic thinking.** The student makes generalizations based on observed patterns and relationships. The student is expected to

    (A)   describe the relationship between sets of data in graphic organizers such as lists, tables, charts, and diagrams; and *Readiness Standard*

    (B)   identify prime and composite numbers using [concrete objects,] pictorial models, and patterns in factor pairs. *Supporting Standard*

(5.6)   **Patterns, relationships, and algebraic thinking.** The student describes relationships mathematically. The student is expected to

    (A)   select from and use diagrams and equations such as $y = 5 + 3$ to represent meaningful problem situations. *Supporting Standard*

Reporting Category 3:
Geometry and Spatial Reasoning

The student will demonstrate an understanding of geometry and spatial reasoning.

(5.7)   **Geometry and spatial reasoning.** The student generates geometric definitions using critical attributes. The student is expected to

   (A)   identify essential attributes including parallel, perpendicular, and congruent parts of two- and three-dimensional geometric figures. ***Supporting Standard***

(5.8)   **Geometry and spatial reasoning.** The student models transformations. The student is expected to

   (A)   sketch the results of translations, rotations, and reflections on a Quadrant I coordinate grid; and ***Readiness Standard***

   (B)   identify the transformation that generates one figure from the other when given two congruent figures on a Quadrant I coordinate grid. ***Supporting Standard***

(5.9)   **Geometry and spatial reasoning.** The student recognizes the connection between ordered pairs of numbers and locations of points on a plane. The student is expected to

   (A)   locate and name points on a coordinate grid using ordered pairs of whole numbers. ***Supporting Standard***

Reporting Category 4:
Measurement

The student will demonstrate an understanding of the concepts and uses of measurement.

(5.10) **Measurement.** The student applies measurement concepts involving length (including perimeter), area, capacity/volume, and weight/mass to solve problems. The student is expected to

    (A)   perform simple conversions within the same measurement system (SI (metric) or customary); ***Supporting Standard***

    (B)   connect models for perimeter, area, and volume with their respective formulas; and ***Supporting Standard***

    (C)   select and use appropriate units and formulas to measure length, perimeter, area, and volume. ***Readiness Standard***

(5.11) **Measurement.** The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to

    (A)   solve problems involving changes in temperature; and ***Supporting Standard***

    (B)   solve problems involving elapsed time. ***Supporting Standard***

Reporting Category 5:
Probability and Statistics

The student will demonstrate an understanding of probability and statistics.

(5.12) **Probability and statistics.** The student describes and predicts the results of a probability experiment. The student is expected to

    (A)   use fractions to describe the results of an experiment; ***Supporting Standard***

    (B)   use experimental results to make predictions; and ***Readiness Standard***

    (C)   list all possible outcomes of a probability experiment such as tossing a coin. ***Supporting Standard***

(5.13) **Probability and statistics.** The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to

    (A)   use tables of related number pairs to make line graphs; ***Supporting Standard***

    (B)   describe characteristics of data presented in tables and graphs including median, mode, and range; and ***Readiness Standard***

    (C)   graph a given set of data using an appropriate graphical representation such as a picture or line graph. ***Supporting Standard***

Underlying Processes and Mathematical Tools

These skills will not be listed under a separate reporting category. Instead, they will be incorporated into at least 75% of the test questions in reporting categories 1–5 and will be identified along with content standards.

(5.14) **Underlying processes and mathematical tools.** The student applies Grade 5 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to

  (A) identify the mathematics in everyday situations;

  (B) solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;

  (C) select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and

  (D) use tools such as real objects, manipulatives, and technology to solve problems.

(5.15) **Underlying processes and mathematical tools.** The student communicates about Grade 5 mathematics using informal language. The student is expected to

  (A) explain and record observations using objects, words, pictures, numbers, and technology; and

  (B) relate informal language to mathematical language and symbols.

(5.16) **Underlying processes and mathematical tools.** The student uses logical reasoning. The student is expected to

  (A) make generalizations from patterns or sets of examples and nonexamples; and

  (B) justify why an answer is reasonable and explain the solution process.