

Englewood Public School District
Mathematics
Grade 3
Fourth Marking Period

Unit - Fluency and In-Depth Review

Overview: During this unit, students will learn about money, multiplication and review of fluency and in-depth standards.

Time Frame: Chapter 10 – 10 days, Chapter 7 – 10 days, Review of Grade 3 Fluency and In-depth Standards – 16 days
(Pacing includes 1 day for Chapter Opener pages if needed.)

Enduring Understandings:

You can add and subtract money the same way you add and subtract whole numbers.

Mental math can be used to multiply.

Numbers up to 3 digits can be multiplied with or without regrouping.

Essential Questions:

Why is it important to know how to add and subtract money?

How can you use multiplication facts that you know to figure out facts that you do not know?

Why is it important to know multiplication facts mentally?

Standards	Topics and Objectives	Activities	Resources	Assessments
Chapter 10				
3.NBT.A.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. <i>Mathematical Practices</i> MP.1, MP.2, MP.4, MP.5,	<p style="text-align: center;">Topics</p> <p>Adding and subtracting money.</p> <p>Twenty-First Century Themes and Skills include:</p> <ul style="list-style-type: none"> • <u>Creativity and Innovation</u> • <u>Critical Thinking and Problem Solving</u> 	<p>Math Playground http://www.mathplayground.com/</p> <p>Math Coach – Fact Fluency http://schoolwires.henry.k12.ga.us/Page/21865</p> <p>Math Wire – Basic Facts Link</p>	<p>SE-3B: 4-26 Workbook 3B: 1-22</p> <p>Common Core Focus Lesson Appendix</p> <p>Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives</p>	<p>Formative Assessments:</p> <ul style="list-style-type: none"> • Do Now • Exit Ticket • Math Journal Entries (CRP4) • Math notebook (NJSLA.W2.) • Calendar skills • Observations • Discussions: in groups, have

MP.6, MP.8

- Communication and Collaboration

Objectives

Students will be able to:

- Add money in different ways without regrouping.
- Add money in different ways with regrouping.
- Subtract money in different ways without regrouping.
- Subtract money in different ways with regrouping.

<http://mathwire.com/numbersense/bfactslinks.html>

Math Fact Practice

<http://www.playkidsgames.com/games/mathfact/mathFact.htm>

Critical Thinking and Problem Solving p.27:
Put on Your Thinking Cap!

Money activities (read each description for explanation of activity):
<http://www.teachhub.com/classroom-activities-teach-money-skills>
(NJSLSA.R1, NJSLSA.RI.7, NJSLSA.W2, NJSLSA.L1, 9.2.4.A.2)

Money bags:
<http://www.mathblaster.com/parents/math-activities/view-all-math-activities/money-bags-view>
(NJSLSA.R1, NJSLSA.RI.7, NJSLSA.W2, SL, NJSLSA.L1, 9.2.4.A.2)

The coin man:
[http://www.mathblaster.com/parents/math-](http://www.mathblaster.com/parents/math-activities/view-all-math-)

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

Arizona Flip Book:

http://www.azed.gov/azcommoncore/files/2012/11/3flipbookedited_2.pdf

North Carolina Dept of Ed. Wikispaces:

<http://maccss.ncdpi.wikispaces.net/Elementary>

3rd grade classroom

assessments:

https://www.opened.com/search?area=mathematics&grade=3&resource_type=assessment

Adapted Mind (registration required):

<http://www.adaptedmind.com/gradelist.php?grade=3>

students explain different ways of solving problems (CRP4)

Summative Assessments: *Math in Focus Assessments*

- Chapter Review/Test – pp 25-26
- Assessments 3 – pp.73-76
- ExamView Assessment Suite – Test and Practice Generator
- Performance Task

Benchmark Assessment:

- Exact Path

Alternative Assessments:

- Online assessments:
https://www.opened.com/search?area=mathematics&grade=3&resource_type=assessment
(CRP2, CRP4, CRP8)
- Learning centers: each learning center focuses on a different type of problem

activities/the-coin-man-view

(NJSLSA.R1, NJSLSA RI.7, NJSLSA.W2, NJSLSA.L1, 9.2.4.A.2)

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

Super teacher (registration required):
<https://www.superteacherworksheets.com/perimeter.html>

Texts and activities centered around money (debt, savings, tax):

<https://www.takechargeamerica.org/financial-education/teaching-resources/third-grade/>
(NJSLSA.R1, NJSLSA RI.7, NJSLSA.W2, NJSLSA.L1, 9.2.4.A.2)

Worksheets, games, lessons, activities:

<https://www.education.com/resources/third-grade/math/>
(CRP2, CRP4, CRP8)

3rd grade classroom assessments:

https://www.opened.com/search?area=mathematics&grade=3&resource_type=assessment
(CRP2, CRP4, CRP8)

3rd grade worksheets:

<https://www.k5learning.com/free-math-worksheets/third-grade-3>
(CRP2, CRP4, CRP8)

- Graphic Organizers
<https://www.understood.org/en/school-learning/learning-at-home/homework-study-skills/download-graphic-organizers-to-help-kids-with-math>
(8.1.5.A.3)
- Performance Assessment
(demonstrate using play money)

Chapter 7

3.NBT.A.3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.

3.OA.A.4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = ?$.*

3.OA.B.5. Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$.*

Topics

Mental math can be used to multiply. Numbers with up to 3 digits can be multiplied with or without regrouping.

Twenty-First Century Themes and Skills include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

Objectives

Students will be able to:

- Multiply ones, tens, and hundreds mentally.
- Multiply ones, tens and hundreds without regrouping.
- Multiply ones, tens and hundreds with regrouping

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/numbersense/bfactslinks.html>

Math Fact Practice

<http://www.playkidsgames.com/games/mathfact/mathFact.htm>

Critical Thinking and Problem Solving p.210:

Put on Your Thinking Cap!

Multiplication worksheets:

<http://www.tlsbooks.com/hird-grade-multiplication-division.htm> (CRP8)

Children’s books:

<https://www.the-best-childrens-books.org/math-for-kids.html>

SE-3A: 191-213

Workbook 3A: 119-140

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

Arizona Flip Book:

http://www.azed.gov/azcomoncore/files/2012/11/3flipbookedited_2.pdf

North Carolina Dept of Ed. Wikispaces:

<http://maccss.ncdpi.wikispaces.net/Elementary>

Formative Assessments:

- Do Now
- Exit Ticket
- Math Journal Entries (CRP4)
- Math notebook (NJSLA.W2.)
- Calendar skills
- Observations
- Discussions: in groups, have students explain different ways of solving problems (CRP4)

Summative Assessments: Math in Focus Assessments

- Chapter Review/Test – pp 212-213
- Assessments 3 – pp. 44-46
- ExamView Assessment Suite – Test and Practice Generator
- Performance Task

Alternative Assessments:

- Online assessments: <https://www.opened.com/search?area>

(Distributive property.)

3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

Mathematical Practices
MP.1, MP.2, MP.4, MP.5,
MP.6, MP.8

More additional texts:

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

Adapted Mind (registration required):

<http://www.adaptedmind.com/gradelist.php?grade=3>

Super teacher (registration required):
<https://www.superteacherworksheets.com/perimeter.html>

Worksheets, games, lessons, activities:
<https://www.education.com/resources/third-grade/math/>
(CRP2, CRP4, CRP8)

3rd grade classroom assessments:
https://www.opened.com/search?area=mathematics&grade=3&resource_type=assessment
(CRP2, CRP4, CRP8)

3rd grade worksheets:
<https://www.k5learning.com/free-math-worksheets/third-grade-3>
(CRP2, CRP4, CRP8)

[=mathematics&grade=3&resource_type=assessment](https://www.mathworksheetsland.com/mathematics&grade=3&resource_type=assessment)
(CRP2, CRP4, CRP8)

- Learning centers: each learning center focuses on a different type of problem
- Graphic Organizers
<https://www.understood.org/en/school-learning/learning-at-home/homework-study-skills/download-graphic-organizers-to-help-kids-with-math>
(8.1.5.A.3)

<p>Fluency:</p> <p>3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</p> <p>3.NBT.A.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>In-depth Focus:</p> <p>3.OA.A.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See Table 2.)</p>	<p>Examples of Opportunities for In-Depth Focus:</p> <p>3.OA.3 Word problems involving equal groups, arrays, and measurement quantities can be used to build students' understanding of and skill with multiplication and division, as well as to allow students to demonstrate their understanding of and skill with these operations.</p> <p>3.OA.7 Finding single-digit products and related quotients is a required fluency for grade 3. Reaching fluency will take much of the year for many students. These skills and the understandings that support them are crucial; students will rely on them for years to come as they learn to multiply and divide with multi-digit whole numbers and to add, subtract, multiply, and divide with fractions. After multiplication and division situations have been established, reasoning about patterns in products (e.g., products involving factors of 5 or 9) can help students remember particular products</p>	<p>Math Playground http://www.mathplayground.com/</p> <p>Math Coach – Fact Fluency http://schoolwires.henry.k12.ga.us/Page/21865</p> <p>Math Wire – Basic Facts Link http://mathwire.com/numbersense/bfactslinks.html</p> <p>Math Fact Practice http://www.playkidsgames.com/games/mathfact/mathFact.htm</p> <p>Children's books: https://www.the-best-childrens-books.org/math-for-kids.html</p> <p>More additional texts: www.newsela.com www.readworks.org www.commonlit.org</p>	<p>Common Core Focus Lesson Appendix</p> <p>Think Central: Online access to all Math in Focus materials listed above and Virtual Manipulatives</p> <p>Professional Resources: The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.</p> <p>Lesson and Component Walkthrough: www.hmhelearning.com</p> <p>Technology Resources</p> <ul style="list-style-type: none"> Math in Focus eBooks Math in Focus Teacher Resources CD <p>Arizona Flip Book: http://www.azed.gov/azcomoncore/files/2012/11/3flipbookedited_2.pdf</p> <p>North Carolina Dept of Ed. Wikispaces: http://maccss.ncdpi.wikispaces.net/Elementary</p> <p>Adapted Mind (registration required): http://www.adaptedmind.com/gradelist.php?grade=3</p>	<p>Formative Assessments:</p> <ul style="list-style-type: none"> 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) <p>Summative Assessment: <i>Math in Focus Assessments</i></p> <ul style="list-style-type: none"> ExamView Assessment Suite – Test and Practice Generator Online assessments: https://www.opened.com/search?area=mathematics&grade=3&resource_type=assessment (CRP2, CRP4, CRP8) Learning centers: each learning center focuses on a different type of problem
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3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.

a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.

b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

and quotients. Practice — and if necessary, extra support — should continue all year for those who need it to attain fluency.

3.NF.2 Developing an understanding of fractions as numbers is essential for future work with the number system. It is critical that students at this grade are able to place fractions on a number line diagram and understand them as a related component of their ever-expanding number system.

3.MD.2 Continuous measurement quantities such as liquid volume, mass, and so on are an important context for fraction arithmetic (cf. 4.NF.4c, 5.NF.7c, 5.NF.3). In grade 3, students begin to get a feel for continuous measurement quantities and solve whole-number problems involving such quantities.

3.MD.7 Area is a major concept within measurement, and area models must function as a support for multiplicative reasoning in grade 3 and beyond.

Super teacher (registration required):
<https://www.superteacherworksheets.com/perimeter.html>

Worksheets, games, lessons, activities:
<https://www.education.com/resources/third-grade/math/>
(CRP2, CRP4, CRP8)

3rd grade classroom assessments:
https://www.opened.com/search?area=mathematics&grade=3&resource_type=assessment
(CRP2, CRP4, CRP8)

3rd grade worksheets:
<https://www.k5learning.com/free-math-worksheets/third-grade-3>
(CRP2, CRP4, CRP8)

- Graphic Organizer for Word Problems
<https://www.teacherspayteachers.com/FreeDownload/Multi-Step-Problem-Solving-Graphic-Organizer-FREEBIE-628961>
(8.1.5.A.3)

3.MD.C.7. Relate area to the operations of multiplication and addition.

a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Twenty-First Century Themes and Skills include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

Key Vocabulary:

Chapter: 7

product

NJ Learning Standards Vocabulary:

3.NBT.A.2 & 3

Use place value understanding and properties of operations to perform multi-digit arithmetic.

place value, round, addition, add, addend, sum, subtraction, subtract, difference, strategies, (properties)-rules about how numbers work.

3.OA.A.1, 2, 3, & 4

Represent and solve problems involving multiplication and division.

operations, multiplication, division, factor, product, quotient, partitioned equally, equal shares, number of groups, number in the groups, array, equation, unknown, expression

3.OA.B.5

Understand properties of multiplication and the relationship between multiplication and division.

operation, multiply, divide, factor, product, quotient, dividend, divisor, strategies, unknown, (properties)-rules about how numbers work

3.OA.C.7

Multiply and divide within 100.

operation, multiply, divide, factor, product, quotient, unknown, strategies, reasonableness, mental computation, property

3.OA.D.8 & 9

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

operation, multiply, divide, factor, product, quotient, subtract, add, addend, sum, difference, equation, expression, unknown, strategies, reasonableness, mental computation, estimation, rounding, patterns, (properties)-rules about how numbers work.

3.NF.A.2

Develop understanding of fractions as numbers.

partitioned, equal parts, fraction, equal distance (intervals)

3.MD.C.7

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

attribute, area, square unit, plane figure, gap, overlap, square cm, square m , square in., square ft, nonstandard units, tiling, side length, decomposing

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:

- Provide a vocabulary list with definitions
- 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

Special Education:

- Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments
- 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

At-Risk:

- Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments
- 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

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

	<ul style="list-style-type: none"> • Keep workspaces clear of unrelated materials • Provide fewer problems to attain passing grades • Tape a number line to the students desk • 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 	<p>what the student is expected to do</p> <ul style="list-style-type: none"> • 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 made adjustments • 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 RI.7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. 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 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community.			
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)