Englewood Public School District Mathematics Grade 5 First Marking Period

Unit – Whole Numbers

Overview: During this unit, students will learn about whole numbers, whole number multiplication and division, and fractions and mixed numbers.

Time Frame: Chapter 1 – 9 days; Chapter 2 – 19 days, Chapter 3 – 13 days

(Pacing includes 1 day for Chapter Opener pages if needed.)

Enduring Understandings:

Whole numbers can be written in different ways.

Numbers can be compared and rounded, according to their place value.

Patterns can be used to help you multiply and divide numbers.

Numeric expressions can be simplified using the order of operations.

Multiplication and division can be used to solve real-world problems.

Add and subtract unlike fractions and mixed numbers by rewriting them with like denominators.

Essential Questions:

How does the position of a digit in a number affect its value?

How can place value help you to recognize numbers and number patterns?

To what extent can mathematics model the real world?

What do numbers mean?

What makes a computational strategy both effective and efficient?

What strategies are needed to add and subtract fractions?

How is adding and subtracting fractions different than whole numbers?

Standards	Topics and Objectives	Activities	Resources	Assessments / Alternative Assessment
Chapter 1 (Skip Lesson 1.4)				

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.

Mathematical Practices MP.1, MP.2, MP.3, MP.6, MP.8

Topic

Writing whole numbers in different forms and comparing and rounding numbers according to their place value.

Twenty-First Century
Themes and Skills include:

- <u>Creativity and</u> Innovation
- <u>Critical Thinking and</u> Problem Solving
- <u>Communication and</u> Collaboration

Objectives

Students will be able to:

- Count by ten thousands and hundred thousands to 10,000,000.
- Use place value charts to show numbers to 10,000,000.
- Read and write numbers to 10,000,000 in standard and word form
- Identify the place value of any digit in numbers to 10,000,000.
- Read and write numbers to 10,000,000 in expanded form.
- Compare and order numbers to 10,000,000.
- Identify and complete a

5.NBT.A.1 Which number is it? 5.NBT.A.1 Millions and Billions of People

Math Playground

http://www.mathplayground.com/

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

Math Wire – Basic Facts Link http://mathwire.com/nu mbersense/bfactslinks.h tml

Math Fact Practice http://www.playkidsga mes.com/games/mathfac t/mathFact.htm

Learnzillion Resources:

https://learnzillion.com/re sources/72778-recognizethe-value-of-digits-in-amulti-digit-number-5-nbta-1

Critical Thinking and Problem Solving p.35: Put on Your Thinking Cap!

Everything you need to

SE -5A: 5-24; 37-40 **Workbook 5A:** 1-14; 25-26

Common Core Focus Lesson Appendix

Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives https://www-k6.thinkcentral.com

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: 5.NBT.A.1.:

- PARCC Lesson 15: Practice PARCC Type I Number and Operations in Base Ten
- CCSS Lesson Plans:

Unit 1 Benchmark Assessments:

- Common Formative Assessment
- Exact Path

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

Summative Assessments:

Math in Focus Assessments

Chapter Review/Test – pp. 38-40

number pattern. know about math Rounding Whole Find a rule for a number Numbers and Decimals Assessments 5 - pp. 5-7journals: https://thecornerstonefort pattern. eachers.com/math-5th grade assessments, ExamView Assessment interactive, videos, games, Suite - Test and Practice journals/ (NJSLSA.R1, lessons, homework: Generator NJSLSA.W2, https://www.opened.com/se NJSLSA.L1) arch?area=mathematics&gra **Alternative Assessments:** de=5&offset=0&resource ty Learning centers: each Children's books: learning center focuses on pe=interactive-assessment https://www.the-best-(CRP2, CRP4, CRP8, a different type of problem childrens-8.1.5.A.3) (CRP8) books.org/math-for-5th grade worksheets, kids.html Create posters illustrating the main objectives of the games, lessons, activities: https://www.education.com/ More additional texts: unit www.newsela.com resources/fifth-grade/ (CRP2, CRP4, CRP8, www.readworks.org Create a dictionary 8.1.5.A.3) defining and illustrating www.commonlit.org vocabulary terms 5th grade worksheets: https://www.k5learning.com /free-math-worksheets/fifthgrade-5 (CRP2, CRP4, CRP8, 8.1.5.A.3) 5th grade common core worksheets: https://www.ixl.com/math/g rade-5 (CRP2, CRP4, CRP8, 8.1.5.A.3) Khan Academy - videos, lessons, assessments

www.khanacademy.org

(8.1.5.A.3)

Chapter 2 (skip Lesson 2.1)

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 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 wholenumber exponents to denote powers of 10.

5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm.

Topic

Using patterns to help multiply and divide, simplifying numeric expressions using order of operations, and solving realworld problems using multiplication or division.

Twenty-First Century
Themes and Skills include:

- <u>Creativity and Innovation</u>
- <u>Critical Thinking and</u> Problem Solving
- <u>Communication and</u> <u>Collaboration</u>

Objectives

Students will be able to:

• Multiply numbers by 10, 100, or 1,000 using patterns.

5.NBT.B.5 Elmer's Multiplication Error

Math Playground
http://www.mathplayground.com/

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

Math Wire – Basic Facts Link http://mathwire.com/nu mbersense/bfactslinks.ht ml

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

Critical Thinking and Problem Solving p.109:

SE -5A: 51-113

Workbook 5A: 29-78

Common Core Focus Lesson Appendix

Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives https://www-k6.thinkcentral.com

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

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

Summative Assessments:

5.NBT.B.6 Find wholenumber quotients of whole numbers with up to fourdigit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.

5.OA.B.3. Generate two numerical patterns using two

- Multiply numbers up to 4-digits by multiples of 10, 100, or 1,000.
- Use rounding to estimate products.
- Multiply a 2-, 3-, or 4digit number by a 2digit number.
- Divide numbers by 10, 100, or 1,000 using patterns.
- Divide numbers up to 4-digits by multiples of 10, 100, or 1,000.
- Use rounding and related multiplication facts to estimate quotients.
- Divide a 2-, 3-, or 4digit number by a 2digit number.
- Use order of operations to simplify a numeric expression.
- Evaluate numerical expressions with parentheses, brackets, and braces.
- Use efficient strategies to solve multi-step problems involving multiplication and division.
- Express and interpret the product or quotient appropriately.

Put on Your Thinking Cap!

Everything you need to know about math journals:

https://thecornerstoneforte achers.com/math-journals/ (NJSLSA.R1, NJSLSA.W2, NJSLSA.L1)

Children's books:

https://www.the-bestchildrens-books.org/mathfor-kids.html

More additional texts:

www.newsela.com www.readworks.org www.commonlit.org

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

Standards Solution Lessons: 5.NBT.A.2:

- PARCC Lesson 15: Practice PARCC Type I Number and Operations in Base Ten
- CCSS Lesson Plans:
 Patterns in Multiplying
 by Powers of Ten

5.NBT.B.5:

- PARCC Lesson 15:
 Practice PARCC Type I
 Number and Operations in Base Ten
- PARCC Lesson 17:
 Performance-Based
 Assessment Number and
 Operations in Base Ten
 Multi-digit Values
- Using the Standard
 Algorithm to Multiply
 Multi-Digit Whole
 Numbers

5.NBT.B.6:

- PARCC Lesson 15:
 Practice PARCC Type I Number and Operations in Base Ten
- PARCC Lesson 17: Performance-Based

Math in Focus Assessments

Chapter Review/Test – pp. 112-113

Assessments 5 - pp. 13-16

ExamView Assessment Suite – Test and Practice Generator

Alternative Assessments:

Learning centers: each learning center focuses on a different type of problem (CRP8)

Create posters illustrating the main objectives of the unit

Create a dictionary defining and illustrating vocabulary terms

given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Mathematical Practices MP.1, MP.2, MP.3, MP.4, MP.5, MP.6, MP.7, MP.8 Assessment Number and Operations in Base Ten Multi-digit Values

• CCSS Lesson Plans:

An Introduction to Dividing Multi-digit Whole Numbers

• CCSS Prescriptive Lesson: Division of Four-Digit Whole Numbers

5th grade assessments, interactive, videos, games, lessons, homework: https://www.opened.com/sea rch?area=mathematics&grad e=5&offset=0&resource_typ e=interactive-assessment (CRP2, CRP4, CRP8, 8.1.5.A.3)

5th grade worksheets, games, lessons, activities: https://www.education.com/r esources/fifth-grade/ (CRP2, CRP4, CRP8, 8.1.5.A.3)

5th grade worksheets:

https://www.k5learning.com/ free-math-worksheets/fifthgrade-5 (CRP2, CRP4, CRP8, 8.1.5.A.3)

5th grade common core worksheets:

https://www.ixl.com/math/gr ade-5 (CRP2, CRP4, CRP8, 8.1.5.A.3)

Khan Academy – videos, lessons, assessments www.khanacademy.org (8.1.5.A.3)

Chapter 3

5.NF.A.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)

5.NF.A.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to

Topic

Adding and subtracting unlike fractions and mixed numbers, and understanding the relationships among fractions, mixed numbers, division expressions, and decimals.

Twenty-First Century
Themes and Skills include:

- <u>Creativity and</u> Innovation
- <u>Critical Thinking and</u> Problem Solving
- <u>Communication and</u> Collaboration

Objectives

Students will able to:

 Add two unlike fractions where one denominator is not a multiple of the other. 5.NF.A.1 Making S'Mores 5.NF.A.2 Do These Add Up? 5.NF.A Measuring Cups

Math Playground
http://www.mathplayground.com/

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

Math Wire – Basic Facts Link http://mathwire.com/nu mbersense/bfactslinks.ht ml

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

Critical Thinking and

SE-5A: 122-159 **Workbook 5A:** 93-128

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 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

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

Summative Assessments:

estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.

5.NF.B.3. Interpret a fraction as division of the numerator by the denominator $(a/b = a \div b)$. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?

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

- Estimate sums of fractions.
- Subtract two unlike fractions where one denominator is not a multiple of the other.
- Estimate differences between fractions.
- Understand and apply the relationships between fractions, mixed numbers, and division expressions.
- Express fractions, division expressions, and mixed numbers as decimals.
- Add mixed numbers with or without renaming.
- Estimate sums of mixed numbers.
- Subtract mixed numbers with or without renaming.
- Estimate differences between mixed numbers.

Problem Solving p.155: Put on Your Thinking

Put on Your Thinking Cap!

Reading and Writing Math

Math Journal p. 154

Everything you need to know about math journals:

https://thecornerstoneforte achers.com/math-journals/ (NJSLSA.R1, NJSLSA.W2, NJSLSA.L1)

Children's books:

https://www.the-bestchildrens-books.org/mathfor-kids.html

More additional texts:

www.newsela.com www.readworks.org www.commonlit.org

Standards Solution Lessons:

- PARCC Lesson 8: Selected-Response Strategies Multiple Response
- PARCC Lesson 11: Implement a Performance-Based Pre-Assessment
- PARCC Lesson 16:
 Practice PARCC Type I
 Number and Operations
 Fractions
- PARCC Lesson 11:
 Implement a
 Performance-Based Pre-Assessment
- PARCC Lesson 16:
 Practice PARCC Type I
 Number and Operations
 – Fractions
- PARCC Lesson 18:
 Performance-Based
 Assessment Number and
 Operations-Fractions

5th grade assessments, interactive, videos, games, lessons, homework:

https://www.opened.com/sea rch?area=mathematics&grad e=5&offset=0&resource_typ e=interactive-assessment (CRP2, CRP4, CRP8, 8.1.5.A.3)

Math in Focus Assessments

Chapter Review/Test- pp. 158-159

Assessments 5 - pp. 21-24

ExamView Assessment Suite – Test and Practice Generator

Alternative Assessments:

Learning centers: each learning center focuses on a different type of problem (CRP8)

Create posters illustrating the main objectives of the unit

Create a dictionary defining and illustrating vocabulary terms 5th grade worksheets,
games, lessons, activities:
https://www.education.com/r
esources/fifth-grade/
(CRP2, CRP4, CRP8,
8.1.5.A.3)

5th grade worksheets:

https://www.k5learning.com/ free-math-worksheets/fifthgrade-5 (CRP2, CRP4, CRP8, 8.1.5.A.3)

5th grade common core worksheets:

https://www.ixl.com/math/gr ade-5 (CRP2, CRP4, CRP8, 8.1.5.A.3)

Khan Academy – videos, lessons, assessments www.khanacademy.org (8.1.5.A.3)

Key Vocabulary:

Chapter 1:

hundred thousand, standard form, word form, periods, million, place value, expanded form, greater than(>), less than (<)

Chapter 2:

product, factor, quotient, dividend, divisor, remainder, numeric expression, order of operations

Chapter 3:

multiple, least common multiple, least common denominator, equivalent, benchmarks, division expression, mixed number

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:

- 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 with definitions

Special Education:

- 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 attain passing grades
- Tape a number line to the student's desk
- Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments

At-Risk:

- 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 out in large print and hung up for the students to see during the time of the lesson
- Review behavior expectations and make adjustments
- Create a math journal that

Gifted and Talented:

- 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

•	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

- 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.3 Use a graphic organizer to organize information about problem or issue.

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)