## Idaho Extended Standards Draft

## Extended Content Indicators

## Grade 4

## Mathematics

Standard 1: Number and Operation - Students in Grade 4 read, write, compare, and order whole numbers to $1,000,000$ and commonly used fractions with pictorial representations. Students identify and apply place value in whole numbers. Students add and subtract whole numbers, fractions with like denominators that do not require simplification, and decimals using money. Students recall multiplication facts through ten, multiply up to two-digit by twodigit whole numbers, and divide whole numbers by one-digit divisors. Students estimate to predict computation results and to evaluate the reasonableness of the answer.

Extended Standard 1: Students in Grade 4 read, write, compare, and order whole numbers and identify commonly used fractions with pictorial representations. Students identify place value in whole numbers. With the use of a calculator, abacus, or manipulatives, students add and subtract whole numbers, simple, common fractions with like denominators, and common decimals using money. Students recognize multiplication through the addition of repeated sets of whole numbers, and division by separating sets into equal parts. Students estimate size of quantity to predict computation results and then determine reasonableness of the answer.

| Topic | GR | Goals | Objectives | Essence | Extended Content Indicators |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 4.M.1.1 | Understand and use numbers. | 4.M.1.1.1 Read, write, compare, and order whole numbers to 100,000. (297.01.a) |  | 4.M.1.1.1A <br> Communicate and demonstrate whole numbers in order up to 50 , using a number line or chart when necessary. |
|  |  |  | 4.M.1.1.2 Identify and apply place value in whole numbers. (297.01.b) |  | 4.M.1.1.2 A <br> Identify and apply place value through 50 . |
|  |  |  | 4.M.1.1.3 Count the value of a collection of bills and coins up to $\$ 100.00$. (297.01.c) |  | 4.M.1.1.3 A <br> Count the value of a collection of pennies nickels and dimes up do $\$ 1.00$ |
|  |  |  | 4.M.1.1.4 Read, write, compare, and order commonly used fractions with pictorial representations. (297.01.d) |  | 4.M.1.1.4A <br> Communicate and demonstrate commonly used fractions with symbolic representations. |
|  |  |  | 4.M.1.1.5 Use decimal numbers with money. (297.01.e) |  | 4.M.1.1.5.A <br> The student will recognize the value of common coins and the dollar. |
|  |  |  | 4.M.1.1.6 Select strategies appropriate for solving a problem. (298.01.a) |  | 4.M.1.1.6A <br> Choose appropriate application to solve a problem. |
|  |  |  | 4.M.1.1.7 Use appropriate vocabulary. (297.01.f) |  | 4.M.1.1.7A <br> Recognize appropriate vocabulary. |

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Extended Standard 1: Students in Grade 4 read, write, compare, and order whole numbers and identify commonly used fractions with pictorial representations. Students identify place value in whole numbers. With the use of a calculator, abacus, or manipulatives, students add and subtract whole numbers, simple, common fractions with like denominators, and common decimals using money. Students recognize multiplication through the addition of repeated sets of whole numbers, and division by separating sets into equal parts. Students estimate size of quantity to predict computation results and then determine reasonableness of the answer.

| Topic | Gr | Goal | Objectives | Essence | Extended Content Indicators |
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|  | 4.M.1.2 | Perform computations accurately. | 4.M.1.2.1 Recall multiplication facts through $10 \times 10$. (297.02.e) |  | 4.M.1.2.1A <br> Explore single digit multiplication for 1 's - 5's through symbolic concrete systems |
|  |  |  | 4.M.1.2.2 Add and subtract whole numbers. (297.02.a) |  | 4.M.1.2.2 A <br> Add and subtract whole numbers, with or without the use of manipulatives. |
|  |  |  | 4.M.1.2.3 Multiply up to twodigit by two-digit whole numbers and divide whole numbers by one-digit divisors. (297.02.b) |  | 4.M.1.2.3 A <br> Explore multiplication through the manipulation of adding repeated sets and division by separating sets into equal parts. |
|  |  |  | 4.M.1.2.4 Add and subtract fractions with like denominators that do not require simplification. (297.02.c) |  | 4.M.1.2.4 A <br> Identify that "a whole" can be divided to create "smaller pieces" (fractions) and the pieces can be added to create a whole again. |
|  |  |  | 4.M.1.2.5 Add and subtract decimals using money. (297.02.d) |  | 4.M.1.2.5 A <br> Demonstrate knowledge to add a collection of dollars using the decimal point symbol |
|  |  |  | 4.M.1.2.6 Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three. (297.02.f) |  | 4.M.1.2.6 A <br> Choose concrete objects or symbolic systems to solve addition and subtractions problems |


|  |  |  | 4.M.1.2.7 Select and use <br> appropriate operations to <br> solve word problems and <br> show or explain work. <br> (298.01.b) | 4.M.1.2.7A <br> Select appropriate operations to solve one step addition or subtraction word or <br> symbolic problems |
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|  |  |  | 4.M.1.2.8 Use appropriate <br> vocabulary. (297.02.g) | 4.M.1.2.8A <br> Recognize appropriate vocabulary. |

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Extended Standard 1: Students in Grade 4 read, write, compare, and order whole numbers and identify commonly used fractions with pictorial representations. Students identify place value in whole numbers. With the use of a calculator, abacus, or manipulatives, students add and subtract whole numbers, simple, common fractions with like denominators, and common decimals using money. Students recognize multiplication through the addition of repeated sets of whole numbers, and division by separating sets into equal parts. Students estimate size of quantity to predict computation results and then determine reasonableness of the answer.

| Topic | Gr | Goal | Objectives | Essence |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 4.M.1.3 | Estimate and judge <br> reasonableness of results. | 4.M.1.3.1 Estimate to predict <br> computation results. <br> (297.03.a) | E.M.1.3.1A <br> Estimate to predict sums and differences |  |
|  |  |  | 4.M.1.3.2 Use estimation to <br> evaluate the reasonableness of <br> an answer. (297.03.b) | 4.M.1.3.2 A <br> Use estimation skills across daily living activities. |  |
|  |  | 4.M.1.3.3 Investigate the use <br> of a four-function calculator <br> to solve complex grade-level <br> problems. (298.03.a) | 4.M.1.3.3A <br> Investigate the use of a calculator to solve problems. |  |  |
|  |  | 4.M.1.3.4 Use appropriate <br> vocabulary. (297.03.c) | 4.M.1.3.4 A <br> Recognize appropriate vocabulary. |  |  |

Standard 2: Concepts and Principles of Measurement - Students in Grade 4 select and use appropriate units and tools to make the formal measurements of time, length, temperature, weight, and capacity in both systems. Estimate measurement in real-world problems using standard units. Students convert units of length and time within the U. S. Customary system. Students tell time to the nearest minute using digital and analog clocks.

Extended Standard 2: Students in Grade 4 use appropriate units and tools to make the formal measurements of time, length, temperature, and weight. Estimate measurement in real-world problems using standard or nonstandard units. Students match units of length and time within the U.S. Customary system. Students tell time using digital and analog clocks and associating daily routines to the time of the day.

| Topic | Gr | Goal | Objectives | Essence | Extended Content Indicators |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 4.M.2.1 | Understand and use U.S. customary and metric measurements. | 4.M.2.1.1 Select and use appropriate units and tools to make the formal measurements of length, temperature, and weight in both systems. (299.01.a) |  | 4.M.2.1.1A <br> Identify the standard tools to make formal measurements of length, time, temperature, and weight. |
|  |  |  | 4.M.2.1.2 Estimate length, time, weight, and temperature in real-world problems using standard units. (299.01.b) |  | 4.M.2.1.2 A <br> Estimate length, time, weight, and temperature in real-world problems. |
|  |  |  | 4.M.2.1.3 Tell time to the nearest minute using digital and analog clocks. (299.01.e) |  | 4.M.2.1.3A <br> Match time to a specific activity (e.g. bell or board schedule) |
|  |  |  | 4.M.2.1.4 Solve real-world problems related to elapsed time. (299.01.f) |  | 4.M.2.1.4 A <br> Identify real-world problems related to time. |
|  |  |  | 4.M.2.1.5 Convert units of length and time within the U . <br> S. Customary system. (299.01.c) |  | 4.M.2.1.5A <br> Use a unit of measurement within the U.S. customary system or within the metric system. |
|  |  |  | 4.M.2.1.6 State that there are 365 days in a year and 52 weeks in a year. |  | 4.M.2.1.6 A <br> Identify how months of the year are presented in a calendar. |
|  |  |  | 4.M.2.1.7 Recall length and volume (capacity) equivalences involving inches, feet, yards, cups, pints, quarts, and gallons in the U.S. Customary system. |  | 4.M.2.1.7A <br> Match simple, equivalent units of measurement in the U.S. Customary system. |


|  |  |  | $4 . M .2 .1 .8$ Use appropriate <br> vocabulary. (299.01.g) | 4.M.2.1.8A <br> Recognize appropriate vocabulary. |
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Standard 2: Concepts and Principles of Measurement - Students in Grade 4 select and use appropriate units and tools to make the formal measurements of time, length, temperature, weight, and capacity in both systems. Estimate measurement in real-world problems using standard units. Students convert units of length and time within the U. S. Customary system. Students tell time to the nearest minute using digital and analog clocks.

Extended Standard 2: Students in Grade 4 use appropriate units and tools to make the formal measurements of time, length, temperature, and weight. Estimate measurement in real-world problems using standard or nonstandard units. Students match units of length and time within the U. S. Customary system. Students tell time using digital and analog clocks and associating daily routines to the time of the day.

| Topic | Gr | Goal | Objectives | Essence | Extended Content Indicators |
| :--- | :---: | :--- | :--- | :--- | :--- |
|  | $4 . M .2 .2$ | Apply the concepts of rates, <br> ratios, and proportions. | No objectives at this grade <br> level. |  | No objectives at this grade level. |
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Standard 2: Concepts and Principles of Measurement - Students in Grade 4 select and use appropriate units and tools to make the formal measurements of time, length, temperature, weight, and capacity in both systems. Estimate measurement in real-world problems using standard units. Students convert units of length and time within the U. S. Customary system. Students tell time to the nearest minute using digital and analog clocks.

Extended Standard 2: Students in Grade 4 use appropriate units and tools to make the formal measurements of time, length, temperature, and weight. Estimate measurement in real-world problems using standard or nonstandard units. Students match units of length and time within the U. S. Customary system. Students tell time using digital and analog clocks and associating daily routines to the time of the day.

| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
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|  | 4. M.2.3 | Apply dimensional analysis. | No objectives at this grade <br> level. |  | No objectives at this grade level. |
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## Standard 3: Concepts and Language of Algebra and Functions - Students

 in Grade 4 write a division problem using a bracket ( $\neg$ ), the division symbol ( $\div$ ), and as a fraction. Students write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. Students read and use the symbols of " $<$," " $>$," and " $=$ " to express relationships with numbers through $1,000,000$. Students use the identity and zero properties of multiplication and solve missing factor equations. Students identify the rule for a pattern using whole numbers and addition and then extend the pattern.Extended Standard 3: Students in Grade 4 express a division problem using manipulatives and/or common division symbols. Students express basic number sentences using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. Students identify and use the symbols of "<," " $>$," and "=" to express relationships with whole numbers. Students use the identity and zero properties of multiplication to solve problems. Students identify the rule for a pattern and extend the pattern.

| Topic | Gr | Goal | Objectives | Essence | Extended Content Indicators |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 4.M.3.1 | Use algebraic symbolism as a tool to represent mathematical relationships. | 4.M.3.1.1 Write a division problem using a bracket ( $\neg$ ) and/or the division symbol ( $\div$ ). (300.01.a) |  | 4.M.3.1.1 A <br> Express the concept of division using concrete objects or pictures. |
|  |  |  | 4.M.3.1.2 Write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. (300.01.b) |  | 4.M.3.1.2A <br> Use concrete or symbolic system with a one step addition or subtraction real life problem that represents an unknown number. |
|  |  |  | 4.M.3.1.3 Show the relationship between multiplication and division using fact families. |  | 4.M.3.1.3A <br> Show the relationship between addition and subtraction in fact families using concrete objects or pictures. |
|  |  |  | 4.M.3.1.4 Read and use symbols of "<," " $>$," and " $=$ " to express relationships with numbers through $1,000,000$. (300.01.c) |  | 4.M.3.1.4 A <br> Compare objects or pictures using the vocabulary or symbols for (<,>,=) to express relationships with quantity. |

## Standard 3: Concepts and Language of Algebra and Functions - Students in Grade

4 write a division problem using a bracket ( $\neg)$, the division symbol ( $\div$ ), and as a fraction. Students write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. Students read and use the symbols of " $<$," " $>$," and " $=$ " to express relationships with numbers through $1,000,000$. Students use the identity and zero properties of multiplication and solve missing factor equations. Students identify the rule for a pattern using whole numbers and addition and then extend the pattern.

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| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
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|  | $4 . M .3 .2$ | Evaluate algebraic expressions. | 4.M.3.2.1 Use the identity and <br> zero properties of <br> multiplication. | 4.M.3.2.1 A <br> Solve multiplication problems with the identity and zero property, with concrete objects if <br> necessary. |  |

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|  | 4. M.3.3 | Solve algebraic equations and <br> inequalities. | 4.M.3.3.1 Solve missing <br> factor equations. (300.03.a) |  | 4.M.3.3.1A <br> Solve missing items or addends equations with concrete objects or symbols. |

## Standard 3: Concepts and Language of Algebra and Functions - Students in Grade

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|  | 4.M.3.4 | Understand the concept of <br> functions. | 4.M.3.4.1 Identify the rule <br> (function) for a pattern using <br> whole numbers and addition <br> and then extend the pattern. <br> (303.01.a) | 4.M.3.4.1.A <br> Copy a pattern using whole numbers and the 1+ rule and then extend the pattern. |  |
|  |  | 4.M.3.4.2 Use appropriate <br> vocabulary. (303.01.c) |  | 4.M.3.4.2A <br> Recognize appropriate vocabulary. |  |

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| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
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|  | 4.M.3.5 | Represent equations, <br> inequalities and functions in a <br> variety of formats. | No objectives at this grade <br> level. | No objectives at this grade level. |  |
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## Standard 3: Concepts and Language of Algebra and Functions - Students in Grade

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| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
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|  | 4. M.3.6 | Apply functions to a variety of <br> problems. | No objectives at this grade <br> level. | No objectives at this grade level. |  |
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Standard 4: Concepts and Principles of Geometry - Students in Grade 4 identify, compare, and analyze attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify multiple lines of symmetry in twodimensional shapes and students discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. Students predict the results of sliding and flipping two-dimensional shapes.

Extended Standard 4: Students in Grade 4 identify attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify a line of symmetry in two-dimensional shapes and students recognize perimeters and areas of rectangles and squares, using concrete objects. Students recognize the results of sliding and flipping twodimensional shapes.

| Topic | Gr | Goal | Objective | Essence |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 4.M.4.1 | Apply concepts of size, shape, <br> and spatial relationships. | 4.M.4.1.1 Identify, compare, <br> and analyze attributes of two- <br> and three- dimensional <br> shapes, including parallel, <br> intersecting, and <br> perpendicular lines, and <br> develop vocabulary to <br> describe the attributes. <br> (301.01.a) |  | 4.M.4.1.1.A <br> Identify, parallel, intersecting and perpendicular lines, and develop vocabulary to describe the <br> attributes. |
|  |  |  | 4.M.4.1.2 Predict the results <br> of sliding and flipping two- <br> dimensional shapes. <br> (301.01.d) |  | 4.M.4.1.2.A <br> Recognize the results of sliding and flipping two-dimensional shapes. |
|  |  |  | 4.M.4.1.3 Identify multiple <br> lines of symmetry in two- <br> dimensional shapes. |  | 4.M.4.1.3.A <br> Identify a line of symmetry in two-dimensional shapes. |
|  |  |  | 4.M.4.1.4 Discuss perimeters <br> of polygons, and areas and <br> perimeters of rectangles and <br> squares, using concrete <br> objects. (301.01.c) |  | 4.M.4.1.4.A <br> Recognize perimeters and areas of rectangles and squares, using concrete objects. |

Standard 4: Concepts and Principles of Geometry - Students in Grade 4 identify, compare, and analyze attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify multiple lines of symmetry in twodimensional shapes and students discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. Students predict the results of sliding and flipping two-dimensional shapes.

Extended Standard 4: Students in Grade 4 identify attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify a line of symmetry in two-dimensional shapes and students recognize perimeters and areas of rectangles and squares, using concrete objects. Students recognize the results of sliding and flipping twodimensional shapes.

| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
| :--- | :---: | :--- | :--- | :--- | :--- |
|  | $4 . \mathrm{M.4.2}$ | Apply the geometry of right <br> triangles. | No objectives at this grade <br> level. |  | No objectives at this grade level. |
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Standard 4: Concepts and Principles of Geometry - Students in Grade 4 identify, compare, and analyze attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify multiple lines of symmetry in twodimensional shapes and students discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. Students predict the results of sliding and flipping two-dimensional shapes.

Extended Standard 4: Students in Grade 4 identify attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify a line of symmetry in two-dimensional shapes and students recognize perimeters and areas of rectangles and squares, using concrete objects. Students recognize the results of sliding and flipping twodimensional shapes.

| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
| :--- | :---: | :--- | :--- | :--- | :--- |
|  | $4 . M .4 .3$ | Apply graphing in two <br> dimensions. | 4.M.4.3.1 Use ordered pairs <br> to identify the position of a <br> point in the first quadrant on a <br> coordinate grid. | 4.M.4.3.1.A <br> Identify the point of final destination give directions for movement using 1 to 5 on a vertical <br> positive number line. |  |

Standard 5: Data Analysis, Probability, and Statistics - Students in Grade 4 collect, order, and display data in appropriate notation in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students determine a mode of a set of whole numbers.

Extended Standard 5: Students in Grade 4 collect, identify, or display data in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students identify the mode of a set of whole numbers using manipulatives.

| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
| :--- | :---: | :--- | :--- | :--- | :--- |
|  | $4 . \mathrm{M} .5 .1$ | Understand data analysis. | 4.M.5.1.1 Read and interpret <br> simple tables, charts, bar <br> graphs, and line graphs. <br> (302.01.a) |  | 4.M.5.1.1.A <br> Identify data in simple line graph, bar graphs, or circle graph. |
|  |  |  | 4.M.5.1.2 Use appropriate <br> vocabulary. (302.01.c) |  | 4.M.5.1.2A <br> Recognize appropriate vocabulary. |

Standard 5: Data Analysis, Probability, and Statistics - Students in Grade 4 collect, order, and display data in appropriate notation in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students determine a mode of a set of whole numbers.

Extended Standard 5: Students in Grade 4 collect, identify, or display data in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students identify the mode of a set of whole numbers using manipulatives.

| Topic | Gr | Goal | Objective | Essence |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 4. M.5.2 | Collect, organize, and display <br> data. | 4.M.5.2.1 Collect, organize, <br> and display data in tables and <br> charts to answer a question. <br> (302.02.a) |  | Extended Content Indicators |
|  |  |  | 4.M.5.5.2.1.A <br> Organize data in a table or chart to answer a question. <br> bar graph using appropriate <br> notation such as a title, axes <br> labels, and reasonable scales. <br> (302.02.a) |  | 4.M.5.2.2.A <br> Display data in a bar graph using a title and reasonable scales. |

Standard 5: Data Analysis, Probability, and Statistics - Students in Grade 4 collect, order, and display data in appropriate notation in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students determine a mode of a set of whole numbers.

Extended Standard 5: Students in Grade 4 collect, identify, or display data in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students identify the mode of a set of whole numbers using manipulatives.

| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
| :--- | :---: | :--- | :--- | :--- | :--- |
|  | 4. M.5.3 | Apply simple statistical <br> measurements. | 4.M.5.3.1 Find the mode of a <br> simple set of whole number <br> data. | 4.M.5.3.1.A <br> Find the mode of a simple set of whole number data using manipulatives when necessary. |  |

Standard 5: Data Analysis, Probability, and Statistics - Students in Grade 4 collect, order, and display data in appropriate notation in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students determine a mode of a set of whole numbers.

Extended Standard 5: Students in Grade 4 collect, identify, or display data in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students identify the mode of a set of whole numbers using manipulatives.

| Topic | Gr | Goal | Objective | Essence |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | $4 . M .5 .4$ | Understand basic concepts of <br> probability. | 4.M.5.4.1 Predict the results <br> of simple probability <br> experiments using coins or <br> spinners (e.g., 3 out of 6 <br> choices). (302.04.a) | 4.M.5.4.1.A <br> Predict the results of simple probability experiments using coins or spinners (e.g., 3 out of 6 <br> choices). |  |

Standard 5: Data Analysis, Probability, and Statistics - Students in Grade 4 collect, order, and display data in appropriate notation in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students determine a mode of a set of whole numbers.

Extended Standard 5: Students in Grade 4 collect, identify, or display data in tables, charts, and graphs, including bar graphs, tally charts, and pictographs, in order to answer a question. Students identify the mode of a set of whole numbers using manipulatives.

| Topic | Gr | Goal | Objective | Essence | Extended Content Indicators |
| :--- | :---: | :--- | :--- | :--- | :--- |
|  | 4. M.5.5 | Make predictions or decisions <br> based on data. | 4.M.5.5.1 Make predictions <br> based on data. (298.01.c) |  | 4.M.5.5.1 A <br> Make predictions based on data. |

