

4TH 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 1,000,000.
- _____ Identify and write (in words and standard form) whole numbers up to 1,000,000.
- _____ Read, write, recognize, and model equivalent representations of fractions; divide regions or sets to represent a fraction.
- _____ Represent multiplication as repeated addition.
- _____ Order and compare whole numbers up to 100,000.
- _____ Order and compare decimals through hundredths.
- _____ Order and compare fractions having like denominators with or without models.
- _____ Identify and locate whole numbers, halves, and fourths on a number line.
- _____ Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than).

COMPUTATION, OPERATIONS, ESTIMATION, AND PROPERTIES

- _____ Solve problems and number sentences involving addition and subtraction with regrouping and multiplication (up to three-digit by one-digit).
- _____ Solve problems involving the value of a collection of bills and coins whose total value is \$100.00 or less, and make change.
- _____ Model and apply basic multiplication and division facts (up to 12×12), and apply them to related multiples of 10 (e.g., $3 \times 9 = 27$, $30 \times 9 = 270$, $6 \div 3 = 2$, $600 \div 3 = 200$).
- _____ Model situations involving addition and subtraction of fractions with like denominators.
- _____ Solve problems involving the commutative and distributive properties of operations on whole numbers [e.g., $8 + 7 = 7 + 8$, $27 \times 5 = (20 \times 5) + (7 \times 5)$].
- _____ Use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences and solve problems (e.g., $4 \times 3 = 12$, $12 \div 3 = \underline{\quad}$).
- _____ Make estimates appropriate to a given situation with whole numbers.

UNITS, TOOLS, ESTIMATION, AND APPLICATIONS

- _____ Solve problems involving elapsed time in compound units (e.g., 1 hour and 40 minutes) that occur in the same half day (a.m. only or p.m. only).
- _____ Select and use appropriate standard units and tools to measure length (to the nearest $\frac{1}{2}$ inch or $\frac{1}{2}$ cm), time, and temperature.
- _____ Solve problems involving the perimeter of a polygon with given side lengths and the area of a square, rectangle, or irregular shape composed of rectangles using diagrams, models, and grids or by measuring (may include sketching a figure from its description).
- _____ Compare and estimate length (including perimeter), area, volume, and weight/mass using referents.
- _____ Determine the volume of a solid figure that shows cubic units.
- _____ Solve problems involving unit conversions within the same measurement system for time, length, and weight/mass.

REPRESENTATIONS, PATTERNS, AND EXPRESSIONS

- _____ Determine a missing term in a pattern (sequence), describe a pattern (sequence), and extend a pattern (sequence) when given a description or pattern (sequence).
- _____ Write an expression using letters or symbols to represent an unknown quantity.
- _____ Evaluate algebraic expressions with a whole number variable value (e.g., evaluate $3 + m$ when $m = 4$).

CONNECTIONS USING TABLES, GRAPHS, AND SYMBOLS

- _____ Identify or represent situations with well-defined patterns using words, tables, and graphs (e.g., represent temperature and time in a line graph).
- _____ Translate between different representations (table, written, or pictorial) of whole number relationships.

WRITING, INTERPRETING, AND SOLVING EQUATIONS

- _____ Represent simple mathematical relationships with number sentences (equations and inequalities).
- _____ Solve for the unknown in an equation with one operation (e.g., $10 = \square + 3 + 2$, $\square - 1 = 3$).
- _____ Solve word problems involving unknown quantities.

PROPERTIES OF SINGLE FIGURES AND COORDINATE GEOMETRY

- _____ Identify, 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 right angles.
- _____ Identify and describe three–dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).
- _____ Differentiate between polygons and non–polygons
- _____ 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 images resulting from flips (reflections), slides (translations), or turns (rotations).
- _____ Identify and sketch parallel and perpendicular lines.
- _____ Identify and sketch right 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 the distance between two points on the number line in whole numbers.

DATA ANALYSIS, STATISTICS, AND PROBABILITY

- _____ Read and interpret data represented in a pictograph, bar graph, line (dot) plot, Venn diagram (with two circles), tally chart, table, line graph, or circle graph.
- _____ Create a pictograph, bar graph, tally chart, or table for a given set of data.
- _____ Determine the mode and range, given a set of data or a graph.

PROBABILITY

- _____ Classify events using words such as certain, most likely, equally likely, least likely, possible, and impossible.
- _____ Describe the chances associated with a context presented visually, including using the response format “3 out of 4” or $\frac{3}{4}$.