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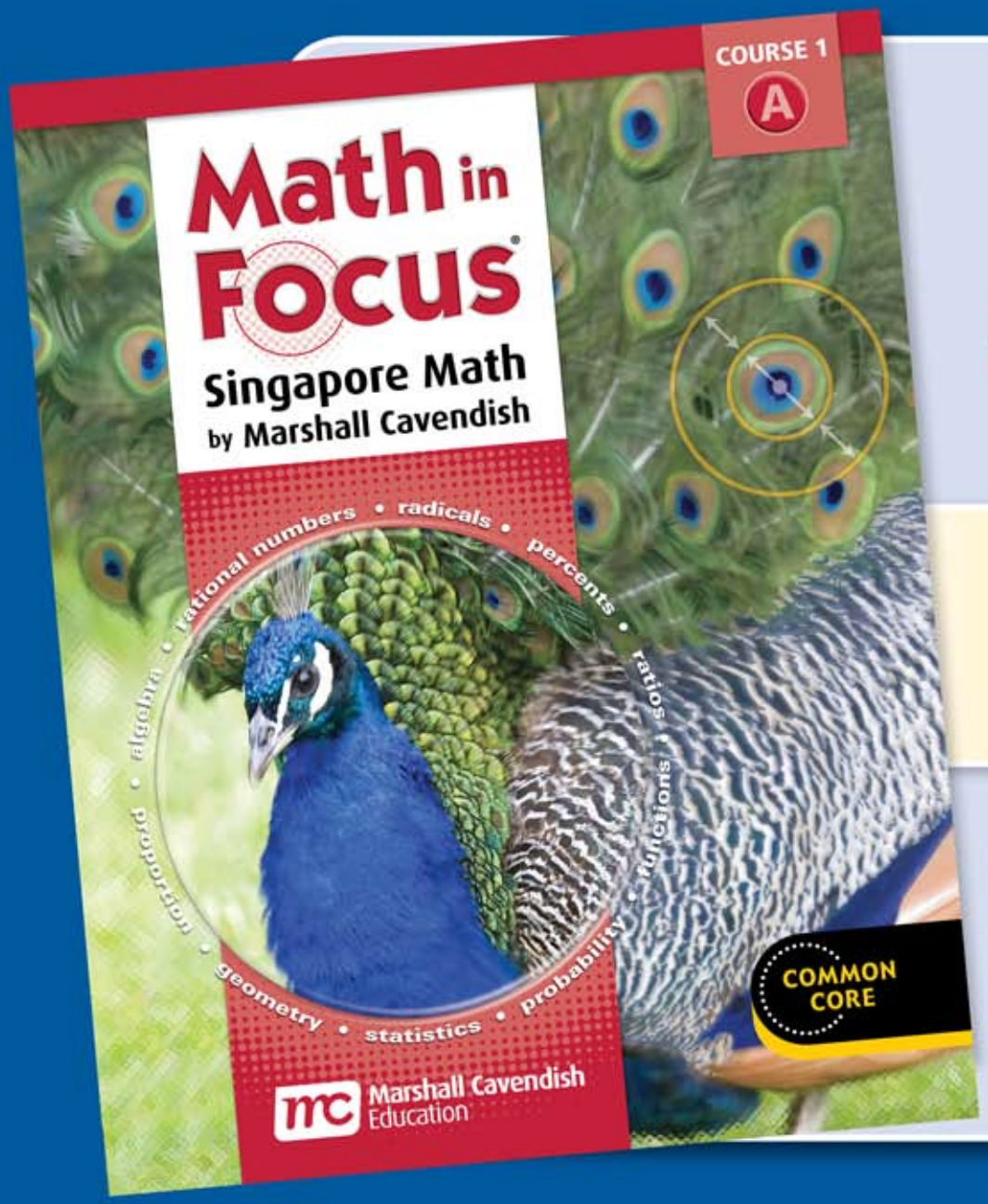

Correlation to the Common Core State Standards for Mathematics

Math in Focus © 2012 Course 1

COMMON CORE

Correlation of *Math Ín FocusTH* to the Common Core State Standards

Attached are grade level correlations showing how closely ***Math in Focus®*** covers the skills and concepts outlined in the Common Core State Standards. But it is equally important to recognize the parallel assumptions behind the Common Core and ***Math in Focus®*** . In fact, the Singapore curriculum was one of the 15 national curriculums examined by the committee and had a particularly important impact on the writers because Singapore is the top performing country in the world and the material is in English.

> *Overall, the CCSS are well aligned to Singapore's Mathematics Syllabus.*
> *Policymakers can be assured that in adopting the CCSS, they will be setting learning expectations for students that are similar to those set by Singapore in terms of rigor, coherence and focus. – Achieve (achieve.org/CCSSandSingapore)*
> *—Achieve*, (achieve.org/CCSSandSingapore)*

Here are the parallel assumptions:

1, Curriculum must be focused and coherent:

Common Core State Standards:

> *For over a decade, research studies of mathematics education in high performing countries have pointed to the conclusion that the mathematics curriculum in the United States must become substantially more focused and coherent in order to improve mathematics achievement in this country.*
> *(Common Core State Standards for Mathematics, 3)*

Math in Focus® is organized to teach fewer topics in each grade but to teach them thoroughly. When a concept appears in a subsequent grade level, it is always at a higher level. For instance, first grade does not address fractions, second grade covers what a fraction is, third grade covers equivalent fractions and fractions of a set, fourth grade deals with mixed fractions, and addition of simple fractions, while fifth grade teaches addition, subtraction, and multiplication of fractions as well as division of fractions by whole numbers. This is the coherence and focus that the standards call for.

2. Teach to mastery

Common Core State Standards:

> *In grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes. (Common Core State Standards for Mathematics, 17)*
>
> *In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100;(2)developing understanding of fractions, especially unit fractions…;(3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing tw0-dimensional shapes*
> *(Common Core State Standards for Mathematics, 21)*

Math in Focus® has the identical structure. Rather than repeating topics, students master them in a grade level, and subsequent grades develop them to more advanced levels. Adding another digit is NOT an example. Moving from addition/subtraction in second grade to multiplication/division in third grade is such an example. Students continue to practice all the operations with whole numbers in every grade in the context of problem solving.

3. Focus on number, geometry and measurement in elementary grades

Common Core State Standards:

> *Mathematics experiences in early childhood settings should concentrate on (1) number (which includes whole number, operations, and relations) and (2) geometry, spatial relations, and measurement, with more mathematics learning time devoted to number than to other topics.*
> *(Common Core State Standards for Mathematics, 3)*

Math in Focus® emphasizes number and opera tions in every grade K-5 just as recommended in the CCSS. The textbook is divided into two books roughly a semester each. Approximately 75% of Book A is devoted to number and operations and 60-70% of Book B to geometry and measurement where the number concepts are practiced. The key number topics are in the beginning of the school year so students have a whole year to master them.

4. Organize content by big ideas such as place value

Common Core State Standards:

> *These Standards endeavor to follow such a design, not only by stressing conceptual understanding of key ideas, but also by continually returning to organizing principles such as place value or the properties of operations to structure those ideas. (Common Core State Standards for Mathematics, 4)*

Math in Focus® is organized around place value and the properties of operations. The first chapter of each grade level from second to fifth begins with place value. In first grade, students learn the teen numbers and math facts through place value. In all the grades, operations are taught with place value materials so students understand how the standard algorithms work. Even the mental math that is taught uses understanding of place value to model how mental arithmetic can be understood and done.

5. Curriculum must include both conceptual understanding and procedural fluency.

Common Core State Standards:

> *The Standards for Mathematical Content are a balanced combination of procedure and understanding (Common Core State Standards for Mathematics, 8)*

Math in Focus® is built around the Singapore Ministry of Education's famous pentagon that emphasizes conceptual understanding, skill development, strategies for solving problems, attitudes towards math, and metacognition that enable students to become excellent problem solvers. The highly visual nature of the text and the consistent concrete to visual to abstract approach enables all students to both understand how procedures work and to fluently apply them to solve problems.

6. Mathematics is about reasoning

Common Core State Standards:

> *These Standards define what students should understand and be able to do in their study of mathematics....One hallmark of mathematical understanding is the ability to justify, in a way appropriate to the student's mathematical maturity. (Common Core State Standards for Mathematics, 4)*

***Math in Focus*®** is famous for its model drawing to solve problems and to enable students to justify their solutions. In addition to journal questions and other explicit opportunities to explain their thinking, students are systematically taught to use visual diagrams to represent mathematical relationships in such a way as to accurately solve problems, but also to explain their thinking.

Works Cited:

1. "Common Core State Standards For Mathematics" *Common Core State Standards Initiative | Home*. 2 June 2010. Web. 26 July 2010. <http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf>.

Houghton Mifflin Harcourt Specialized Curriculum
Math in Focus®, Course 1 ©2012
for the Common Core
correlated to the

Common Core State Standards for Mathematics
Grade 6

Standard	Descriptor	Citations
Standards for Mathematical Practice		
SMP.1. Make sense of problems and persevere in solving them. **How *Math in Focus*® Aligns:** *Math in Focus*® is built around the Singapore Ministry of Education's mathematics framework pentagon, which places mathematical problem solving at the core of the curriculum. Encircling the pentagon are the skills and knowledge needed to develop successful problem solvers, with concepts, skills, and processes building a foundation for attitudes and metacognition. *Math in Focus*® is based on the premise that in order for students to persevere and solve both routine and non-routine problems, they need to be given tools that they can use consistently and successfully. They need to understand both the *how* and the *why* of math so that they can self-monitor and become empowered problem solvers. This in turn spurs positive attitudes that allow students to solidify their learning and enjoy mathematics. *Math in Focus*® teaches content through a problem solving perspective. Strong emphasis is placed on the concrete-to-pictorial-to-abstract progress to solve and master problems. This leads to strong conceptual understanding. Problem solving is embedded throughout the program		*Occurs throughout as students use problem solving to build skills using ratios, rates, and percents and solve routine and non-routine problems that include real-world and mathematical applications in algebra, measurement, and data analysis. For example:* **SE/TE-A:** 58, 94–107, 118–126, 140–150, 159–167, 168–178, 198–203, 204–214, 246–251 **SE/TE-B:** 29–34, 62–66, 143–158, 200–208, 264–271 *Occurs throughout as students persevere in real-world problem solving through consistent problem-solving tools such as bar modeling. For example:* **SE/TE-A:** 66, 68, 70, 72,73, 88, 93, 97–98, 101, 102, 117, 121–123, 143–147, 159–160, 164–165, 168–169, 193–198, 204–211, 219, 221–223, 229–231, 239–240, 246–250 **SE/TE-B:** 13–14, 29–30

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Standard	Descriptor	Citations
SMP.2. Reason abstractly and quantitatively. **How *Math in Focus*® Aligns:** *Math in Focus*'® concrete-pictorial-abstract progression helps students effectively contextualize and decontextualize situations by developing a deep mastery of concepts. Each topic is approached with the expectation that students will understand both *how* it works, and also *why*. Students start by experiencing the concept through hands-on manipulative use. Then, they must translate what they learned in the concrete stage into a visual representation of the concept. Finally, once they have gained a strong understanding, they are able to represent the concept abstractly. Once students reach the abstract stage, they have had enough exposure to the concept and they are able to manipulate it and apply it in multiple contexts. They are also able to extend and make inferences; this prepares them for success in more advanced levels of mathematics. They are able to both use the symbols and also understand why they work, which allows students to relate them to other situations and apply them effectively.		*Occurs throughout as students analyze and solve non-routine problems, formulate conjectures through explorations, hands-on activities, and observations, identify and explain mathematical situations and relationships, and relate symbols such as negative numbers and variables to real-world situations. For example:* **SE/TE-A:** 15, 18, 22, 29–31, 32, 33–35, 37, 38, 50, 53, 57, 58, 67, 70, 75, 86, 107, 126, 149, 150, 166, 167, 178, 188, 189, 192, 197, 213, 214, 232, 238, 245, 252 **SE/TE-B:** 24, 34, 47, 66, 76–78, 113, 124–126, 131, 158–159, 173, 175, 178, 195, 208, 219, 224, 237, 248, 250, 255, 261, 268, 271

Standard	Descriptor	Citations
SMP3. Construct viable arguments and critique the reasoning of others. **How *Math in Focus*® Aligns:** As seen on the Singapore Mathematics Framework pentagon, metacognition is a foundational part of the Singapore curriculum. Students are taught to self-monitor, so they can determine whether or not their solutions make sense. Journal questions and other opportunities to explain their thinking are found throughout the program. Students are systematically taught to use visual diagrams to represent mathematical relationships in such a way as to not only accurately solve problems, but also to justify their answers. Chapters conclude with a Put on Your Thinking Cap! problem. This is a comprehensive opportunity for students to apply concepts and present viable arguments. Games, explorations, and hands-on activities are also strategically placed in chapters when students are learning concepts. During these collaborative experiences, students interact with one another to construct viable arguments and critique the reasoning of others in a constructive manner. In addition, thought bubbles provide tutorial guidance throughout the entire Student Book. These scaffolded dialogues help students articulate concepts, check for understanding, analyze, justify conclusions, and self-regulate if necessary.		*Occurs throughout as students communicate in Math Journals and demonstrate and explain mathematical steps using a variety of appropriate materials, models, properties, and skills. For example:* **SE/TE-A:** 5–10, 22–23. 31, 35, 46–48, 50, 53, 57, 75, 78, 86, 126, 149, 166, 168–178, 188, 189, 192, 197–203, 213, 232, 234–235, 238, 239–240, 245 **SE/TE-B:** 5–10, 22–28, 31, 42–44, 78–81, 89, 92, 94, 105, 107, 127, 129–130, 137–139, 143–144, 146, 147, 149–151, 173, 190, 192–193, 195, 200–201, 203–204, 222–225, 237, 248, 250 *Occurs throughout as students share mathematical ideas with others during Hands-On activities, Guided Practice Exercises, Projects, and other activities. For example:* **SE/TE-A:** 7–8, 22, 50, 67, 70, 72, 75, 80–85, 173–174, 189, 199–202, 232, 241 **SE/TE-B:** 6–8, 24, 44, 47, 76–78, 124–128, 131, 173, 175, 178, 186, 195, 219, 223–225, 248, 255, 261, 267–268

Standard	Descriptor	Citations
SMP.4. Model with mathematics. **How *Math in Focus*® Aligns:** *Math in Focus*® follows a concrete-pictorial-abstract progression, introducing concepts first with physical manipulatives or objects, then moving to pictorial representation, and finally on to abstract symbols. A number of models are found throughout the program that support the pictorial stage of learning. *Math in Focus*® places a strong emphasis on number and number relationships, using place-value manipulatives and place-value charts to model concepts consistently throughout the program. In all grades, operations are modeled with place-value materials so students understand how the standard algorithms work. Even the mental math instruction uses understanding of place value to model how mental arithmetic can be understood and done. These place-value models build throughout the program to cover increasingly complex concepts. Singapore math is also known for its use of model drawing, often called "bar modeling" in the U.S. Model drawing is a systematic method of representing word problems and number relationships that is explicitly taught beginning in Grade 2 and extends all the way to secondary school. Students are taught to use rectangular "bars" to represent the relationship between known and unknown numerical quantities and to solve problems related to these quantities. This gives students the tools to develop mastery and tackle problems as they become increasingly more complex.		*Occurs throughout as students represent mathematical ideas, model and record quantities using manipulatives, number lines, bar models, drawings, tables, coordinate graphs, symbols, algebraic expressions, equations, inequalities, and formulas. For example:* **SE/TE-A:** 5–15, 23, 66, 68, 70, 72, 73, 85, 88, 93, 97–98, 101, 102, 117, 121–123, 140, 143–147, 159–160, 164–165, 168–169, 172, 175-176, 178, 185, 193–198, 202, 204–211, 219, 221–223, 229–232, 239–240, 246–250 **SE/TE-B:** 5–10, 13–18, 22–30, 31, 47, 62–64, 75–76, 86, 88, 91, 94, 98 124, 131, 136–137, 146–147 181–186, 189–195, 200–206, 215–216, 219, 222–225, 248, 261

Standard	Descriptor	Citations
SMP.5. Use appropriate tools strategically. **How *Math in Focus*® Aligns:** *Math in Focus*® helps students explore the different mathematical tools that are available to them. New concepts are introduced using concrete objects, which help students break down concepts to develop mastery. They learn how to use these manipulatives to attain a better understanding of the problem and solve it appropriately. *Math in Focus*® includes representative pictures and icons as well as thought bubbles that model the thought processes students should use with the tools. Several examples are listed below. Additional tools referenced and used in the program include clocks, money, dot paper, place-value charts, geometric tools, and figures.		*Occurs throughout as students select tools such as pencil and paper, concrete and visual models such as number lines and grids, or technology to model developing skills and interpret everyday situations that involve ratios, rates, percents, measurement, geometric formulas, and data collection and distribution. For example:* **SE/TE-A:** 5–15, 16–19, 21, 50, 67, 70, 72, 85, 124, 140, 142, 144, 146, 185, 193–198, 204–211, 232 **SE/TE-B:** 5–10, 22–28, 31, 45, 47, 50–57, 62–64, 75–78, 86, 88, 91, 98, 131, 219, 195, 215–216, 222–225, 248, 261 Note: There will also be Additional Technology Resources, such as Virtual Manipulatives, as well as on-line resources for intervention and assessment upon the completion of the Teacher's Edition.
SMP.6. Attend to precision. **How *Math in Focus*® Aligns:** As seen in the Singapore Mathematics Framework, metacognition, or the ability to monitor one's own thinking, is key in Singapore math. This is modeled for students throughout *Math in Focus*® through the use of thought bubbles, journal writing, and prompts to explain reasoning. When students are taught to monitor their own thinking, they are better able to attend to precision, as they consistently ask themselves, "does this make sense?" This questioning requires students to be able to understand and explain their reasoning to others, as well as catch mistakes early on and identify when incorrect labels or units have been used. Additionally, precise language is an important aspect of *Math in Focus*®. Students attend to the precision of language with terms like factor, quotient, difference, and capacity.		*Occurs throughout as students check answers and use mathematical vocabulary, define and interpret symbols, label bar and geometric models correctly, and compute with appropriate formulas and units in solving problems and explaining reasoning. For example:* **SE/TE-A:** 5, 6–7, 10, 44, 45, 65, 66, 68, 70–73, 76, 88, 89, 94, 97, 99, 101, 116–120, 124, 125, 129, 142–147, 157–160, 168–178, 185, 198–211, 221–223, 226, 229–231, 233–234, 239–240, 246–250 234, 239–240, 246–250; **SE/TE-B:** 3, 13–14, 29–30, 42, 54, 75, 78–81, 89, 92, 94, 105, 107, 122, 126, 127, 129–130, 137–139, 143–144, 146, 147, 149–151, 172, 190, 192–193, 200–201, 203–204, 218, 229–231, 244

Standard	Descriptor	Citations
SMP.7. Look for and make use of structure. **How *Math in Focus*® Aligns:** The inherent pedagogy of Singapore math allows students to look for, and make use of, structure. Place value is one of the underlying principles in *Math in Focus*®. Concepts in the program start simple and grow in complexity throughout the chapter, year, and grade. This helps students master the structure of a given skill, see its utility, and advance to higher levels. Many of the models in the program, particularly number bonds and bar models, allow students to easily see patterns within concepts and make inferences. As students progress through grade levels, this level of structure becomes more advanced.		*Occurs as skills and concepts are interconnected in prior knowledge activities, skill traces, and chapter concept maps. For example:* **SE/TE-A:** 3–4, 39, 59, 63–64, 108, 115–117, 151, 155–158, 179, 183–184, 215, 219–220, 253 **SE/TE-B:** 3–4, 35, 39–40, 67, 73–74, 114, 119–121, 160, 169–171, 209, 215–216, 238, 243, 272 *Occurs throughout as students recognize patterns and structure and make connections from one mathematical idea to another through Big Ideas, Math Notes, and Cautions. For example:* **SE/TE-A:** 2, 16–17, 22–23, 31, 35, 36, 42, 62, 71, 78–79, 97, 101, 114, 117, 119, 122–123, 132, 143–147, 154, 157, 172, 182, 185–187, 218, 234–235, 242–243 **SE/TE-B:** 2, 13, 38, 43, 45, 50–57, 62–63, 72, 73, 86, 98, 118, 125–127, 168, 214, 222–223, 242, 251, 258, 266–268

Standard	Descriptor	Citations
SMP.8. Look for and express regularity in repeated reasoning. **How *Math in Focus*® Aligns:** A strong foundation in place value, combined with modeling tools such as bar modeling and number bonds, gives students the foundation they need to look for and express regularity in repeated reasoning. Operations are taught with place value materials so students understand how the standard algorithms work in all grades. Even the mental math instruction uses understanding of place value to model how mental arithmetic can be understood and done. This allows students to learn shortcuts for solving problems and understand why they work. Additionally, because students are given consistent tools for solving problems, they have the opportunity to see the similarities in how different problems are solved and understand efficient means for solving them. Throughout the program, students see regularity with the reasoning and patterns between the four key operations. Students continually evaluate the reasonableness of solutions throughout the program; the consistent models for solving, checking, and self-regulation help them validate their answers.		*Occurs throughout as students apply factorizations, use bar models and standard algorithms with fractions and decimals consistently, use properties to simplify numerical and algebraic expressions, and develop and use formulas. For example:* **SE/TE-A:** 16–17, 20, 22–23, 25, 31, 35, 63, 66, 68, 70, 72, 73, 78, 82–84, 87–104, 117, 121–123, 143–147, 155, 159–160, 164–165, 168–178, 193–198, 204–211, 219, 221–223, 229–231, 234–235, 239–240, 246–250 **SE/TE-B:** 13–14, 29–30, 54,78–81, 89, 92, 94, 105, 107, 119–120, 127, 129–130, 137–139, 143–144, 146, 147, 149–151, 190, 192–193, 200-201, 203–204, 243

Standard	Descriptor	Citations
Standards for Mathematical Content		
6.RP	**Ratios and Proportional Relationships**	
Understand ratio concepts and use ratio reasoning to solve problems		
6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities	**SE/TE-A:** 114C, 114, 115, 118–126, 127–128 134–139, 140–150, 158 **SE/TE-B:** 17–21, 62–66
6.RP .2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship[1] [1]Expectations for unit rates in this grade are limited to non-complex fractions	**SE/TE-A:** 154C, 154, 159–167, 168–178
6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations	**SE/TE-A:** 140–150, 168–178, 159–167, 168–178 **SE/TE-B:** 17–21, 62–66
6.RP.3a	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios	**SE/TE-A:** 134–140, 150 **SE/TE-B:** 17–21, 62–66
6.RP.3b	Solve unit rate problems including those involving unit pricing and constant speed	**SE/TE-A:** 159–167, 168–178 **SE/TE-B:** 17–21, 62–66, 149–150
6.RP.3c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.	**SE/TE-A:** 182D–182E, 182, 185–188, 189–192, 193–197, 204–214
6.RP.3.d	Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities	**SE/TE-A:** 116–117, 119–120, 125, 158 168–178

Standard	Descriptor	Citations
6.NS	**The Number System**	
Apply and extend previous understandings of multiplication and division to divide fractions by fractions		
6.NS.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem	**SE/TE-A:** 62C, 62, 65–77, 96–107
Compute fluently with multi-digit numbers and find common factors and multiples		
6.NS.2	Fluently divide multi-digit numbers using the standard algorithm	**SE/TE-A:** 90–92, 95, 160–163, 173–176 **SE/TE-B:** 120, 243
6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation	**SE/TE-A:** 62C, 62, 63, 78–86, 87–93, 94–95, 105, 140–150, 168–178, 198–203, 204–213 **SE/TE-B:** 104–113, 119–121, 143–158, 200–208, 243
6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor	**SE/TE-A:** 3, 4, 20–28

Standard	Descriptor	Citations
Apply and extend previous understandings of numbers to the system of rational numbers		
6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation	**SE/TE-A:** 2D–2E, 2, 5–15, 42C, 42, 43, 45–53
6.NS.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates	**SE/TE-A:** 2D–2E, 2, 5–15, 42C, 42, 43, 45–53 **SE/TE-B:** 22–29, 38C, 38, 42–48
6.NS.6a	Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite	**SE/TE-A:** 45–53 **SE/TE-B:** 22–29
6.NS.6b	Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes	**SE/TE-B:** 42–49
6.NS.6c	Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane	**SE/TE-A:** 5–15, 43, 45–53 **SE/TE-B:** 4, 13–21, 22-29, 39, 42–49

Standard	Descriptor	Citations
6.NS.7	Understand ordering and absolute value of rational numbers	**SE/TE-A:** 6–11, 46–48, 54–58 **SE/TE-B:** 43–44
6.NS.7a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram	**SE/TE-A:** 5–15, 45–53 **SE/TE-B:** 22–29
6.NS.7b	Write, interpret, and explain statements of order for rational numbers in real-world contexts	**SE/TE-A:** 5–15, 45–53 **SE/TE-B:** 22–29
6.NS.7c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation	**SE/TE-A:** 54–58 **SE/TE-B:** 50–61
6.NS.7d	Distinguish comparisons of absolute value from statements about order	**SE/TE-A:** 54–58
6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate	**SE/TE-A:** 54–58 **SE/TE-B:** 50–61, 62–66

Standard	Descriptor	Citations
6.EE	**Expressions and Equations**	
Apply and extend previous understandings of arithmetic to algebraic expressions		
6.EE.1	Write and evaluate numerical expressions involving whole-number exponents	**SE/TE-A:** 29–32, 33–38 **SE/TE-B:** 136–142, 143–158, 189–199, 200–208
6.EE.2	Write, read, and evaluate expressions in which letters stand for numbers	**SE/TE-A:** 218D–218E, 218, 221–215, 226–228, 246–252 **SE/TE-B:** 29–34
6.EE.2a	Write expressions that record operations with numbers and with letters standing for numbers	**SE/TE-A:** 221–215, 246–252 **SE/TE-B:** 3, 29–34
6.EE.2b	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity	**SE/TE-A:** 220, 221–225, 229–238
6.EE.2c	Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations)	**SE/TE-A:** 168–178, 198–203, 226–228, 246–252 **SE/TE-B:** 4, 29–34, 78-81, 89, 92, 94, 105, 107, 127, 129–130, 137–139, 143-144, 146, 147, 149–151, 190, 192-193, 200-201, 203-204
6.EE.3	Apply the properties of operations to generate equivalent expressions	**SE/TE-A:** 234–235, 239–240
6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them)	**SE/TE-A:** 229–238, 239–245

Standard	Descriptor	Citations
Reason about and solve one-variable equations and inequalities		
6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true	**SE/TE-B:** 2C, 2, 5–12, 22–28, 29–34
6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set	**SE/TE-A:** 246–252 **SE/TE-B:** 5–12, 22–28, 29–34
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers	**SE/TE-B:** 5–12, 29–34
6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams	**SE/TE-B:** 2C, 2, 22–28, 30–33

Standard	Descriptor	Citations
Represent and analyze quantitative relationships between dependent and independent variables		
6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation	**SE/TE-B:** 13–21, 62–65
6.G	**Geometry**	
Solve real-world and mathematical problems involving area, surface area, and volume		
6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems	**SE/TE-B:** 72C, 72, 75–87, 88–98, 99–103, 104–113
6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems	**SE/TE-B:** 168C, 168, 189–199, 200–208
6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems	**SE/TE-B:** 42–48, 50–61, 66, 73, 86, 98

Standard	Descriptor	Citations
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems	**SE/TE-B:** 168C, 168, 172–180, 181–188, 200–208
6.SP	**Statistics and Probability**	
Develop understanding of statistical variability		
6.SP.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers	**SE/TE-B:** 214C, 214, 217–218, 228–230
6.SP.2	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape	**SE/TE-B:** 214, 217–221, 223–225, 231–233, 244–248, 251, 254–255, 258, 260–261, 264–270
6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number	**SE/TE-B:** 242C, 242, 243, 244, 246–248, 251, 254–255, 258, 260–261, 264–270

Standard	Descriptor	Citations
Summarize and describe distributions		
6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots	**SE/TE-B:** 215–216, 222–227, 228–237, 246, 253, 258, 266, 267, 268
6.SP .5	Summarize numerical data sets in relation to their context, such as by	**SE/TE-B:** 217–221, 223–225, 231–233, 244–250, 251–257, 260–261, 264–270
6.SP.5a	Reporting the number of observations	**SE/TE-B:** 217–221, 248, 255, 261
6.SP.5b	Describing the nature of the attribute under investigation, including how it was measured and its units of measurement	**SE/TE-B:** 217–221, 248, 261
6.SP.5c	Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered	**SE/TE-B:** 223–225, 223–225, 231–233, 244–250, 251–257, 260–261, 264–270
6.SP.5d	Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered	**SE/TE-B:** 254–255, 264–270