i-Ready Diagnostic for Mathematics in Spanish: What It Measures

This document provides an overview of the content assessed on the *i-Ready Diagnostic* for Mathematics in Spanish and how it assesses students.

What Is the *i-Ready Diagnostic* for Mathematics in Spanish?

The Diagnostic for Mathematics in Spanish is a Grades K–12 computer-adaptive assessment that matches the content and rigor of the Diagnostic for Mathematics in English. Both have the same number of items and assess the same skills and content at the same levels, regardless of language. Items from the Diagnostic for Mathematics in English were transadapted through a rigorous process recommended by the International Test Commission. Development of the Diagnostic for Mathematics included development and review of all included text and the recording of audio support by native Spanish speakers.

***i-Ready Diagnostic* for Mathematics in Spanish gives educators:**

- An understanding of students' current performance overall and by domain for mathematics
- Strengths and instructional priorities and related resources for a class, Report Group, and individual students
- Growth measures and progress to growth targets to engage students in goal setting and foster student ownership of learning

What Is Assessed in the *i-Ready Diagnostic* for Mathematics in Spanish?

i-Ready Diagnostic for Mathematics in Spanish assesses students in four Mathematics domains:

- Number and Operations
- Algebra and Algebraic Thinking
- Geometry
- Measurement and Data

A major goal of this grouping is to build understanding of mathematical concepts within each domain and how they progress across grades. The intent of the *i-Ready Diagnostic* for Mathematics in Spanish is to help identify the specific skills each student needs to develop, identify each student's areas of strength, and measure academic growth throughout the school year. The Diagnostic provides comprehensive insight into student learning across the multiple Mathematics domains. The domains are evaluated using a variety of item types and tools.

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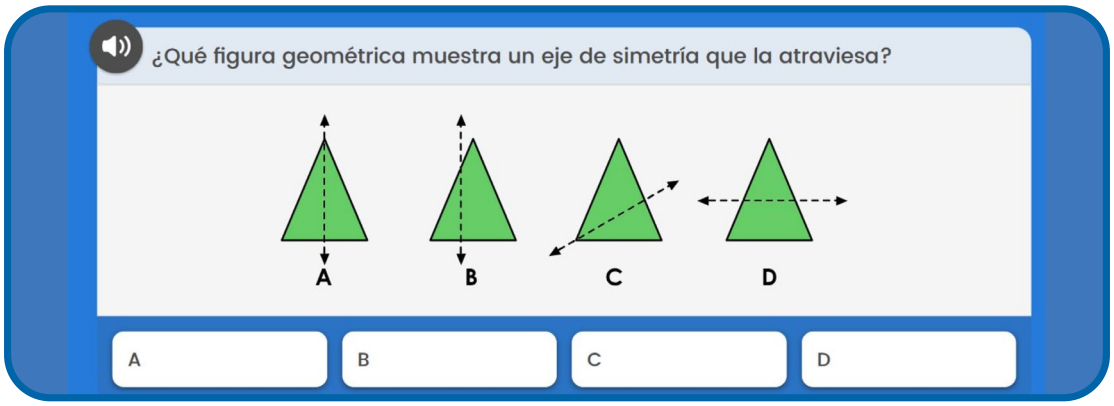
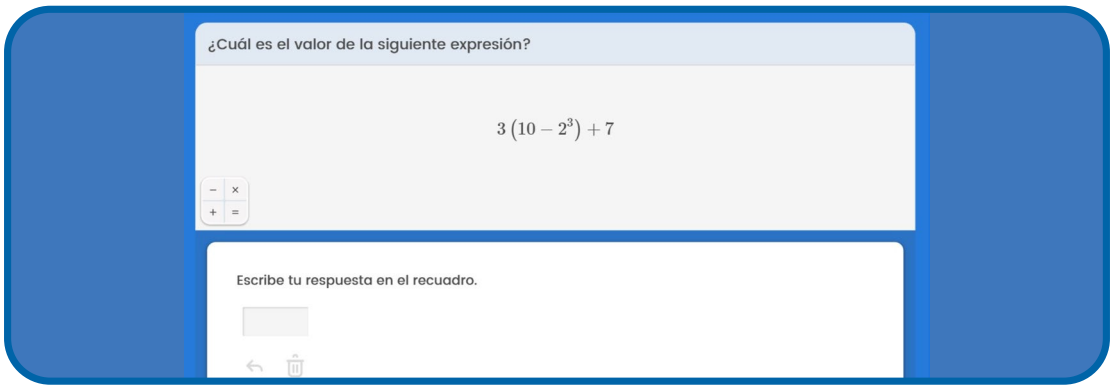
Those item types are:

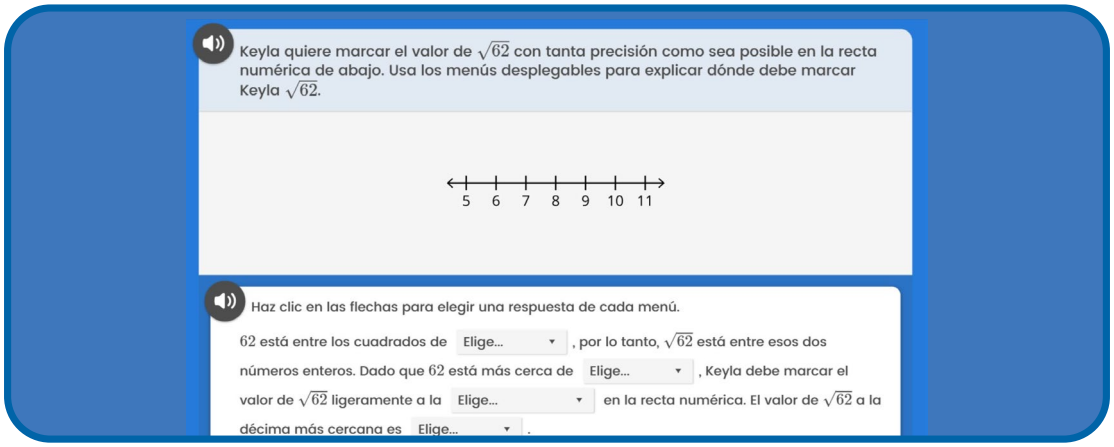
Multiple Choice



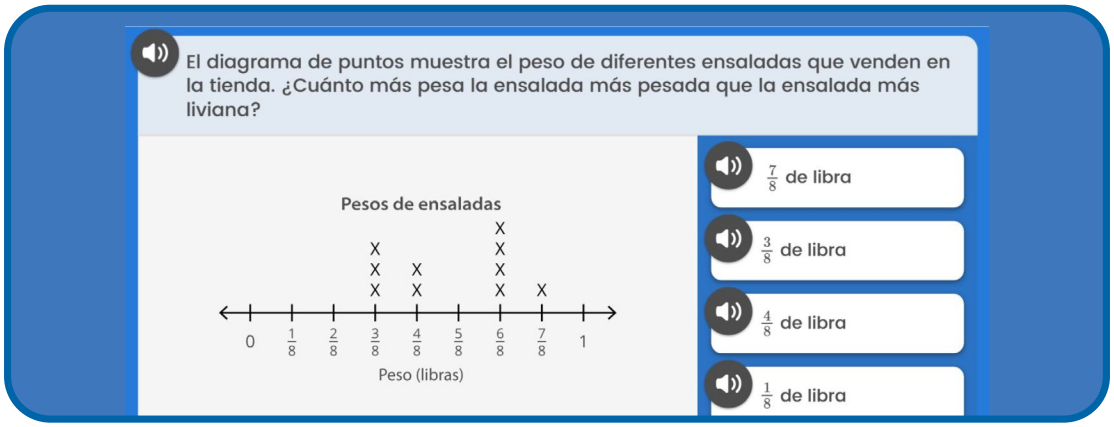
Short Answer



Dropdown



Number Line



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Multilingual Learner Support

The Diagnostic for Mathematics in Spanish allows Spanish-speaking students the opportunity to fully demonstrate their mathematics skills and knowledge. This assessment offers accessibility features that are available to students based on student performance. The list below contains embedded and non-embedded accessibility features and support available for Multilingual Learners. For more information, please refer to the FAQ: What accessibility features are available in *i-Ready Assessment*, and how can they be enabled?.

Embedded	Non-embedded
• Native Spanish audio descriptions and support • Closed captioning • Digital Math Tools	• Native language translation of directions • Student reads test aloud • Bilingual dictionary (when appropriate) • Scratch paper (i.e., blank paper)

Mathematical Tools

Certain items in this assessment may require the use of virtual mathematical tools that are embedded in the item. The Diagnostic for Mathematics in Spanish includes the following tools:

- Four-Function Calculator
- Five-Function Calculator
- Base-Ten Blocks

- Coordinate Grid
- Hundreds Chart
- Protractor

- Ruler
- Ten-Frame with Counters
- Unit Squares

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Number and Operations

Number and Operations refers to the mathematics skills often thought of as arithmetic, from reading and writing numbers to adding, subtracting, multiplying, and dividing different types of numbers. This consists of rational numbers, including whole numbers, decimals, fractions, integers, and irrational numbers. Number and Operations also includes number sense and quantitative reasoning. The *i-Ready Diagnostic* for Mathematics assesses the Number and Operations domain by requiring students to demonstrate an understanding of representing numbers, relationships among numbers, relationships between operations and number systems, the number system, and performing computation with rational numbers accurately. This is done by presenting students with representations of numbers, operations, and mathematical tools. For example, students connect number words and numerals to the quantities they represent using various models.

Assessed Skills

Grades K–5: Counting and Cardinality

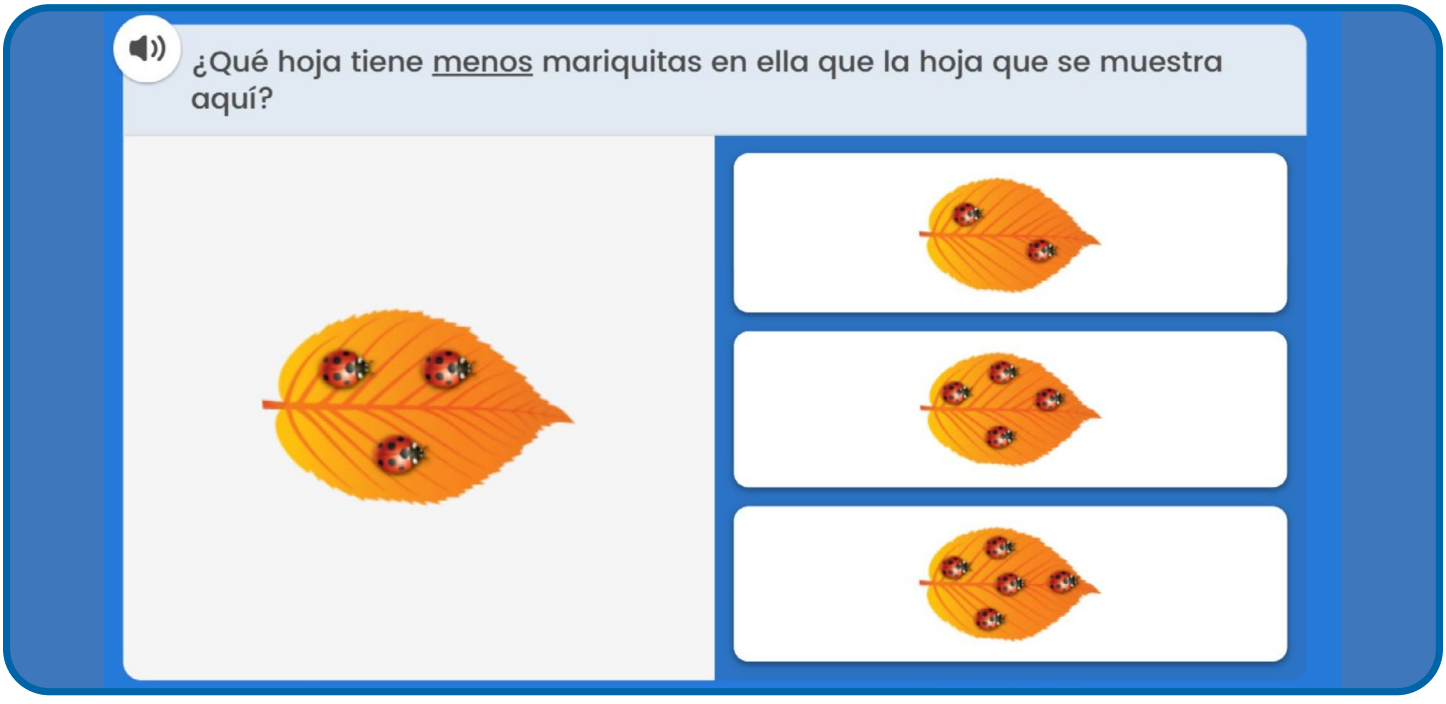
Number and Operations in Base Ten: Whole numbers and decimals, place value, and comparing, adding, subtracting, multiplying, and dividing

Number and Operations—Fractions: Modeling, comparing, adding, subtracting, multiplying, and dividing

Grades 6–8: The Number System: Common factors, common multiples, positive and negative rational numbers (including integers, fractions, and decimals), approximating numbers that are not rational, and irrational numbers

Grades 9–12: Number and Quantity: The real number system, quantities, the complex number system, vector and matrix quantities, and operations on vectors

Sample Items



Grade K: This item measures students' proficiency with solving a word problem involving comparing numbers to identify the least value with the help of a visual model.

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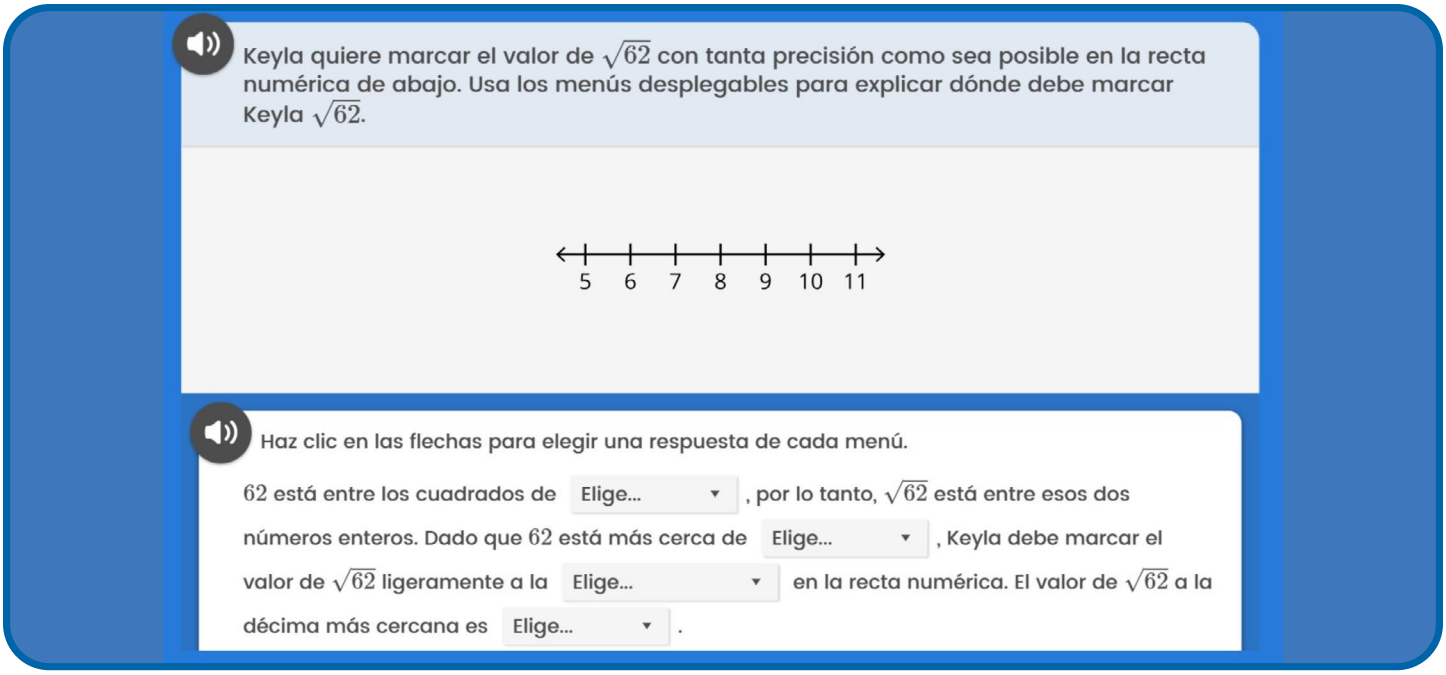

Grade 8: Using a dropdown menu, students are asked to solve a radical equation by plotting it on a number line.

Algebra and Algebraic Thinking

Algebra and Algebraic Thinking refers to mathematics skills related to seeing number patterns, understanding the meaning of addition, subtraction, multiplication, and division, and using symbols to write and solve equations, including those used to solve word problems. In the high school grades, this domain covers the algebra topics related to using functions, equations, and inequalities to model mathematical situations and solve problems by reasoning quantitatively and extending the understanding of operations beyond the real number system. The *i-Ready Diagnostic* for Mathematics assesses the Algebra and Algebraic Thinking domain by requiring students to apply formulas, interpret word problems, and use images and modeling to come to a response to each item. Students demonstrate an understanding of quantitative relationships and analyze mathematical situations and structures using algebraic symbols, patterns, models, and words.

Assessed Skills

Grades K–5: Operations and Algebraic Thinking: Meaning of operations, number relationships, applying properties of operations, and solving word problems

Grades 6–8: Ratios and Proportional Relationships: Percentages, rates, and ratios

Expressions and Equations: Variables, equivalent expressions, exponents, radicals and integer exponents, solving real-world problems, slope, equations, inequalities, graphs of lines, and systems of equations

Functions: Defining, evaluating, and comparing functions and modeling relationships with functions

Grades 9–12: Algebra: Structure of expressions, arithmetic with polynomial and rational expressions, interpreting, writing, and solving equations, and reasoning with equations and inequalities

Functions: Interpreting, modeling, and building functions (i.e., linear, exponential, piecewise-defined, step, absolute value, quadratic, polynomial, logarithmic, trigonometric, and rational)

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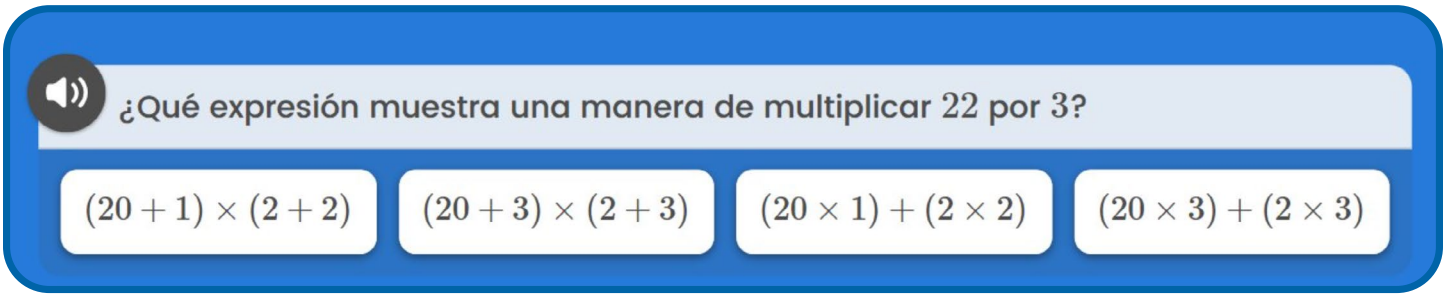
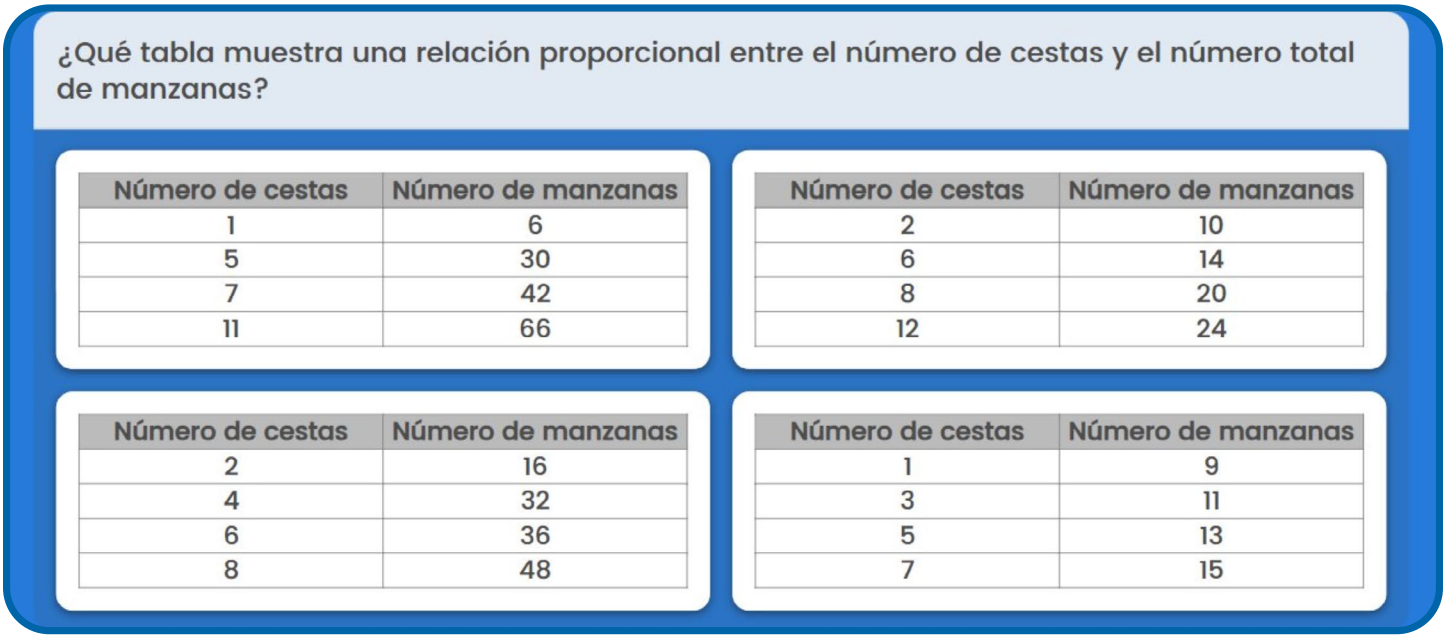
Sample Items



Grade 3: In this item, students are asked to identify the operational equation to solve a multiplication problem.



Grade 7: This item measures students' ability to find the relationship between two variables.

Geometry

Geometry refers to a variety of skills related to analyzing two- and three-dimensional shapes. These include naming and classifying shapes using characteristics such as symmetry, number of sides, and angle measures, and in later grades, using congruence and similarity. In high school grades, this domain covers Geometry and Measurement topics related to developing spatial geometric reasoning, connecting geometric properties and equations, writing proofs, and using statistics and probability concepts to analyze data. The *i-Ready Diagnostic* assesses the Geometry domain by requiring students to make use of images, mathematical tools, and geometric relationships. Students use geometric properties and connections to solve word problems, evaluate constructs, and support mathematical conclusions.

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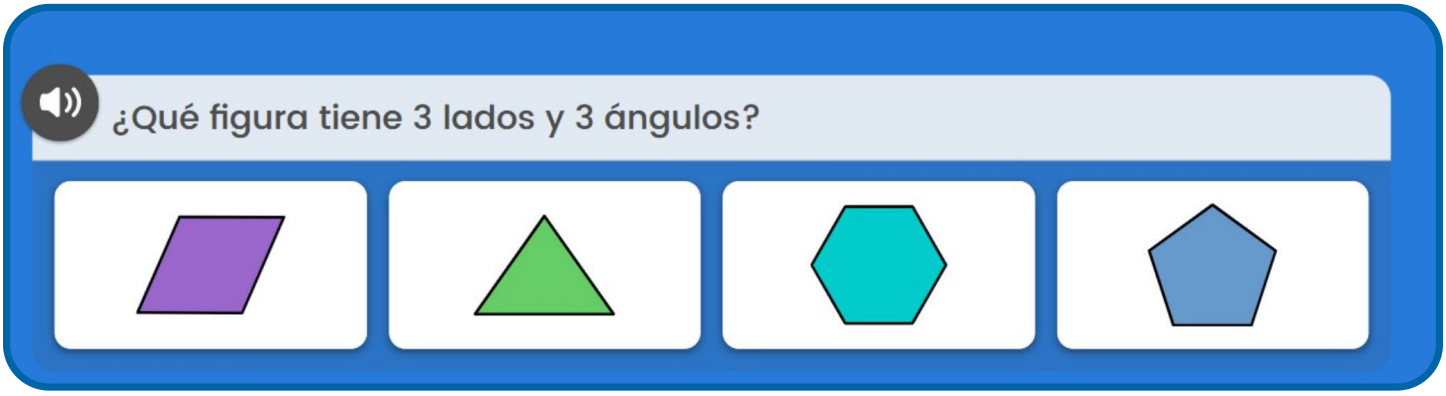
Assessed Skills

Grades K–5: Geometry: Two-dimensional figures, three-dimensional shapes, lines, segments, points, rays, angles, symmetry, coordinate plane, graphing points, perimeter, area, and volume

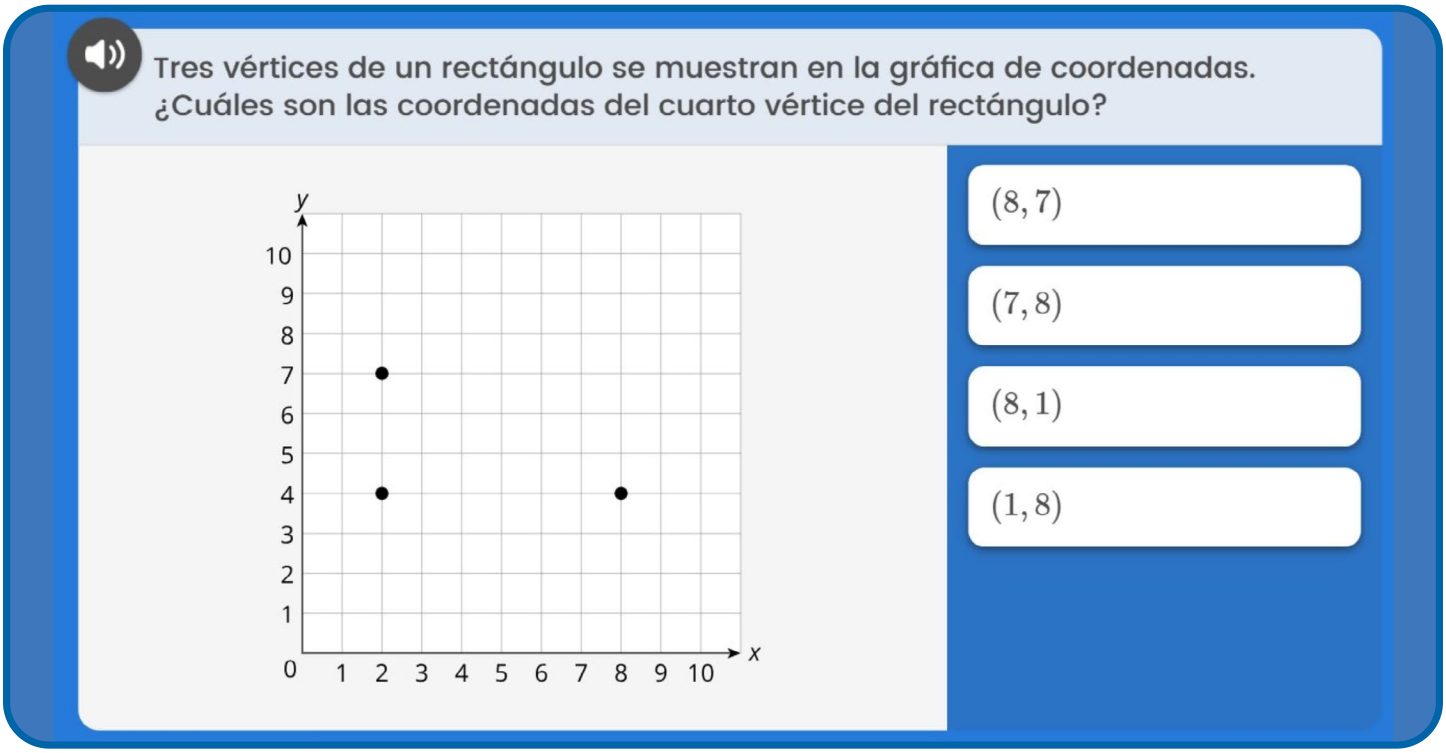
Grades 6–8: Geometry: Relationship between geometric figures, angle measures, area, surface area, congruence, similarity, coordinate geometry, and the Pythagorean Theorem

Grades 9–12: Geometry: Congruence, similarity, transformations, right triangles, right triangle trigonometry, circles, and proofs

Sample Items



Grade 2: In this item, students are asked to identify which two-dimensional figure has three sides and three angles.



Grade 5: This item measures students' ability to visualize a rectangle and identify the plotting points to create a rectangular shape.

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Measurement and Data

Measurement and Data comprises a wide range of mathematics skills related to collecting, organizing, and interpreting numerical information, from telling time or using a ruler to measuring the length of an object, to using formulas to find volume or surface area. The *i-Ready Diagnostic* assesses the Measurement and Data domain by requiring students to understand how to use and interpret tables and graphs, and in later grades, statistics and probability. Students are asked to demonstrate proficiency in applying concepts, such as length, area, weight, and volume, and can select the appropriate type of unit of measurement.

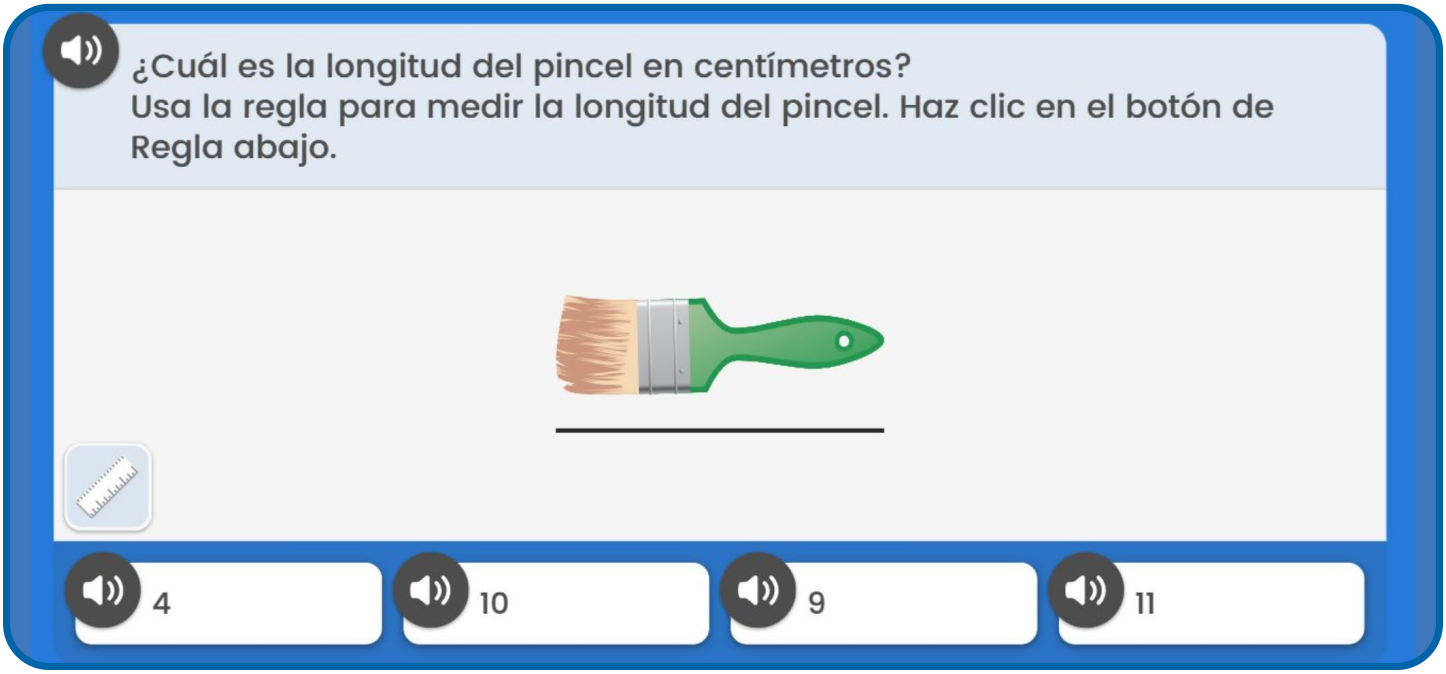
Assessed Skills

Grades K–5: Measurement and Data: Customary and metric units, time, money, length, capacity, weight and mass, geometric measurement, area, perimeter, volume, and creating and interpreting graphs

Grades 6–8: Statistics and Probability: Randomness, probability distributions, statistical questions, collecting and analyzing data, making inferences and conclusions based on random samples, and measures of center and variability

Grades 9–12: Statistics and Probability: Interpreting categorical and quantitative data, making inferences and justifying conclusions, conditional probability, rules of probability, expected values, and making decisions using probability

Sample Items



Grade 2: In this item, students are asked to identify the length of the object in centimeters using the ruler as an embedded support for all learners.

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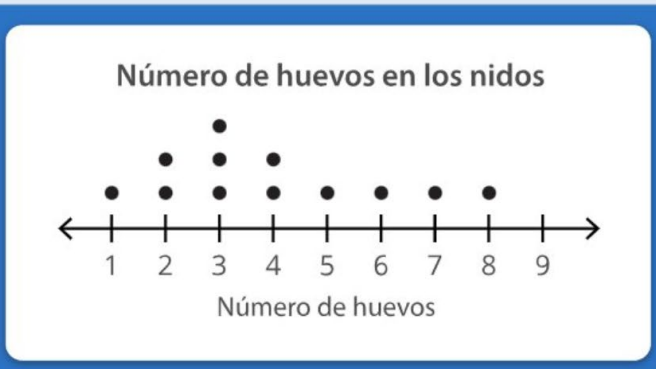
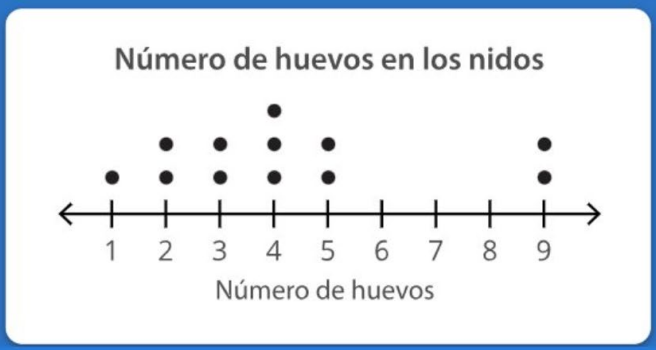
Una guardaparques anota el número de huevos que hay en diferentes nidos de pájaros. La lista muestra los datos.

2, 4, 9, 3, 4, 3, 5, 2, 8, 3, 1, 5

¿Qué diagrama de puntos muestra los datos de la guardaparques?





Grade 6: This item measures students' skills in collecting and analyzing the data provided to be able to identify the diagram with the plots properly distributed.

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Mathematics Domains Tables

Grades K–5	Grades 6–8	Grades 9–12* (Assessed Only)
Number and Operations		
Number and Operations in Base Ten Whole numbers and decimals, place value, and comparing, adding, subtracting, multiplying, and dividing **Number and Operations—Fractions** Modeling, comparing, adding, subtracting, multiplying, and dividing	**The Number System** Common factors, common multiples, positive and negative rational numbers (including integers, fractions, and decimals), approximating numbers that are not rational, and irrational numbers	**Number and Quantity** The real number system, quantities, the complex number system, vector and matrix quantities, and operations on vectors
Algebra and Algebraic Thinking		
Operations and Algebraic Thinking Meaning of operations, number sense, number relationships, applying properties of operations, and solving word problems	**Ratios and Proportional Relationships** Percentages, rates, and ratios **Expressions and Equations** Variables, equivalent expressions, exponents, radicals and integer exponents, solving real-world problems, slope, equations, inequalities, graphs of lines, and systems of equations **Functions** Defining, evaluating, and comparing functions and modeling relationships with functions	**Algebra** Structure of expressions, arithmetic with polynomial and rational expressions, interpreting, writing, and solving equations, and reasoning with equations and inequalities **Functions** Interpreting, modeling, and building functions (i.e., linear, exponential, piecewise-defined, step, absolute value, quadratic, polynomial, logarithmic, trigonometric, rational)

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Grades K–5	Grades 6–8	Grades 9–12* (Assessed Only)
Geometry		
Geometry Two-dimensional figures, three-dimensional shapes, lines, segments, points, rays, angles, symmetry, coordinate plane, graphing points, perimeter, area, and volume	**Geometry** Relationship between geometric figures, angle measures, area, surface area, congruence, similarity, coordinate geometry, and the Pythagorean Theorem	**Geometry** Congruence, similarity, transformations, right triangles, right triangle trigonometry, circles, and proofs
Measurement and Data		
Measurement and Data Customary and metric units, time, money, length, capacity, weight and mass, geometric measurement, area, perimeter, volume, and creating and interpreting graphs	**Statistics and Probability** Randomness, probability distributions, statistical questions, collecting and analyzing data, making inferences and conclusions based on random samples, and measures of center and variability	**Statistics and Probability** Interpreting categorical and quantitative data, making inferences and justifying conclusions, conditional probability, rules of probability, expected values, and making decisions using probability

*In Diagnostic Results reports for Grades 9–12, student data will be reflected in two domains: Algebra and Algebraic Thinking (includes topics shown in Grades 9–12 Number and Operations) and Geometry (includes topics shown in Grades 9–12 Measurement and Data).

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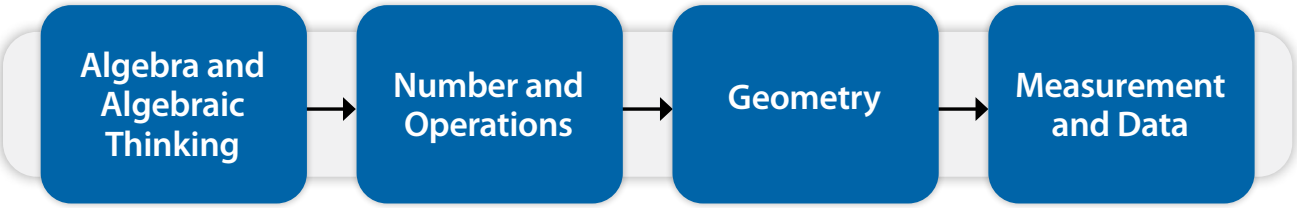
i-Ready Diagnostic for Mathematics in Spanish Test Flow

The domains and test flow vary by grade level and student performance.

Grades K–8

Students who are in chronological Grades K–8 will be assessed in all four Mathematics domains in the following order:

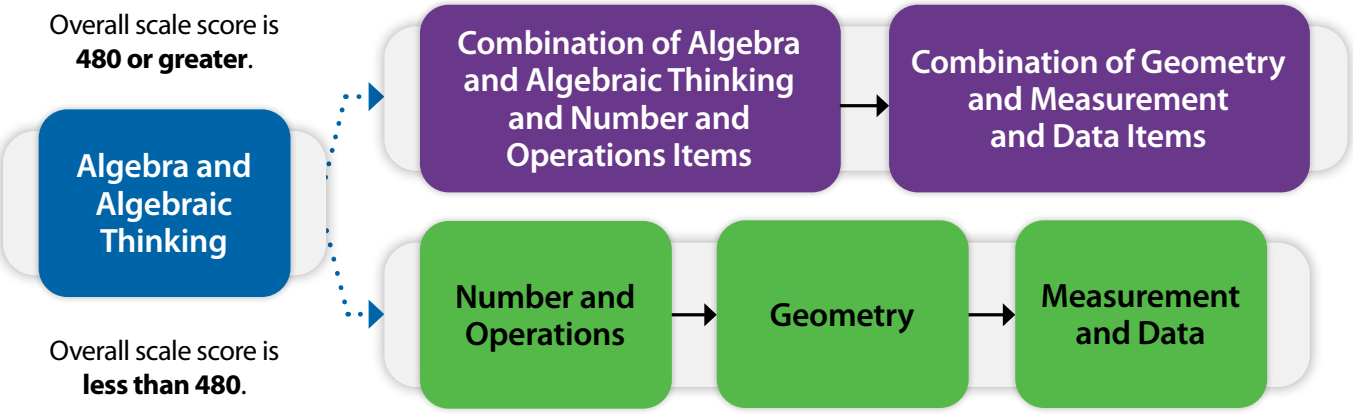


Students in Grades K–8 will see 66 total items across the four Mathematics domains.

Grades 9–12

Students who are in chronological Grades 9–12 are first assessed in the Algebra and Algebraic Thinking domain. The student's overall scale score after completing the first 18 items in this domain determines the rest of their test flow.

Students who score below 480 on the first set of items follow a test flow consisting of Number and Operations, then Geometry, and then Measurement and Data. This branch of the test flow is designed to assess students who are generally performing well below proficiency on typical high school content. The goal is to provide instructional information to educators to help get students to grade-level proficiency.



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