Grade 3 Mathematics

This document provides correlations between the 2023 Indiana Academic Standards (IAS) and the Common Core State Standards (CCSS) for easy reference. This correlation guide is intended to help support conversations regarding state and national standards and may be used as one of many tools to help inform a variety of local decisions (e.g., selection of high-quality curricular materials, curriculum maps).

The 2023 Indiana Academic Standards resulted from the standards streamlining process required by Indiana Code (IC) 20-31-3-1(c-d) and were adopted by the Indiana State Board of Education in June 2023. Standards designated as essential (E) for student mastery by the end of the grade level are shaded in gray and all standards were renumbered to avoid gaps in sequencing.

2023 Indiana Academic Standard		Common Core State Standard		Differences Between 2023 IAS and CCSS
Domain: Number Sense				
Number	**Text**	**Number**	**Text**	**Description**
3.NS.1	Read and write whole numbers up to 10,000. Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 10,000.			
3.NS.2	Model unit fractions as the quantity formed by 1 part when a whole is partitioned into equal parts; model non-unit fractions as the quantity formed by iterations of unit fractions. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.] (E)	**3.NF.1**	Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by *a* parts of size 1/*b*.	IAS requires students to model fractions and specifies fractions with denominators 2, 3, 4, 6, and 8.

3.NS.3	Model a non-unit fraction on a number line by marking equal lengths from 0, identifying each part as a unit fraction and locating the non-unit fraction as the endpoint on the number line. (E)	**3.NF.2b**	Represent a fraction a/b on a number line diagram by marking off 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.	*No content differences identified.*
3.NS.4	Use fraction models to represent two simple equivalent fractions with attention to how the number and size of the parts differ even though the quantities are the same. Use this principle to generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3).	**3.NF.3b**	Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.	*No content differences identified.*
3.NS.5	Compare two fractions with the same numerator or the same denominator by reasoning about their size based on the same whole. Record the results of comparisons with the symbols > , = , or < , and justify the conclusions (e.g., by using a visual fraction model). (E)	**3.NF.3d**	Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	*No content differences identified.*
3.NS.6	Use place value understanding to round two- and three-digit whole numbers to the nearest 10 or 100.	**3.NBT.1**	Use place value understanding to round whole numbers to the nearest 10 or 100.	*No content differences identified.*

2023 Indiana Academic Standard		Common Core State Standard		Differences Between 2023 IAS and CCSS
Domain: Computation and Algebraic Thinking				
Number	**Text**	**Number**	**Text**	**Description**
3.CA.1	Fluently add and subtract multi-digit whole numbers using strategies and algorithms based on place value, properties of operations, and relationships between addition and subtraction.	**3.NBT.2**	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	IAS does not limit the addition and subtraction threshold to 1000.
3.CA.2	Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). (E)	**3.OA.8**	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	IAS places emphasis on solving real-world problems. CCSS includes all four operations and requires students to assess the reasonableness of answers.
3.CA.3	Model the concept of multiplication of whole numbers using equal-sized groups, arrays, area models, and equal intervals on a number line. Model the properties of 0 and 1 in multiplication using objects or drawings. (E)	**3.OA.1**	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.	IAS requires students to use specific models to represent the concept of multiplication and to model the properties of 0 and 1 in multiplication.

3.CA.4	Model the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Model the properties of 0 and 1 in division using objects or drawings. (E)	**3.OA.2**	Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.	IAS requires students to use specific models to represent the concept of division and to model the properties of 0 and 1 in division.
		3.OA.6	Understand division as an unknown-factor problem.	
3.CA.5	Multiply and divide within 100 using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. (E)	**3.OA.5**	Apply properties of operations as strategies to multiply and divide.	*No content differences identified.*
		3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.	
3.CA.6	Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.			
3.CA.7	Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a	**3.OA.3**	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the	IAS places emphasis on solving real-world problems.

	symbol for the unknown number to represent the problem). (E)		unknown number to represent the problem.	
3.CA.8	Create, extend, and give an appropriate rule for number patterns within 100 (including patterns in the addition table or multiplication table).	**3.OA.9**	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	IAS requires students to create and extend a rule for number patterns within 100.

2023 Indiana Academic Standard		Common Core State Standard		Differences Between 2023 IAS and CCSS
Domain: Geometry				
Number	**Text**	**Number**	**Text**	**Description**
3.G.1	Define, identify, and classify four-sided shapes such as rhombuses, rectangles, and squares as quadrilaterals. Identify and draw examples and non-examples of quadrilaterals.	**3.G.1**	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g.,quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	*No content differences identified.*

3.G.2	Identify, describe, and draw points, lines, and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.	**4.G.1**	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	IAS requires students to use appropriate tools to identify, describe, and draw points, lines, and line segments. CCSS includes rays, angles, perpendicular lines and parallel lines, skills that IAS addresses in grade four.
3.G.3	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (i.e., 1/2, 1/3, 1/4, 1/6, 1/8).	**3.G.2**	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	IAS specifies which unit fractions to include.
2023 Indiana Academic Standard		**Common Core State Standard**		**Differences Between 2023 IAS and CCSS**
Domain: Measurement				
Number	**Text**	**Number**	**Text**	**Description**
3.M.1	Estimate and measure the mass of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (l). Add, subtract, multiply, or divide to solve one-step, real-world problems involving masses or volumes that are given in the same units or obtained through investigation. (E)	**3.MD.2**	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	IAS places emphasis on solving real-world problems and includes quarts (qt), and gallons (gal).

3.M.2	Choose and use appropriate units and tools to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.			
3.M.3	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes (e.g., by representing the problem on a number line diagram). (E)	**3.MD.1**	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	*No content differences identified.*
3.M.4	Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the $ symbol in the form of dollars and cents (e.g., $4.59). Solve real-world problems to determine whether there is enough money to make a purchase. (E)			
3.M.5	Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the	**3.MD.5a**	A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	CCSS requires students to solve real-world problems and includes polygons other than rectangles.

	side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters. (E)	**3.MD.5b**	A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.	
		3.MD.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	
		3.MD.7a	Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	
		3.MD.7b	Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	
		3.MD.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with	

			the same area and different perimeters.	
3.M.6	Find perimeters of polygons given the side lengths or given an unknown side length.	**3.MD.8**	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	CCSS includes solving real-world problems. IAS addresses exhibiting rectangles with the same perimeter and different areas, or vice versa, in 3.M.5.
2023 Indiana Academic Standard		**Common Core State Standard**		**Differences Between 2023 IAS and CCSS**
Domain: Data Analysis				
Number	**Text**	**Number**	**Text**	**Description**
3.DA.1	Collect, organize, and graph data from observations, surveys, and experiments using scaled bar graphs and pictographs. Solve real-world problems by analyzing and interpreting the data using grade-level computation and comparison strategies. (E)	**3.MD.3**	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	IAS requires students to collect, organize and graph data collected through observations, surveys and experiments and places emphasis on solving real-world problems by analyzing and interpreting the data.

Mathematics Process Standards

2023 Indiana Academic Standard	Common Core State Standard	Differences Between 2023 IAS and CCSS
PS.1: Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	**MP.1: Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient	IAS summarizes what mathematically proficient students can do, while CCSS gives examples of what mathematically proficient students might do at different grade levels.

	students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.	
PS.2: Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	**MP.2: Reason abstractly and quantitatively.** Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	*No content differences identified.*

PS.3: Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	**MP.3: Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	IAS explains that mathematically proficient students can justify statements that are true always, sometimes, or never. IAS also states that mathematically proficient students participate and collaborate in a mathematics community. CCSS gives examples of what mathematically proficient students might do at different grade levels.

PS.4: Model with mathematics. Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	**MP.4: Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	IAS summarizes what mathematically proficient students can do, while CCSS gives examples of what mathematically proficient students might do at different grade levels.

PS.5: Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.	**MP.5: Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	IAS summarizes what mathematically proficient students can do, while CCSS gives examples of what mathematically proficient students might do at different grade levels.

PS.6: Attend to precision. Mathematically proficient students communicate precisely to others. They use clear definitions, including precision. correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.	**MP.6: Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	IAS summarizes what mathematically proficient students can do, while CCSS gives examples of what mathematically proficient students might do at different grade levels.
PS.7: Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.	**MPS.7: Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7 × 8 equals the well remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a	IAS summarizes what mathematically proficient students can do, while CCSS gives examples of what mathematically proficient students might do at different grade levels.

	geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.	
PS.8: Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.	**MP.8: Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the	IAS summarizes what mathematically proficient students can do, while CCSS gives examples of what mathematically proficient students might do at different grade levels.

	details. They continually evaluate the reasonableness of their intermediate results.	