

**A Correlation of**



**to the**

**Louisiana**  
**Department of Education**  
**Mathematics—Grade Level Expectations**  
**Grade One**



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**Book Title:** Investigations in Number, Data, & Space    **Grade Level:** One

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**Grade 1**

**Number and Number Relations**

**In problem-solving investigations, students demonstrate an understanding of the real number system and communicate the relationships within that system using a variety of techniques and tools.**

**Students use estimation, mental arithmetic, number lines, graphs, appropriate models, manipulatives, calculators, and computers as they investigate problems involving whole numbers.**

<b>GRADE LEVEL EXPECTATIONS</b>	<b>CORRELATION NOTATIONS</b>
1. Count to 100 by 1s, 5s, 10s, and 25s (N-1-E) (N-3-E) (N-4-E)	Mathematical Thinking at Grade 1 Investigation 1: Sessions 2–4 Investigation 2: Sessions 1–6 Investigation 4: Sessions 1–6 Investigation 5: Sessions 1–6 Building Number Sense Investigation 1: Sessions 1–8 Investigation 2: Sessions 1–6, 8–9 Investigation 3: Sessions 1–7, 9 Investigation 4: Sessions 1–10 Number Games and Story Problems Investigation 2: Sessions 1–12 Bigger, Taller, Heavier, Smaller Investigation 2: Sessions 1–7 Classroom Routines: Counting
2. Read and write numerals to 100 (N-1-E)	Mathematical Thinking at Grade 1 Investigation 1: Sessions 2–4 Investigation 2: Sessions 1–6 Investigation 4: Sessions 1–6 Investigation 5: Sessions 1–6 Building Number Sense Investigation 1: Sessions 1–8 Investigation 2: Sessions 1–6, 8–9 Investigation 3: Sessions 1–7, 9 Investigation 4: Sessions 1–10

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
(continued)	Number Games and Story Problems Investigation 2: Sessions 6–12 Bigger, Taller, Heavier, Smaller Investigation 2: Sessions 1–7 Classroom Routines: Counting
3. Write number words for 0 to 19 (N-1-E) (N-3-E)	This expectation can be introduced during these activities. Number cards can be reproduced with number words inserted. Mathematical Thinking at Grade 1 Investigation 2: Sessions 1, 2-3 Building Number Sense Investigation 1: Sessions 1, 3
4. Use ordinal numbers through 31 <sup>st</sup> as they relate to the calendar (N-1-E)	Several activities provide opportunities for practice with ordinal numbers. Notes to the teacher point out these opportunities. Mathematical Thinking at Grade 1 Investigation 2: Sessions 2 and 3 (see p. 37) Building Number Sense Investigation 3: Sessions 1–2
5. Model and read place value in word, standard, and expanded form for numbers through 99 (N-1-E)	These activities provide opportunities to introduce this expectation. Building Number Sense Investigation 3: Sessions 1– 2 Number Games and Story Problems Investigation 2: Sessions 6–9
6. Use region models and sets of objects to demonstrate understanding of the concept of halves (N-1-E)	This expectation is addressed in Shapes, Halves, and Symmetry in Grade 2.
7. Identify quarters, half-dollars, and their values (N-1-E) (N-2-E) (M-1-E)	Number Games and Story Problems Investigation 2: Sessions 3–8
8. Find the value of a set of coins up to \$1.00, using one denomination of coin (N-2-E) (N-6-E) (M-1-E) (M-5-E)	Number Games and Story Problems Investigation 2: Sessions 4–5
9. Apply estimation strategies to estimate the size of groups up to 20 (N-2-E) (N-8-E)	Classroom Routines: Counting
10. Using a number line or chart, locate, compare, and order whole numbers less than 100 and identify the numbers coming before/after a given number and between 2 given numbers (N-3-E) (A-1-E)	Building Number Sense Investigation 2: 6–8

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
11. From a given number between 1 and 100, count forward and backward (N-3-E)	Building Number Sense Investigation 4: Sessions 2–5 Number Games and Story Problems Investigation 2: Sessions 6–8 Investigation 3: Sessions 2–5
12. Know the basic facts for addition and subtraction [0s, 1s, counting on and back 2s, doubles, doubles $\pm 1$ , then 10s facts, and related turn-around (commutative) pairs] and use them to solve real-life problems (N-4-E) (N-6-E) (N-8-E)	Mathematical Thinking at Grade 1 Investigation 2: Sessions 4–6 Investigation: Session 4 Building Number Sense Investigation 1: Sessions 1–9 Investigation 2: Sessions 1–9 Investigation 4: Sessions 1–10 Number Games and Story Problems Investigation 1: Sessions 1–10 Investigation 2: Sessions 1–8, 10–12 Investigation 3: Sessions 1–8
13. Recognize and apply addition and subtraction as inverse operations (N-4-E)	These activities provide opportunities to introduce this expectation. Number Games and Story Problems Investigation 3: Sessions 1–5 Building Number Sense Teacher Note, page 45.
14. Add and subtract 2-digit numbers using manipulatives (N-4-E) (N-7-E)	Number Games and Story Problems Investigation 2: Session 13
15. Recognize real-life situations as addition or subtraction problems (N-5-E) (N-4-E)	Mathematical Thinking at Grade 1 Investigation 2: Sessions 4–6 Investigation 4: Sessions 4–6 Building Number Sense Investigation 4: Sessions 1–5, 7–10 Quilt Squares and Block Towns Investigation 1: Sessions 2–10 Investigation 3: Sessions 6–7 Number Games and Story Problems Investigation 3: Sessions 1–13
16. Given a number and number line/hundreds chart, identify the nearest ten (N-7-E)	These activities provide the opportunity to introduce this expectation. Number Games and Story Problems Investigation 2: Sessions 6–8

## Algebra

In problem-solving investigations students demonstrate an understanding of concepts and processes that allow them to analyze, represent, and describe relationships among variable quantities and to apply algebraic methods to real-world situations.

Students use manipulatives, models, graphs, tables, technology, number sense, and estimation as they investigate problems involving the concepts and application of algebra.

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
17. Use the equal sign (=) to express the relationship of equality (A-1-E)	Building Number Sense Investigation 2: Session 2 Investigation 4: Sessions 1–2 Number Games and Story Problems Investigation 1: Sessions 1–10
18. Use objects, pictures, and number sentences to represent real-life problem situations involving addition and subtraction (A-1-E) (A-3-E) (N-7-E)	Mathematical Thinking at Grade 1 Investigation 2: Sessions 4–6 Investigation 4: Sessions 4–6 Building Number Sense Investigation 2: Sessions 1–2, 6–9 Investigation 4: Sessions 1–5, 7–10 Number Games and Story Problems Investigation 1: Sessions 1–10 Investigation 2: Sessions 1–8, 10–13 Investigation 3: Sessions 10, 11, 12
19. Use objects, pictures, and verbal information to solve for missing numbers (A-2-E) (N-7-E)	Number Games and Story Problems Investigation 2: Sessions 6–8 Investigation 3: Sessions 9 Investigation 3: Sessions 1–5, 10–12

## Measurement

In problem-solving investigations, students demonstrate an understanding of the concepts, processes, and real-life applications of measurement.

Students use number sense, estimation, appropriate manipulatives, tools, and technology as they investigate problems involving measurement.

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
20. Measure length to the nearest inch and centimeter using appropriate tools (M-1-E) (M-2-E)	In these activities, students use interlocking cubes to measure objects. Bigger, Taller, Heavier, Smaller Investigation 3: Sessions 4–5
21. Tell time to the hour and half-hour, and identify date, day, week, month, and year on a calendar (M-1-E) (M-2-E) (M-5-E)	Survey Questions and Secret Rules Investigation 3: Sessions 1–3 Classroom Routines: Counting; Understanding Time and Changes
22. Select appropriate non-standard units for linear measurement situations (e.g., sticks, blocks, paper clips) (M-2-E)	Bigger, Taller, Heavier, Smaller Investigation 3: Sessions 2, 4–5
23. Compare the measure of objects to benchmarks (e.g., the width of a child's thumb is about a centimeter, the weight of a loaf of bread is about a pound, and the mass of a textbook is about a kilogram) (M-2-E)	Bigger, Taller, Heavier, Smaller Investigation 3: Sessions 1–3
24. Measure capacity using cups (M-2-E) (M-3-E) (M-1-E)	These activities involve measuring capacity with non-standard units. Bigger, Taller, Heavier, Smaller Investigation 2: Sessions 1–7
25. Identify the thermometer as a tool for measuring temperature (M-2-E)	These activities provide opportunities to introduce this expectation. Survey Questions and Secret Rules Classroom Routines: Understanding Time and Changes (Weather)

## Geometry

In problem-solving investigations, students demonstrate an understanding of geometric concepts and applications involving one-, two-, and three-dimensional geometry, and justify their findings.

Students use number sense, estimation, models, drawings, manipulatives, and technology as they investigate problems involving geometric concepts.

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
26. Compare, contrast, name, and describe attributes (e.g., corner, side, straight, curved, number of sides) of shapes using concrete models [circle, rectangle (including square), rhombus, triangle] (G-1-E) (G-2-E) (G-4-E)	Mathematical Thinking at Grade 1 Investigation 1: Sessions 1–4 Quilt Squares and Block Towns Investigation 1: Sessions 1, 11–12 Investigation 2: Sessions 1–2, 4–10 Investigation 3: Sessions 1–5 Bigger, Smaller, Heavier, Taller Investigation 2: Sessions 2–7
27. Connect the informal language used for 3-dimensional shapes to their proper mathematical name (e.g., a ball is a sphere, a box is a rectangular prism, a can is a cylinder) (G-2-E)	Quilt Squares and Block Towns Investigation 1: Session 1 Investigation 2: Sessions 1–10 Investigation 3: Sessions 1–5
28. Determine if a shape has a line of symmetry by folding (G-2-E)	This expectation is addressed in Shapes Halves, and Symmetry in Grade 2.
29. Visualize, predict, and create new shapes by cutting apart and combining existing 2- and 3-dimensional shapes (G-3-E) (G-1-E)	Quilt Squares and Block Towns Investigation 1: Sessions 3–10 Investigation 2: Sessions 7–10 Investigation 3: Sessions 1–5
30. Identify congruent shapes (i.e., same size and shape) in a variety of positions and orientations (G-3-E) (G-2-E)	These activities provide opportunities to introduce this expectation. Quilt Squares and Block Towns Investigation 1: 2-D Shapes and Patterns: Sessions 11-12, 13-15
31. Draw line segments (G-5-E)	See Grade 2, How Long, How Far?

## Data Analysis, Probability, and Discrete Math

In problem-solving investigations, students discover trends, formulate conjectures regarding cause-and-effect relationships, and demonstrate critical thinking skills in order to make informed decisions.

Students use collection and organizational techniques, number sense, estimation, manipulatives, and technology as they investigate problems involving data.

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
32. Given a set of data, construct and read information from bar graphs and charts (D-1-E) (D-2-E)	Various representations of data are constructed and read in these activities. Mathematical Thinking at Grade 1 Investigation 5: Sessions 2–6 Survey Questions and Secret Rules Investigation 1: Sessions 1–6 Investigation 2: Sessions 1–6 Investigation 3: Sessions 1–3 Investigation 4: Sessions 1–5 Quilt Squares and Block Towns Investigation 1: Sessions 11–12 Bigger, Taller, Heavier, Smaller Investigation 2: Sessions 1–2 Investigation 3: Sessions 1–5 Classroom Routines: Exploring Data
33. Determine whether an object satisfies a simple logical classification rule (e.g., belongs and does not belong) (D-1-E)	Mathematical Thinking at Grade 1 Investigation 5: Session 2 Survey Questions and Secret Rules Investigation 1: Sessions 1–2 Investigation 2: Sessions 3–4 Classroom Routines: Exploring Data, Understanding Time and Changes
34. Appropriately use basic probability vocabulary (e.g., <i>more likely to happen/less likely to happen, always/never, same as</i> ) (D-5-E)	These activities provide opportunities to introduce this expectation. Mathematical Thinking at Grade 1 Investigation 5: Sessions 2, 3–4, 5–6



## Patterns, Relations, and Functions

In problem-solving investigations, students demonstrate an understanding of patterns, relations, and functions that represent and explain real-world situations.

Students use number sense, estimation, manipulatives, drawings, tables, graphs, formulas, and technology as they investigate problems involving patterns, relations, and functions.

GRADE LEVEL EXPECTATIONS	CORRELATION NOTATIONS
35. Identify, describe, and explain the patterns in repeating situations (adding the same number, e.g., 2, 5, 8, 11, or skip-counting) (P-1-E)	Mathematical Thinking at Grade 1 Investigation 3: Sessions 1–6 Investigation 4: Sessions 2–3, 4–6 Building Number Sense Investigation 3: Sessions 1–8 Investigation 4: Session 10 Number Games and Story Problems Investigation 2: Sessions 2, 6–9
36. Explain patterns created with concrete objects, numbers, shapes, and colors (P-2-E)	Mathematical Thinking at Grade 1 Investigation 3: Sessions 1–6 Investigation 3: Sessions 1–6 Investigation 4: Sessions 2–3, 5 Building Number Sense Investigation 3: Sessions 1–8 Investigation 4: Session 10 Survey Questions and Secret Rules Investigation 3: Sessions 2–3 Quilt Squares and Block Towers Investigation 1: Sessions 13–15 Number Games and Story Problems Investigation 2: Sessions 2, 6–9