Senate Amendment 5029

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Amend Senate File 2216 as follows:
#1. Page 1, line 17, by striking the words <and shall> and inserting the following: <~~and~~ shall>.
#2. Page 1, line 19, by inserting after the word <areas> the following: <; and shall include the statewide core curriculum guidelines adopted pursuant to this section>.
#3. Page 2, by inserting after line 34 the following:
<Sec. ___. Section 256.7, Code Supplement 2007, is amended by adding the following new subsection:
NEW SUBSECTION. 29. Adopt statewide core curriculum guidelines for number sense and operations learning standards for grades three and four which provide that students shall be able to engage in problem solving, communicating, reasoning, connecting, and representing as follows:
a. Exhibit an understanding of the base ten number system by reading, modeling, writing, and interpreting whole numbers to at least one hundred thousand; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers.
b. Represent, order, and compare large numbers to at least one hundred thousand.
c. Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.
d. Select, use, and explain models to relate common fractions and mixed numbers, find equivalent fractions, mixed numbers, and decimals, and order fractions.
e. Identify and generate equivalent forms of common decimals and fractions less than one whole, including halves, quarters, fifths, and tenths.
f. Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between zero and one up to hundredths.
g. Recognize classes, in particular odds and evens, factors or multiples of a given number, and squares, to which a number may belong, and identify the numbers in those classes, and be able to use this recognition in the solution of problems.
h. Select, use, and explain various meanings and models of multiplication and division of whole numbers; understand and use the inverse relationship between the two operations.
i. Select, use, and explain the commutative and associative, and identity properties of operations on whole numbers in problem situations.
j. Select and use appropriate operations, including addition, subtraction, multiplication, and division, to solve problems, including those involving money.
k. Know multiplication facts through twelve multiplied by twelve and related division facts; and use these facts to solve related multiplication problems and compute related problems.
l. Add and subtract up to five=digit numbers and multiply up to three digits by two digits accurately and efficiently.
m. Divide up to a three=digit whole number with a single=digit divisor, with or without remainders, accurately and efficiently; and be able to interpret any remainders.
n. Demonstrate in the classroom an understanding of and the ability to use the conventional algorithms for addition and subtraction up to five=digit numbers, and multiplication up to three digits by two digits.
o. Demonstrate in the classroom an understanding of and the ability to use the conventional algorithm for division of up to a three=digit whole number with a single=digit divisor, with or without remainders.
p. Round whole numbers through one hundred thousand to the nearest ten, one hundred, one

thousand, ten thousand, and one hundred thousand.
q. Select and use a variety of strategies, including front=end, rounding, and regrouping, to estimate quantities, measures, and the results of whole=number computations up to three=digit whole numbers and amounts of money to one thousand dollars, and to judge the reasonableness of the answer.
r. Use concrete objects and visual models to add and subtract common fractions.>
#4. Page 2, by inserting after line 34 the following:
<Sec. ___. Section 256.7, Code Supplement 2007, is amended by adding the following new subsection:
NEW SUBSECTION. 30. Adopt statewide core curriculum guidelines for patterns, relations, and algebra learning standards for grades three and four which provide that students shall be able to engage in problem solving, communicating, reasoning, connecting, and representing as follows:
a. Create, describe, extend, and explain symbolic or geometric and numeric patterns, including multiplication patterns.
b. Use symbol and letter variables to represent unknowns or quantities that vary in expressions and in equations or inequalities.
c. Determine values of variables in simple equations.
d. Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.
e. Solve problems involving proportional relationships, including unit pricing and map interpretation.
f. Determine how change in one variable relates to a change in a second variable, such as input=output tables.>
#5. Page 2, by inserting after line 34 the following:
<Sec. ___. Section 256.7, Code Supplement 2007, is amended by adding the following new subsection:
NEW SUBSECTION. 31. Adopt statewide core curriculum guidelines for geometry learning standards for grades three and four which provide that students shall be able to engage in problem solving, communicating, reasoning, connecting, and representing as follows:
a. Compare and analyze attributes and other features, such as the number of sides, faces, corners, right angles, diagonals, and symmetry of two=and three=dimensional geometric shapes.
b. Describe, model, draw, compare, and classify two=and three=dimensional shapes, such as circles, polygons including triangles and quadrilaterals, cubes, spheres, and pyramids.
c. Recognize similar figures.
d. Identify angles as acute, right, or obtuse.
e. Describe and draw intersecting, parallel, and perpendicular lines.
f. Use ordered pairs of numbers or letters, graph, locate, identify points, and describe paths such as first quadrant.
g. Describe and apply techniques such as reflections, rotations, and translations for determining if two shapes are congruent.
h. Identify and describe line symmetry in two=dimensional shapes.
i. Predict and validate the results of partitioning, folding, and combining two=and three=dimensional shapes.>
#6. Page 2, by inserting after line 34 the following:
<Sec. ___. Section 256.7, Code Supplement 2007, is amended by adding the following new subsection:
NEW SUBSECTION. 32. Adopt statewide core curriculum guidelines for measurement learning standards for grades three and four which provide that students shall be able to engage in problem solving, communicating, reasoning, connecting, and representing as follows:
a. Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the

appropriate type of unit for measuring each attribute.
b. Carry out simple unit conversions within a system of measurement, such as hours to minutes, cents to dollars, and yards to feet or inches.
c. Identify time to the minute on analog and digital clocks using a.m. and p.m., and compute elapsed time using a clock and a calendar.
d. Estimate and find the area and perimeter of a rectangle, triangle, or irregular shape using diagrams, models, and grids or by measuring.
e. Identify and use appropriate metric and English units and tools including rulers, angle rulers, graduated cylinders, and thermometers to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.>
#7. Page 2, by inserting after line 34 the following:
<Sec. ___. Section 256.7, Code Supplement 2007, is amended by adding the following new subsection:
NEW SUBSECTION. 33. Adopt statewide core curriculum guidelines for data analysis, statistics, and probability learning standards for grades three and four which provide that students shall be able to engage in problem solving, communicating, reasoning, connecting, and representing as follows:
a. Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.
b. Match a representation of a data set such as lists, tables, or graphs, including circle graphs, with the actual set of data.
c. Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.
d. Represent the possible outcomes for a simple probability situation.
e. List and count the number of possible combinations of objects from three sets.
f. Classify outcomes as certain, likely, unlikely, or impossible by designing and conducting experiments using concrete objects such as counters, number cubes, spinners, or coins.>
#8. By renumbering as necessary.

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