Englewood Public School District
Mathematics
Grade 5
Third Marking Period

Unit – Multiplying and Dividing Decimals

Overview: During this unit, students will multiply and divide decimals, volume, and graphing an equation.

Time Frame: Chapter 9 – 19 days, Chapter 15 – 17 days, Chapter 11.2 only – 5 days (2 days are included for supplemental resources.)
(Pacing includes 1 day for Chapter Opener pages if needed.)

Enduring Understandings:
Decimals can be multiplied and divided in the same way as whole numbers.
The volume of cubes and rectangular prisms can be expressed as the number of cubic units they contain.
The location of every point in the plane has a specific place.

Essential Questions:
How can place value patterns be used to multiply and divide decimals?
How can multiplying and dividing decimals be used to solve real world problems?
How do you determine the volume of a given solid shape?
How do you read and plot points on a coordinate grid?

Standards	Topics and Objectives	Activities	Resources	Assessments
Chapter 9				
5.NBT.A.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left **5.NBT.A.2**. Explain	**Topics** Multiplying and dividing decimals. Twenty-First Century Themes and Skills include: • Creativity and Innovation • Critical Thinking and Problem Solving	**Math Coach – Fact Fluency** **http://schoolwires.henry.k12.ga.us/Page/21865** **Math Wire – Basic Facts Link** **http://mathwire.com/numbersense/bfactslinks.html** **Math Fact Practice**	**SE -5B:** 36-84 **Workbook 5B:** 15-54 **Common Core Focus Lesson Appendix** **Think Central**: Online access to all Math in Focus materials listed above and Virtual Manipulatives	**Unit 3 Benchmark Assessments:** • Common Formative Assessment • Exact Path **Formative Assessments:** • Do Now • Exit Ticket • Math Journal Entries (CRP4)

patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. **5.NBT.B.4** Use place value understanding to round decimals to any place. **5.NBT.B.7.** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. **5.NF.B.5.** Interpret multiplication as scaling (resizing), by: a. **Comparing the size of a product to the size of one factor on the basis of the size of the**	• Communication and Collaboration **Objectives** Students will be able to: • Multiply tenths and hundredths by a 1-digit whole number. • Multiply tenths and hundredths by 10, 100 and 1000. • Multiply tenths and hundredths by multiples of 10, 100 and 1000. • Multiply decimals by 10 squared or 10 cubed. • Divide tenths and hundredths by a 1-digit whole number. • Round quotients to the nearest tenth or hundredth. • Divide tenths and hundredths by 10, 100 and 1000. • Divide tenths and hundredths by multiples of 10, 100 and 1000. • Estimate decimals sums, differences, products and quotients. • Solve real-world problems involving decimals.	http://www.playkidsgames.com/games/mathfact/mathFact.htm **Math Playground** http://www.mathplayground.com/ **Critical Thinking and Problem Solving** p.81: Put on Your Thinking Cap! (9.2.8.B.3) **Children's books:** https://www.the-best-childrens-books.org/math-for-kids.html **More additional texts:** www.newsela.com www.readworks.org www.commonlit.org	**Professional Resources:** The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD. **Lesson and Component Walkthrough:** www.hmhelearning.com **Technology Resources** • Math in Focus eBooks • Math in Focus Teacher Resources CD **Standards Solution Lessons:** • **PARCC Lesson 7:** Selected-Response /Sort by Category • **PARCC Lesson 15:** Practice PARCC Type I Number and Operations in Base Ten • **PARCC Lesson 6: Constructed-Response Strategies** • **PARCC Lesson 7: Selected-Response /Sort by Category** • **PARCC Lesson 9:** Selected-Response Strategies Menu Items • **PARCC Lesson 15:** Practice PARCC Type I Number and Operations	• Math notebook (NJSLSA.W2.) • Calendar skills • Observations • Discussions: in groups, have students explain different ways of solving problems (CRP4) • Multiple choice / short answer assessments • Mini quizzes – assess just one topic, or what was done within 1 or 2 days (CRP8) **Summative Assessments:** **Math in Focus Assessments** Chapter Review/Test – pp 83-84 Assessments 5 – pp.77-80 ExamView Assessment Suite – Test and Practice Generator **Alternative Assessments:** Learning centers: each learning center focuses on a different type of problem

other factor, without performing the indicated multiplication. b. **Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.** *Mathematical Practices* **MP.1, MP.3, MP.4, MP.6, MP.7, MP.8**			in Base Ten • **CCSS Lesson Plan:** Rounding Whole Numbers and Decimals • **PARCC Lesson 15:** Practice PARCC Type I Number and Operations in Base Ten • **CCSS Lesson Plan:** Multiplying Decimals • **CCSS Lesson Plan:** Dividing Decimals by Whole Numbers • **CCSS Lesson Plan:** Dividing Decimals by Decimals **5th grade assessments, interactive, videos, games, lessons, homework:** https://www.opened.com/search?area=mathematics&grade=5&offset=0&resource_type=interactive-assessment (CRP2, CRP4, CRP8) **5th grade worksheets, games, lessons, activities:** https://www.education.com/resources/fifth-grade/ (CRP2, CRP4, CRP8) **5th grade worksheets:** https://www.k5learning.com/free-math-worksheets/fifth-grade-5	

			(CRP2, CRP4, CRP8) **5th grade common core worksheets:** https://www.ixl.com/math/grade-5 (CRP2, CRP4, CRP8) **Khan Academy – videos, lessons, assessments** www.khanacademy.org (8.1.5.A.1)	

Chapter 15 (skip 15.2-15.3)

5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. **5.MD.C.3**. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	**Topics** Finding the volume of rectangular prisms and relating these volumes to liquid measures. Twenty-First Century Themes and Skills include: • Creativity and Innovation • Critical Thinking and Problem Solving • Communication and Collaboration **Objectives** Students will be able to: • Find the volumes of	5.MD.C Box of Clay 5.MD.C.5 Breaking Apart Composite Solids 5.MD.C.5a using Volume to Understand the Associative Property of Multiplication 5.MD.C.5b Cari's Aquarium **5.MD.A.1, 5.NF.B.3 Converting Fractions of a Unit into a Smaller Unit** **Math Playground** http://www.mathplayground.com/	**SE -5B:** 259-262; 275-302 **Workbook 5B:** 167-168; 177-194 **Common Core Focus Lesson Appendix** **Think Central**: Online access to all Math in Focus materials listed above and Virtual Manipulatives **Professional Resources:** The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar	**Formative Assessments:** • Do Now • Exit Ticket • Math Journal Entries (CRP4) • Math notebook (NJSLSA.W2.) • Calendar skills • Observations • Discussions: in groups, have students explain different ways of solving problems (CRP4) • Multiple choice / short answer assessments • Mini quizzes – assess just one

b. **A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.**
5.MD.C.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
5.MD.C.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
a. **Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.**
b. **Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right**

- cubes and rectangular prisms.
- Find the volume of a solid constructed from unit cubes.
- Compare volumes of cubes, rectangular prisms, and other objects.
- Use a formula to find the volume of a rectangular prism.
- Find the capacity of a rectangular container.
- Solve word problems involving volume of rectangular prisms
- Find the volume of a solid composed of two rectangular prisms.
- Solve real-world problems involving the volume of a solid figure composed of two rectangular prisms

Math Coach – Fact Fluency
http://schoolwires.henry.k12.ga.us/Page/21865

Math Wire – Basic Facts Link
http://mathwire.com/numbersense/bfactslinks.html

Math Fact Practice
http://www.playkidsgames.com/games/mathfact/mathFact.htm

Critical Thinking and Problem Solving p.296-297:
Put on Your Thinking Cap! (9.2.8.B.3)

Everything you need to know about math journals:
https://thecornerstoneforteachers.com/math-journals/
(NJSLSA.R1, NJSLSA.W2, NJSLSA.L1)

Discovering Volume (part 1):
https://betterlesson.com/lesson/596487/discovering-volume-part-1
(CRP8)

Modeling Tool by Yeap Ban Har, PhD.

Lesson and Component Walkthrough:
www.hmhelearning.com

Technology Resources
- Math in Focus eBooks
- Math in Focus Teacher Resources CD

Standards Solution Lessons:
- **PARCC Lesson 14:** Performance-Based Assessment Measurement and Data and Volume
- **PARCC Lesson 16:** Performance-Based Assessment Measurement and Data – Volume
- **PARCC Lesson 14:** Performance-Based Assessment Measurement and Data and Volume
- **PARCC Lesson 16:** Performance-Based Assessment Measurement and Data – Volume
- **PARCC Lesson 18:** Practice PARCC

topic, or what was done within 1 or 2 days (CRP8)

Summative Assessments:

Math in Focus Assessments

Chapter Review/Test – pp 300-302

Assessments 5 – pp.142-148

ExamView Assessment Suite – Test and Practice Generator

Alternative Assessments:
Learning centers: each learning center focuses on a different type of problem

rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Mathematical Practices
MP.1, MP.3, MP.4, MP.6, MP.8

Discovering Volume (part 2):
https://betterlesson.com/lesson/598367/discovering-volume-part-2?from=mtp_lesson
(CRP8)

Volume – Decomposing irregular shapes:
https://betterlesson.com/lesson/598751/volume-decomposing-irregular-shapes?from=mtp_lesson
(CRP8)

Finding Volume of Combined Prisms:
https://betterlesson.com/lesson/599749/finding-volume-of-combined-prisms?from=mtp_lesson
(CRP8)

Children's books:
https://www.the-best-childrens-books.org/math-for-kids.html

More additional texts:
www.newsela.com
www.readworks.org
www.commonlit.org

Type I Measurement and Data

- **CCSS Lesson Plan:** Measurement of Volume
- **CCSS Prescriptive Lesson Plan:** Volume Three Ways

5th grade assessments, interactive, videos, games, lessons, homework:
https://www.opened.com/search?area=mathematics&grade=5&offset=0&resource_type=interactive-assessment
(CRP2, CRP4, CRP8)

5th grade worksheets, games, lessons, activities:
https://www.education.com/resources/fifth-grade/
(CRP2, CRP4, CRP8)

5th grade worksheets:
https://www.k5learning.com/free-math-worksheets/fifth-grade-5
(CRP2, CRP4, CRP8)

5th grade common core worksheets:
https://www.ixl.com/math/grade-5
(CRP2, CRP4, CRP8)

**Khan Academy –
videos, lessons,
assessments
www.khanacademy.org**
(8.1.5.A.1)

**Volume unit (complete
with planner,
standards, pre-
assessments, activities,
answer keys):**
https://www.sausd.us/cm
s/lib/CA01000471/Centri
city/Domain/107/VOLU
ME%20UNIT.pdf

Chapter 11 (11.2 only)				
5.G.A.1 **Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number**	**Topics** Graphing an equation. Twenty-First Century Themes and Skills include: • Creativity and Innovation • Critical Thinking and Problem Solving • Communication and Collaboration	**Math in Focus does not address this standard. Supplemental Materials are needed to teach this standard.** 5.G.A.1 Battle Ship Using Grid Paper **Math Playground** http://www.mathplaygrou nd.com/	**SE -5B:** 131-138 **Workbook 5B:** 85-88 **Common Core Focus Lesson Appendix** **Think Central**: Online access to all Math in Focus materials listed above and Virtual Manipulatives **Professional Resources:**	**Formative Assessments:** • Do Now • Exit Ticket • Math Journal Entries (CRP4) • Math notebook (NJSLSA.W2.) • Calendar skills • Observations • Discussions: in groups, have students explain

indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).

5.G.A.2. **Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.**

5.MD.B.2. **Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.* Math in Focus does not**

Objectives

The students will be able to:
- Read points on a coordinate grid.
- Plot points on a coordinate grid
- Graph an equation

Math Coach – Fact Fluency
http://schoolwires.henry.k12.ga.us/Page/21865

Math Wire – Basic Facts Link
http://mathwire.com/numbersense/bfactslinks.html

Math Fact Practice
http://www.playkidsgames.com/games/mathfact/mathFact.htm

Graphing points and pictures worksheets, 1 and 4 quadrants:
http://www.math-aids.com/Graphing/

Treasure map – graphing on a coordinate plane game:
https://www.education.com/game/treasure-map-graphing/
(8.1.5.A.1)

Children's books:
https://www.the-best-childrens-books.org/math-for-kids.html

More additional texts:
www.newsela.com

5th grade assessments,

The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.

Lesson and Component Walkthrough:
www.hmhelearning.com

Technology Resources
- Math in Focus eBooks
- Math in Focus Teacher Resources CD

Standards Solution Lessons:
- **PARCC Lesson 17:** Practice PARCC Type I - Geometry
- **CCSS Lesson Plan:** Coordinate Connections
- **PARCC Lesson 17**: Practice PARCC Type I – Geometry
- **CCSS Prescriptive Lesson Plan:** Graph and Compare
- **PARCC Lesson 13**: Performance-Based Assessment Modeling and Justification

different ways of solving problems (CRP4)
- Multiple choice / short answer assessments
- Mini quizzes – assess just one topic, or what was done within 1 or 2 days (CRP8)

Summative Assessments:

Math in Focus Assessments

Chapter Review/Test – pp 155-156 (11.2 only)

Assessments 5 – pp.103-111 (11.2 only)

ExamView Assessment Suite – Test and Practice Generator

Alternative Assessments:
Learning centers: each learning center focuses on a different type of problem

address this standard. Supplemental Materials are needed to teach this standard.

Mathematical Practices
MP.1, MP.2, MP.3, MP.4, MP.6, MP.7

www.readworks.org
www.commonlit.org

interactive, videos, games, lessons, homework:
https://www.opened.com/search?area=mathematics&grade=5&offset=0&resource_type=interactive-assessment
(CRP2, CRP4, CRP8)

5th grade worksheets, games, lessons, activities:
https://www.education.com/resources/fifth-grade/
(CRP2, CRP4, CRP8)

5th grade worksheets:
https://www.k5learning.com/free-math-worksheets/fifth-grade-5
(CRP2, CRP4, CRP8)

5th grade common core worksheets:
https://www.ixl.com/math/grade-5
(CRP2, CRP4, CRP8)

Khan Academy – videos, lessons, assessments
www.khanacademy.org
(8.1.5.A.1)

Key Vocabulary:
Chapter 9:
dividend, per unit, estimate, divisor

Chapter 15:
unit cube, volume

Chapter 11.2
coordinate grid, x-axis, y-axis, coordinate plane, coordinates, ordered pair, x-coordinate, y-coordinate, origin, straight line graph, equation

Accommodations and Modifications:

Students with special needs: Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered. Additional staff should be included so all students can fully participate in the standards associated with this curriculum.

ELL/ESL students: Students will be supported according to the recommendations for "can do's" as outlined by WIDA - https://www.wida.us/standards/CAN_DOs/

Students at risk of school failure: Formative and summative data will be used to monitor student success at first signs of failure. Student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations. More time will be made available with a certified instructor to aid students in reaching the standards.

Gifted and Talented Students: Students excelling in mastery of standards will be challenged with complex, high level challenges**.**

English Language Learners:	Special Education:	At-Risk:	Gifted and Talented:
- Teaching modeling - Peer modeling - Word walls - Give directions in small steps and in as few words as possible - Provide visual aids - Group similar problems together - Repeat directions when necessary - Provide a vocabulary list	- Utilize modifications & accommodations delineated in the students' IEP - Work with paraprofessional - Work with a partner - Shorten assignments to focus on mastery or key concepts - Maintain adequate space between desks - Keep workspaces clear of unrelated materials - Provide fewer problems to	- Use visual demonstrations, illustrations and models - Give directions / instructions verbally and in simple written format - Peer support - Increased one – on – one time - Teachers may modify instructions by modeling what the student is expected to do - Instructions may be printed	- Inquiry based instruction - Independent study - Higher order thinking skills - Adjusting the pace of the lessons - Real world scenarios - Student driven instruction - Allow students to complete an independent project as an alternative test

with definitions	attain passing grades • Tape a number line to the students desk • Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments • Provide extra time to complete a task when needed • Provide definitions of different graphs / charts with illustrations • Allow tests to be taken in a separate room • Allow students to use a calculator when appropriate • Divide test into small sections of similar questions or problems	out in large print and hung up for the students to see during the time of the lesson • Review behavior expectations and made adjustments • Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments • Allow students to complete an independent project as an alternative test	

Interdisciplinary Connections: ELA

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content
NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Integration of Technology Standards NJSLS:

8.1.5.A.1: Select and use the appropriate digital tools and resources to accomplish a variety of tasks including problem solving

21st Century Standards
9.2.8.B.3
Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

Career Ready Practices:

CRP2: Apply appropriate academic and technical skills
CRP4: Communicate clearly and effectively and with reason
CRP6: Demonstrate creativity and innovation
CRP8: Utilize critical thinking to make sense of problems and persevere in solving them

Major Supporting Additional (Identified by PARCC Model Content Frameworks)