DEPARTMENT of EDUCATION
Louisiana Believes

Practice Test Item Analysis
Grade 3

This Item Analysis is provided so that teachers, parents, and students may gain a better understanding of the Grade 3 iLEAP math test structure and the Common Core State Standards (CCSS) as applied to assessment. The table below is organized by practice test sequence number, CCSS, rationale for alignment, and connection to the practice test. The CCSS is the standard to which the item is aligned. The rationale for alignment explains an item's alignment to the standard listed. The language of the standards, any clarifications and/or tables offered by the CCSS, and the progression documents published by the University of Arizona were used when aligning items to the CCSS. The final column highlights specific qualities in each practice test item which adhere the rationale for alignment. The practice test can be found here, and a detailed explanation of assessment structure can be found here.

Sequence Number	CCSS	Rationale for Alignment	Connection to the Practice Test
1	3.NBT.A.3	Language of the standard: "Multiply one-digit whole numbers by multiples of 10 in the range 10–90."	Multiply 2×70.
2	3.NF.A.3c	Language of the standard: "Recognize fractions that are equivalent to whole numbers." Similar to example given in the standard.	Recognize that $\frac{2}{1}$ is equivalent to 2 using a number line.
3	3.MD.A.1	Language of the standard: "Solve word problems involving addition and subtraction of time intervals in minutes."	Add the time intervals 22 minutes + 7 minutes. Subtract the time interval 12 minutes from the previous sum.
4	3.OA.C.7	Language of the standard: "Fluently multiply and divide within 100."	Multiply 5×9.
5	3.NF.A.2a	Language of the standard: "Recognize that each part has size 1/*b*."	Recognize that the interval from X to Y is $\frac{1}{6}$ of a mile, using a number line.
6	3.NBT.A.2	Language of the standard: "Fluently add and subtract within 1000."	Subtract 342 – 184.
7	3.OA.A.4	Language of the standard: "Determine the unknown whole number in a multiplication or division equation relating three whole numbers." Similar to example given in the standard.	Given a division equation, determine that 8 is the unknown whole number.
8	3.NBT.A.3	Language of the standard: "Use strategies based on place value and properties of operations." Progression document *K-5, Number and Operations in Base Ten,* page 11.	Using place value and properties of operations, find an equivalent expression to multiply 30×5.

9	3.NF.A.3d	Language of the standard: "Compare two fractions with the same numerator or the same denominator by reasoning about their size. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions."	Compare fractions with the same numerator or the same denominator using symbols. The last answer choice compares different numerators and denominators. It is within grade level for students to generate simple equivalent fractions.
10	3.OA.C.7	Language of the standard: "Fluently multiply and divide within 100."	Multiply 9×7. .
11	3.NF.A.3c	Language of the standard: "Recognize fractions that are equivalent to whole numbers."	Recognize $\frac{3}{3}$ as equivalent to 1.
12	3.OA.A.4	Language of the standard: "Determine the unknown whole number in a multiplication or division equation relating three whole numbers." Similar to example given in the standard.	Given a multiplication equation, determine that 6 is the unknown whole number.
13	3.OA.D.8	Language of the standard: "Solve two-step word problems using the four operations; represent these problems using equations with a letter standing for the unknown quantity;" and footnote 3 on page 23.	Represent the word problem with the equation $18 \div 3 + 2 = n$.
14	3.MD.C.7	Language of the standard: "Relate area to the operations of multiplication and addition. b. Represent whole-number products as rectangular areas in mathematical reasoning." Progression document *K-5, Geometric Measurement*, page 17.	Recognize the product 24 as the area of an 8 by 3 rectangle.
15	3.OA.B.6	Language of the standard: "Understand division as an unknown-factor problem." Progression document *K-5, Operations and Algebraic Thinking*, pages 22-25.	Given a division equation with an unknown divisor, recognize the corresponding multiplication equation with an unknown factor.
16	3.NBT.A.1	Language of the standard: "Round whole numbers to the nearest 10 or 100." Progression document *K-5, Number and Operations in Base Ten*, page 11.	Round182, 439, and 217 to the nearest hundred. Identify the expression showing the sum of the correctly rounded numbers.

17	3.OA.D.9	Language of the standard: "Identify arithmetic patterns (including patterns in the addition table or multiplication table)." Progression document *K-5, Operations and Algebraic Thinking*, page 26.	Identify the pattern in the table as adding 2 pounds each month.
18	3.NF.A.2b	Language of the standard: "Represent a fraction *a*/*b* on a number line diagram by marking off *a* lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line." Progression document *3-5, Number and Operations—Fractions*, page 3.	Recognize that $\frac{6}{8}$ is located between points A and B on the number line. Students may need to further partition the number line in order to position the fraction.
19	3.NBT.A.2	Language of the standard: "Fluently add and subtract within 1000."	Add 389 + 116.
20	3.NF.A.3b	Language of the standard: "Recognize and generate simple equivalent fractions."	Recognize the equivalent fractions represented in the visual fraction models.
21	3.OA.B.5	Language of the standard: "Apply properties of operations as strategies to multiply and divide," and footnote 2 on page 23. Similar to example given in the standard.	Apply the associative property of multiplication as a strategy to multiply the product of 48 by 2.
22	3.NF.A.3a	Language of the standard: "Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line."	Recognize that the fractions are equivalent because they represent the same distance from 0 and 1.
23	3.OA.C.7	Language of the standard: "Fluently multiply and divide within 100."	Divide 72 ÷ 8.
24	3.NF.A.2b	Language of the standard: "Represent a fraction *a*/*b* on a number line diagram." Progression document *3-5, Number and Operations—Fractions*, page 3.	Identify which point represents $\frac{2}{8}$ on the number line.
25	3.NF.A.1	Language of the standard: "Understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*."	Recognize the 7 shaded blocks in the picture as 7 parts of size $\frac{1}{12}$ to form $\frac{7}{12}$.

26	3.OA.A.1	Language of the standard: "Interpret products of whole numbers." CCSS Table 2, page 89. Similar to example given in the standard.	Interpret the expression 3×4 as 3 people each having 4 pears. The product would answer the question of how many total pears they had.
27	3.MD.A.2	Language of the standard: "Measure and estimate masses of objects using standard units of grams." Similar to example given in the standard.	Estimate the mass of the gummy bears shown in the picture of the scale.
28	3.MD.D.8	Language of the standard: "Solve real world and mathematical problems involving perimeters of polygons."	Given a side length of the larger square, recognize the side length of each small square as 1 inch. Calculate the perimeter of the small square using this side length.
29	3.NF.A.2b	Language of the standard: "Represent a fraction *a*/*b* on a number line diagram." Progression document *3-5, Number and Operations—Fractions*, page 3.	Identify which number line has the proper placement of $\frac{5}{6}$.
30	3.NF.A.3d	Language of the standard: "Compare two fractions with the same numerator by reasoning about their size. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions." Progression document *3-5, Numbers and Operations—Fractions*, page 4.	Compare two fractions with the same numerator using symbols, by reasoning about the size of their denominators.
31	3.G.A.1	Language of the standard: "Understand that shapes in different categories may share attributes." Progression document *K-6, Geometry*, page 13.	Given two categories with defined attributes, identify the shape that does not fit in either category.
32	3.OA.D.9	Language of the standard: "Identify arithmetic patterns (including patterns in the addition table or multiplication table)." Progression document *K-5, Operations and Algebraic Thinking*, page 26.	Identify the pattern adding 17 to each term to generate the next term.
33	3.MD.C.5a	Language of the standard: "A square can be used to measure area."	Identify the square as the appropriate figure to measure the area of the drawing shown.

34	3.NF.A.1	Language of the standard: "Understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*."	Identify the visual model representing $\frac{3}{4}$ as 3 glasses with straws. Each glass is $\frac{1}{4}$ of the set of glasses.
35	3.G.A.1	Language of the standard: "Understand that shapes in different categories may share attributes." Progression document *K-6, Geometry*, page 13.	Recognize that a square and a rectangle are always equiangular; that a triangle is sometimes equiangular, but has only three angles; and that a parallelogram is sometimes equiangular.
36	3.OA.A.2	Language of the standard: "Interpret whole-number quotients of whole numbers." CCSS Table 2, page 89. Similar to example given in the standard.	Interpret the number of boats used as the quotient of 25 and 5.
37	3.MD.C.7d	Language of the standard: "Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems."	Find the area of the figure by decomposing it into two rectangles. Calculate the area of each rectangle and combine.
38	3.MD.B.4	Language of the standard: "Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters."	Measure the three pencils shown. Using the three pencil measures and the three given measures, identify the line plot that correctly shows the measurement data.
39	3.NF.A.1	Language of the standard: "Understand a fraction *a/b* as the quantity formed by *a* parts of size 1/*b*."	Identify the fraction shown in the visual model as 4 parts of $\frac{1}{6}$ to make $\frac{4}{6}$.
40	3.G.A.2	Language of the standard: "Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole."	Identify the circle that shows 1 of six equal areas.
41	3.MD.C.6	Language of the standard: "Measure areas by counting unit squares."	Measure the area of the blank squares by counting them.
42	3.MD.D.8	Language of the standard: "Solve real world and mathematical problems involving perimeters of polygons."	Calculate the perimeter of the rectangle shown.

43	3.OA.D.8	Language of the standard: "Solve two-step word problems using the four operations."	Add 4 + 2. Multiply that sum by 3.
44	3.G.A.1	Language of the standard: "Understand that shapes in different categories may share attributes." Progression document *K-6, Geometry*, page 13.	Recognize that a rhombus and a square are both quadrilaterals, and that a rhombus is a square if all the angles are 90°. Identify a rhombus that is not a square.
45	3.OA.B.5	Language of the standard: "Apply properties of operations as strategies to multiply and divide;" and CCSS footnote 2 on page 23 Similar to example given in the standard.	Identify the array that represents the distributive property as applied to the given expression $(3 + 4) \times 5$.
46	3.MD.C.6	Language of the standard: "Measure areas by counting unit squares."	Measure the area of the quilt by counting the squares.
47	3.NF.A.1	Language of the standard: "Understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*."	Identify which visual model shows approximately $\frac{2}{3}$ formed by 2 parts each of size $\frac{1}{3}$.
48	3.MD.B.3	Language of the standard: "Solve one-step "how many more" problems using information presented in scaled bar graphs."	Using the bar graph, determine the number of hot lunches bought on Monday, 120, and Tuesday, 105. Find the difference to answer "how many more."
49	3.NF.A.2b	Language of the standard: "Represent a fraction *a*/*b* on a number line diagram by marking off *a* lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line." Progression document *3-5, Number and Operations—Fractions*, page 3.	Identify the number line showing $\frac{5}{8}$ of the sections from 0 to 1 and pointing to the correct placement of $\frac{5}{8}$ on the number line.
50	3.G.A.2	Language of the standard: "Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole."	Identify the square with $\frac{1}{3}$ of its area shaded.

51	3.OA.A.3	Language of the standard: “Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.”	Use division to create 6 equal groups of 4 involving an array. Identify a different grouping set to accommodate an increase in the number of groups when the amount to be grouped remains the same.