

# 5<sup>TH</sup> GRADE MATHEMATICS CHECKLIST

## Goals 6 – 10

### Illinois Learning Standards A-D

### Assessment Frameworks

### Calculators Allowed on ISAT

**ISAT test questions are derived from this checklist. Use as a curriculum guide.**

#### **REPRESENTATIONS AND ORDERING**

- \_\_\_\_\_ Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000,000.
- \_\_\_\_\_ Read, write, recognize, model, and interpret numerical expressions from a given description or situation.
- \_\_\_\_\_ Read, write, recognize, and model equivalent representations of fractions, including improper fractions and mixed numbers.
- \_\_\_\_\_ Recognize, translate between, and model multiple representations of decimals, fractions less than one (halves, quarters, fifths, and tenths), and percents (0%, 25%, 50%, 75%, and 100%).
- \_\_\_\_\_ Read, write, recognize, and model decimals and their place values through thousandths.
- \_\_\_\_\_ Represent multiplication as repeated addition.
- \_\_\_\_\_ Order and compare whole numbers up to 1,000,000.
- \_\_\_\_\_ Order and compare decimals through hundredths.
- \_\_\_\_\_ Order and compare fractions having like or unlike denominators with or without models.
- \_\_\_\_\_ Identify and locate whole numbers, halves, fourths, and thirds on a number line.
- \_\_\_\_\_ Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than, square numbers).

#### **COMPUTATION, OPERATIONS, ESTIMATION, AND PROPERTIES**

- \_\_\_\_\_ Solve problems and number sentences involving addition, subtraction, multiplication, and division using whole numbers.
- \_\_\_\_\_ Solve problems and number sentences involving addition and subtraction of decimals through hundredths (with or without monetary labels).
- \_\_\_\_\_ Model situations involving addition and subtraction of fractions.

\_\_\_\_\_ Solve problems involving the commutative, distributive, and identity properties of operations on whole numbers (e.g.,  $37 \times 46 = 46 \times 37$ ,  $270 \times 5 = (200 \times 5) + (70 \times 5)$ ].

\_\_\_\_\_ Make estimates appropriate to a given situation with whole numbers, fractions, and decimals.

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### **RATIOS, PROPORTIONS, AND PERCENTS**

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\_\_\_\_\_ Identify and express ratios using appropriate notation (i.e.,  $a/b$ ,  $a$  to  $b$ ), and identify equivalent ratios.

\_\_\_\_\_ Solve problems involving proportional relationships, including unit pricing (e.g., one apple costs 20¢, so four apples cost 80¢).

\_\_\_\_\_ Read, write, recognize, and model percents (0%, 25%, 50%, 75%, and 100%).

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### **UNITS, TOOLS, ESTIMATION, AND APPLICATIONS**

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\_\_\_\_\_ Solve problems involving elapsed time in compound units.

\_\_\_\_\_ Select and use appropriate standard units and tools to measure length (to the nearest  $\frac{1}{4}$  inch or mm), mass/weight, capacity, and angles.

\_\_\_\_\_ Solve problems involving the perimeter and area of a triangle, rectangle, or irregular shape using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).

\_\_\_\_\_ Compare and estimate length (including perimeter), area, volume, weight/mass, and angles ( $0^\circ$  to  $180^\circ$ ) using referents.

\_\_\_\_\_ Determine the volume of a right rectangular prism using an appropriate formula or strategy.

\_\_\_\_\_ Solve problems involving unit conversions within the same measurement system for time, length, and weight/mass, including compound units (e.g., 5ft 5in, 2lbs 2oz).

\_\_\_\_\_ Solve problems involving map interpretation (e.g., one inch represents five miles, so two inches represent ten miles).

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### **REPRESENTATIONS, PATTERNS, AND EXPRESSIONS**

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\_\_\_\_\_ Determine a missing term in a sequence, extend a sequence, and identify errors in a sequence when given a description or sequence.

\_\_\_\_\_ Construct and identify a rule that can generate the terms of a given sequence.

\_\_\_\_\_ Write an expression using variables to represent unknown quantities.

\_\_\_\_\_ Evaluate algebraic expressions with a whole number variable value (e.g., evaluate  $m + m + 3$  when  $m = 4$ ).

## CONNECTIONS USING TABLES, GRAPHS, AND SYMBOLS

- \_\_\_\_\_ Demonstrate, in simple situations, how a change in one quantity results in a change in another quantity (e.g., input–output tables).
- \_\_\_\_\_ Translate between different representations (table, written, or pictorial) of whole number relationships.

## WRITING, INTERPRETING, AND SOLVING EQUATIONS

- \_\_\_\_\_ Represent problems with equations and inequalities.
- \_\_\_\_\_ Solve for the unknown in an equation with one operation (e.g.,  $2+n=20$ ,  $n \div 2=6$ ).
- \_\_\_\_\_ Solve word problems involving unknown quantities.

## PROPERTIES OF SINGLE FIGURES AND COORDINATE GEOMETRY

- \_\_\_\_\_ Classify, describe, and sketch two–dimensional shapes (triangles, quadrilaterals, pentagons, hexagons, and octagons) according to the number of sides, length of sides, number of vertices, and interior angles (right, acute, obtuse).
- \_\_\_\_\_ Identify and describe three–dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).
- \_\_\_\_\_ Solve problems using properties of triangles (e.g., sum of interior angles of a triangle is  $180^\circ$ ).
- \_\_\_\_\_ Identify, describe, and sketch circles, including radius and diameter.
- \_\_\_\_\_ Graph, locate, identify points, and describe paths using ordered pairs (first quadrant).
- \_\_\_\_\_ Identify whether or not a figure has one or more lines of symmetry, and sketch or identify all lines of symmetry.
- \_\_\_\_\_ Identify, describe, and predict results of reflections, translations, and rotations of two–dimensional shapes.
- \_\_\_\_\_ Identify and sketch parallel, perpendicular, and intersecting lines.
- \_\_\_\_\_ Identify and sketch acute, right, and obtuse angles.

## RELATIONSHIPS BETWEEN AND AMONG MULTIPLE FIGURES

- \_\_\_\_\_ Identify the two–dimensional components of a three–dimensional object.
- \_\_\_\_\_ Identify a three–dimensional object from its net.

- \_\_\_\_\_ Predict the result of composing or decomposing shapes or figures.
- \_\_\_\_\_ Identify congruent and similar figures by visual inspection.
- \_\_\_\_\_ Determine if figures are similar, and identify relationships between corresponding parts of similar figures.
- \_\_\_\_\_ Determine the distance between two points on a horizontal or vertical number line in whole numbers.

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### **DATA ANALYSIS AND STATISTICS**

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- \_\_\_\_\_ Read, interpret, and make predictions from data represented in a pictograph, bar graph, line (dot) plot, Venn diagram (with two circles), chart/table, line graph, or circle graph.
- \_\_\_\_\_ Create a pictograph, bar graph, chart/table, or line graph for a given set of data.
- \_\_\_\_\_ Determine the mode, range, median (with an odd number of data points), and mean, given a set of data or a graph.

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### **PROBABILITY**

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- \_\_\_\_\_ Solve problems involving the probability of a simple event, including representing the probability as a fraction between zero and one.
- \_\_\_\_\_ Apply the fundamental counting principle in a simple problem (e.g., How many different combinations of one-scoop ice cream cones can be made with 3 flavors and 2 types of cones?).