Your Mathematics Standards Companion at a Glance



Some states' standards are less directly correlated to Common Core than others. In those cases, you can see a more dynamic cross-referencing and see where mathematical content is described a bit differently, shifts up or down a grade, or is not present in this book.

Mathematics Standards of Learning for Virginia Public Schools

Virginia Strand	Virginia Standard	Common Core Standard	Page(s)
Sixth Grade			
Number and Number Sense	6.1	6.RPA.1	8
	6.Za	4.NF.C.5/4.NF.C.6/7.NS.A.2	142 and 143 in the 3–5 book, 62 in this book
	6.2b	4.NF.A.2/4.NF.C.7/5.NBT.A.3	128, 145, 94 in the 3-5 book
	6.3a	6.NS.C.6	45
	6.3b	6.NS.C.7	47
	6.3c	6.NS.C.7	47
	6.4	n/a	n/a
Computation and Estimation	6.5a	5.NF.B.4/5.NF.B.7/6.NS.A.1	159 and 165 in the 3–5 book, 34 in this book
	6.5b	4.NF.B.3/4.NF.B.4/5.NF.A.2/5.NF.B.6/ 6.NS.A.1	132, 137, 154, 164 in the 3–5 book, 34 in this book
	6.5c	5.NBT.B.7/6.NS.B.3	101 in the 3–5 book, 38 in this book
	6.6a	7.NS.A.1/7.NS.A.2	58, 62
	6.6b	7.NS.A.3	66
	6.6c	7.NS.A.1/7.NS.A.2/7.EE.A.1	58, 62, 104
	6.7a	7.G.B.4	169
	6.7b	7.G.B.4	169
	6.7c	4.MD.A.3	202 in the 3–5 book
	6.8a	5.G.A.1	244 in the 3–5 book
	6.8b	5.G.A.1/5.G.A.2/6.NS.C.8	244 and 245 in the 3–5 book, 49 in this book
	6.9	8.G.A.2	180
Probability and Statistics	6.10a	n/a	n/a
	6.10b	n/a	n/a
	6.10c	n/a	n/a
	6.11a	n/a	n/a
	6.11b	n/a	n/a
Patterns, Functions, and Algebra	6.12a	7.RP.A.2	19
	6.12b	7.RP.A.2	19
	6.12c	7.RP.A.2	19
	6.12d	7.RP.A.2	19
	6.13	6.EE.B.6/6.EE.B.7	93, 94
	6.14a	6.EE.B.6/6.EE.B.8	93, 95
	6.14b	6.EE.B.8/7.EE.B.4	95, 109

n/a" is used to show standards that are not present in or do not have a direct correlation to

the Common Core.

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	6.14b	6.EE.B.8/7.EE.B.4	95, 109

Callouts indicate where further information can be found in another grade-level version of Your Mathematics Standards Companion.

The Number System

Domain Overview

CRADE 6 Sixth grades continue their previous understanding of the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to explain why the procedures for dividing fractions to divide whole numbers for the relationship fractions to solved solved and equations to divide whole numbers for the other and about value of rational numbers, including negative rational numbers. Sing adjects focus on the order and about value of rational numbers, and location of points in all for-guardants of the coordinate plane.
CRADE 7
Swenth grades feeso pan understanding of number, recognizing fractions, decimals, and presents as different representations, decimals, and presents as different addition, subtraction, multiplication, and division to all

Domain Overview: Gives a brief description of the big ideas, allowing you to see how the mathematical ideas

develop across grade levels.

Suggested Materials for This Domain: Provides teachers with a list of materials that will be helpful in introducing the concepts in this domain.

KEY VOCABULARY

SUGGESTED MATERIALS FOR THIS D

Factor trees

Number lines Pattern blocks

Two-color counters

Algeblocks™ or Algebra Tiles™ Coordinate grids Decimal blocks

7 8

6

6

1

1

1

1 1

1 1

1

i

7 8 1 bsolute value distance from 0 on a number line 1 additive inverse a number that, when added to another number, gives a sum of zero algorithm a set of steps used to solve a mathematical computation such as long division common factor a factor that two or more numbers have in common complex fraction a fraction with a fraction in the numerator and/or a fraction in the denominator 1 coordinate plane a plane formed by the intersection of a horizontal number line (called the x-axis) with a vertical number line called the y-axis. The number lines intersect at their zero points called the origin.

Adding machine tape (optional, used to create number lines)

coordinates set of numbers, or a single number, that locates a point on a line, on a plane, or in space ator the bottom number of a fraction that shows how many equal parts the whole denominato is divided into distributive property the property that states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products. The distributive property is a $\times (b + c) = (a \times b) + (a \times c)$.

dividend the number to be divided divisor the number that divides the dividend in a division problem

(Continued)

Key Vocabulary: Vocabulary included in the domain with grade levels indicated.



This section gives examples of how you might incorporate some of the practices into your instruction on this topic. You will find the following components for each standard in the cluster:

own words.

Standard: The standard as written in the Common Core, followed by an explanation of the meaning of the mathematics in that standard, including examples.





Resources: In the Resources section at the end of the book you will find tables outlining the Standards for Mathematical Practice and Effective Teaching Practices from NCTM's *Principles to Actions* and reproducibles.

Standard for Mathematical Practice	What the Teacher Does	What the Students Do	
 Make sense of problems and persevere in solving them. 	Provide students with rich tasks and real-world problems that focus on and promote student understanding of an important mathematical concept. Provide time for and facilitate the discussion of problem solutions. What are you asked to find? Have you solved a similar problem before? What is your plan for solving the problem? Can you explain how you solved the problem? Does your answer make sense? Did you use a different method to check your answer?	 Actively engage in solving problems by working to understand the information that is in the problem and the question that is asked. Use a variety of strategies that make sense to solve the problem. Try a different strategy if the first strategy does not work. Ask themselves if they used the most efficient way to solve the problem. Ask themselves if their solution makes sense. Solve real-world problems through the application of algebraic and geometric concepts. 	
 Reason abstractly and quantitatively. 	 Provide real-world scenarios to use real numbers and variables in mathematical expressions, equations, and inequalities. Help students decontextualize to manipulate symbolic representations by applying properties of operations. Help students understand the meaning of the number or variable as related to a problem. 	Use varied strategies, models, and drawings to think about the mathematics of a task and example. Represent a wide variety of real-world situations through the use of real numbers and variables in mathematical expressions, equations, and inequalities. Contextualize to understand the meahing of the number or variable as related to the problem and decontextualize to manipulate symbolic representations by applying properties. Examine patterns in data and assess the degree of linearity of functions.	
 Construct viable arguments and critique the reasoning of others. 	Provide tasks that encourage students to construct mathematical arguments. Expect students to explain their strategies and mathematical thinking to others. Expect students to listen to the reasoning of others and respond to their thinking. Help students to compare strategies and methods by asking questions such as: How can you prove that your answer is correct? What do you think abouts strategy? How is your method different froms? How is it similar? When the this the tables work? } }	 Explain orally or in writing their strategies and thinking using models, drawings, or symbolic representations. Critique and evaluate their own thinking and the thinking of other students. Ask questions to one another and to the teacher to clarify their understanding. Look for similarities among different ways to solve problems. Construct arguments using verbal or written explanations for expressions, equations, inequalities, models, and graphs, tables, and other data displays. 	

Tea Pra	aching actice	Purpose	What the Teacher Does	What the Students Do
1.	Establish mathematics goals to focus learning.	 Set the stage to guide instructional decisions. Expect students to understand the purpose of a lesson beyond simply repeating the words in the Standard. 	Consider broad goals as well as the goals of the unit and the lesson, including: What is to be learned? Why is the goal important? Where do students need to go? How can learning be extended?	 Make sense of the new concepts and skill making connections to previously learned Grades 6–8 concepts. Experience connections among the Standards and across domains. Deepen their understanding and expect what they are learning makes sense.
2.	Implement tasks that promote reasoning and problem solving.	 Provide opportunities for students to engage in exploration and make sense of important mathematics. Encourage students to use procedures in ways that are connected to understanding. 	 Choose tasks that: are built on current student understandings, have various entry points with multiple ways for the problems to be solved, are interesting to students. 	 Work to make sense of the task and persevere in solving problems. Use a variety of models and materials to make sense of the mathematics in the tasi Convince themselves and others the answer is reasonable.
3. Use and commathemat representa	Use and connect mathematical representations.	 Lead students to connect conceptual understanding of procedural skills using models and representations. 	 Use tasks that allow students to use a variety of representations. Encourage the use of different representations, including concrete manipulatives, models, and symbolic representations that support students in explaining their thinking and reasoning. 	 Use materials to make sense of problem situations. Connect representations to mathematical concepts and the structure of big ideas for ratios and proportional relationships, expressions, and equations, the number system, statistics, and probability, geometry, and functions.
4. 1	Facilitate meaningful mathematical discourse.	 Provide students with opportunities to share ideas, clarify their understanding, and develop convincing arguments. Allow discussion to advance mathematical thinking for the whole class. 	Engage students in explaining their mathematical reasoning in small group and classroom discussions. Facilitate dialog among students that supports sense making of a variety of strategies and approaches. Scaffold classroom discussions so that connections between representations and mathematical ideas occurs.	Explain their ideas and reasoning in small groups and with the entire class. Listen to the reasoning of others. Ask questions of others to make sense of their ideas.

