Grade 4 Math Curricular Framework

UNIT 1 FOCUS
Place Value, Multi-Digit Addition & Subtraction, and Foundations of Multiplication

Unit Pacing: 1st Marking Period - **Beginning of September - Beginning of November**

- **Topic 1: Generalizing Place Value Understanding**
  - Generalize place value understanding for multi-digit whole numbers
- **Topic 2: Fluently Add and Subtract Multi-Digit Whole Numbers**
  - Use place value understanding and properties of operations to perform multi-digit arithmetic
- **Topic 3: Use Strategies and Properties to Multiply by 1-Digit Numbers**
  - Use place value understanding and properties of operations to perform multi-digit arithmetic
- **Topic 4: Use Strategies and Properties to Multiply by 2-Digit Numbers**
  - Use place value understanding and properties of operations to perform multi-digit arithmetic

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE
• **4.OA.A.3** (Topic 2, 4) • **4.NBT.A.1** (Topic 1) • **4.NBT.A.2** (Topic 1) • **4.NBT.A.3** (Topics 1, 3) • **4.NBT.B.4** (Topic 2) • **4.NBT.B.5** (Topics 3, 4)	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.4** Model with mathematics. **MP.5** Use appropriate tools strategically. **MP.6** Attend to precision. **MP.7** Look for and make use of structure. **MP.8** Look for and express regularity in repeated reasoning.

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INTERDISCIPLINARY CONNECTIONS	UNIT 1 GENERAL ASSESSMENTS

21st Century Skills: Career Ready Practice Standards:
CRP1, CRP2, CRP4, CRP6, CRP8, CRP11
 	
Literature Connection:
Interactive Math Stories for each topic from Pearson 2.0
 	
STEM Connection:
Math and Science Activities (Topic 1, 2, 3, 4)
	• enVision Grade 4 Placement Test
	• enVision Grade 4 End-of-Year Benchmark Assessment (Pre-Test)
	• enVision Topic 1 Assessment: Generalize Place Value Understanding
	  ○ 4.NBT.A.1; 4.NBT.A.2; 4.NBT.A.3
	• enVision Topic 2 Assessment: Fluently Add and Subtract Multi-Digit Whole Numbers
	  ○ 4.OA.A.3; 4.NBT.B.4
	• enVision Topic 3 Assessment: Use Strategies and Properties to Multiply by 1-Digit Numbers
	  ○ 4.NBT.A.3; 4.NBT.B.5
	• enVision Topic 4 Assessment: Use Strategies and Properties to Multiply by 2-Digit Numbers
	  ○ 4.OA.A.3; 4.NBT.B.5
	
	• Possible Formative Assessments:
	  ○ Lesson's Diagnostic Questions: (indicated in Teacher's Edition - large pink check mark)
	  ○ Exit Ticket: Lesson Quick Check (Digital Resource)
	  ○ Topic Fluency Practice Activity (Student Textbook)
	  ○ Topic Vocabulary Review (Student Textbook)

RESOURCES	**TECHNOLOGY INTEGRATION**
EnVision Materials for Topic 1, 2, 3, and 4 including student edition worksheets, problem solving mat, interactive math story, vocabulary cards, and center ideas which are listed in each topic 4.OA.A.3 Carnival Tickets 4.OA.A.3, 4.MD.A.3 Karl's Garden 4.NBT.A.1 Thousands and Millions of Fourth Graders 4.NBT.A.2 Ordering 4-digit numbers 4.NBT.A.3 Rounding on the Number Line	**STANDARDS** 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose. 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). **RESOURCES** • Animated Glossary • BrainPop • BrainPop Jr. • Educreations

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4.NBT.B To regroup or not to regroup	• enVisions 2.0 • Google Classroom • Ixl.com • Kahoot • Khan Academy • Learn Zillion • Math Playground • Measuring Up Live • Popplet • Prodigy • Scholastic Study Jams • SeeSaw • That Quiz • XtraMath

KEY VOCABULARY

Topic 1: place value, millions, period, expanded form, greater than/less than, rounding, conjecture
Topic 2: commutative property of addition, associative property of addition, identity property of addition, counting on, compensation, variable, algorithm, inverse operations
Topic 3: No new vocabulary introduced
Topic 4: compatible numbers

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS

English Language Learners	Students Receiving Special Education Services	Advanced Learners
• WIDA Can Do Descriptors for Grades 4-5* • WIDA Essential Actions Handbook • FABRIC Paradigm • Wall Township ESL Grading Protocol *Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).	• New Jersey Tiered System of Supports • National Center on Universal Design for Learning - About UDL • UDL Checklist • UDL Key Terms Students within this class receiving Special Education/Section 504 programming have specific goals and objectives, as well	• Knowledge and Skill Standards in Gifted Education for All Teachers • Pre-K-Grade 12 Gifted Programming Standards • Gifted Programming Glossary of Terms

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Potential Accommodations for ELLs

- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions
- Frequent breaks
- Small group/One to one
- Additional time
- Review of directions
- Student restates information
- Extra visual and verbal cues and prompts
- Preferential seating
- Verbal and visual cues regarding directions and staying on task
- Checklists
- Immediate feedback

as accommodations and modifications outlined within their Individualized Education Plans (IEP)/504 Plans due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, instruction is differentiated based upon the student's needs. The IEP/504 Plan acts as a supplemental curriculum guide inclusive of instructional strategies that support each specific learner.

Potential Accommodations for Special Education

Presentation accommodations:

- Listen to audio recordings instead of reading text
- Pre-teach unknown vocabulary through pictures or videos, and relate to prior knowledge
- Work with fewer items per page and/or materials in a larger print size
- Use a visual blocker
- Use visual presentations of verbal material, such as word webs and visual organizers
- Be given a written list of instructions/picture cues

Response accommodations:

- Give responses in a form (oral or written) that's easier for him/her
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to give responses in class
- Use a calculator or table of "math facts"

Setting accommodations:

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he/she learns best (for example, near the teacher)
- Take a test in small group setting

Timing accommodations:

- Take more time to complete a task or a test
- Have extra time to process oral information and directions

Potential Accommodations for Advanced Learners

- Use of high level academic vocabulary/texts
- Problem-based learning
- Pre-assess to condense curriculum
- Interest-based research
- Authentic problem-solving
- Homogeneous grouping opportunities

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.

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	● Take frequent breaks, such as after completing a task **Assignment modifications**: ● Complete fewer or different homework problems than peers ● Shorten assignment ● Answer fewer or different test questions ● Create alternate projects or assignments	

At Risk Learners / Differentiation Strategies

Alternative Assessments Choice Boards Games and Tournaments Group Investigations Guided Reading Learning Contracts Leveled Rubrics Literature Circles Multiple Texts Personal Agendas	Independent Research & Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Varied Journal Prompts or RAFT Writing Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Books/Activities Mini-Workshops to Reteach or Extend Think-Pair-Share by readiness or interest Use of Collaboration of Various Activities	Jigsaw Think-Tac-Toe Cubing Activities Exploration by Interest Flexible Grouping Goal-Setting with Students Homework Options Open-Ended Activities Use of Reading Buddies Varied Product Choices Stations/Centers Work Alone/Together

CONTENT STANDARD	SUGGESTED MATHEMATICAL PRACTICES	CRITICAL KNOWLEDGE & SKILLS
● 4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation	● MP.1 Make sense of problems and persevere in solving them. ● MP.2 Reason abstractly and quantitatively. ● MP.4 Model with mathematics. ● MP.7 Look for and make use of structure.	*Students will:* ● solve multi-step word problems involving any of the four operations. ● solve multi-step word problems involving interpretation (in context) of a remainder. ● write equations to represent multi-step word problems, using a letter to represent the unknown quantity. ● explain why an answer is reasonable. ● use mental computation and estimation strategies to determine whether an answer is reasonable.

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strategies including rounding. *(benchmarked)		
• 4.NBT.A.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *Example: Recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.* *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.	• MP.7 Look for and make use of structure.	*Students will:* • Explain that a digit in one place represents ten times what it would represent in the place to its right.
• 4.NBT.A.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.	• MP.7 Look for and make use of structure.	*Students will:* • read and write multi-digit whole numbers using base-ten numerals. • read and write multi-digit whole numbers using number names. • read and write multi-digit whole numbers using expanded form. • compare two multi-digit numbers using >, =, and < symbols.
• 4.NBT.A.3. Use place value understanding to round multi-digit whole numbers to any place. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.	• MP.7 Look for and make use of structure.	*Students will:* • round whole numbers to any place.

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• 4.NBT.B.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] *(benchmarked)	• MP.7 Look for and make use of structure. • MP.8 Look for and express regularity in repeated reasoning.	*Students will:* • add multi-digit whole numbers using the standard algorithm with accuracy and efficiency. • subtract multi-digit whole numbers using the standard algorithm with accuracy and efficiency.
• 4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.	• MP.7 Look for and make use of structure.	*Students will:* • multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values. • multiply two two-digit numbers using strategies based on place value. • represent these operations with equations, rectangular arrays, and area models. • explain the calculation by referring to the model (equation, array, or area model).

Grade 4 Math Curricular Framework

UNIT 2 FOCUS
Foundations of Division, Factors & Multiples, and Fraction Equivalence & Ordering

Unit Pacing: 2nd Marking Period - **Beginning of November - Middle of January**

- **Topic 5: Use Strategies and Properties to Divide by 1-Digit Numbers**
  - Use place value understanding and properties of operations to perform multi-digit arithmetic
- **Topic 6: Use Operations with Whole Numbers to Solve Problems**
  - Use the four operations with whole numbers to solve problems
- **Topic 7: Factors and Multiples**
  - Gain familiarity with factors and multiples
- **Topic 8: Extend Understanding of Fraction Equivalence and Ordering**
  - Extend understanding of fraction equivalence and ordering

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE
• **4.OA.A.1** (Topic 6) • **4.OA.A.2** (Topic 6) • *4.OA.A.3* (Topics 5, 6) • **4.OA.B.4** (Topic 7) • *4.NBT.B.5* (Topics 6, 7) • **4.NBT.B.6** (Topics 5, 6) • **4.NF.A.1** (Topic 8) • **4.NF.A.2** (Topic 8)	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.4** Model with mathematics. **MP.5** Use appropriate tools strategically. **MP.6** Attend to precision. **MP.7** Look for and make use of structure. **MP.8** Look for and express regularity in repeated reasoning.

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INTERDISCIPLINARY CONNECTIONS	UNIT 2 GENERAL ASSESSMENTS

21st Century Skills: Career Ready Practice Standards:
CRP1, CRP2, CRP4, CRP6, CRP8, CRP11
 	
Literature Connection:
Interactive Math Stories for each topic from Pearson 2.0
 	
STEM Connection:
Math and Science Activities (Topic 5, 6, 7, 8)
	• enVision Topic 5 Assessment: Use Strategies and Properties to Divide by 1-Digit Numbers
	  ○ 4.OA.A.3; 4.NBT.B.6
	• enVision Topic 6 Assessment: Use Operations with Whole Numbers to Solve Problems
	  ○ 4.OA.A.1; 4.OA.A.2; 4.OA.A.3; 4.NBT.B.5; 4.NBT.B.6
	• enVision Topic 7 Assessment: Factors and Multiples
	  ○ 4.OA.B.4; 4.NBT.B.5
	• enVision Topic 8 Assessment: Extend Understanding of Fraction Equivalence and Ordering
	  ○ 4.NF.A.1; 4.NF.A.2
	
	• Possible Formative Assessments:
	  ○ Lesson's Diagnostic Questions: (indicated in Teacher's Edition - large pink check mark)
	  ○ Exit Ticket: Lesson Quick Check (Digital Resource)
	  ○ Topic Fluency Practice Activity (Student Textbook)
	  ○ Topic Vocabulary Review (Student Textbook)

RESOURCES	**TECHNOLOGY INTEGRATION**
EnVision Materials for Topic 5, 6, 7 and 8 including student edition worksheets, problem solving mat, interactive math story, vocabulary cards, and center ideas which are listed in each topic 4.OA.A.2 Comparing Money Raised 4.OA.A.3 Carnival Tickets 4.OA.A.3, 4.MD.A.3 Karl's Garden 4.OA.B Identifying Multiples 4.OA.B Numbers in a Multiplication Table 4.NBT.B To regroup or not to regroup 4.NBT.B.6 Mental Division Strategy	**STANDARDS** 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose. 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). **RESOURCES** • Animated Glossary • BrainPop • BrainPop Jr. • Educreations • enVisions 2.0 • Google Classroom

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4.NF.A.1 Explaining Fraction Equivalence with Pictures 4.NF.A.1 Fractions and Rectangles 4.NF.A.2 Comparing Fractions Using Benchmarks Game 4.NF.A.2 Doubling Numerators and Denominators	• Ixl.com • Kahoot • Khan Academy • Learn Zillion • Math Playground • Measuring Up Live • Popplet • Prodigy • Scholastic Study Jams • SeeSaw • That Quiz • XtraMath

KEY VOCABULARY

Topic 5: remainder, partial quotients
Topic 6: No new vocabulary introduced
Topic 7: factor, factor pairs, multiple. generalize, prime number, composite number
Topic 8: equivalent fractions, fraction, numerator, denominator, common factor, benchmark fraction

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS

English Language Learners	Students Receiving Special Education Services	Advanced Learners
• WIDA Can Do Descriptors for Grades 4-5* • WIDA Essential Actions Handbook • FABRIC Paradigm • Wall Township ESL Grading Protocol *Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).	• New Jersey Tiered System of Supports • National Center on Universal Design for Learning - About UDL • UDL Checklist • UDL Key Terms Students within this class receiving Special Education/Section 504 programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP)/504 Plans due to an identified disability and/or diagnosis. In addition to exposure	• Knowledge and Skill Standards in Gifted Education for All Teachers • Pre-K-Grade 12 Gifted Programming Standards • Gifted Programming Glossary of Terms

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Potential Accommodations for ELLs

- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions
- Frequent breaks
- Small group/One to one
- Additional time
- Review of directions
- Student restates information
- Extra visual and verbal cues and prompts
- Preferential seating
- Verbal and visual cues regarding directions and staying on task
- Checklists
- Immediate feedback

to the general education curriculum, instruction is differentiated based upon the student's needs. The IEP/504 Plan acts as a supplemental curriculum guide inclusive of instructional strategies that support each specific learner.

Potential Accommodations for Special Education

Presentation accommodations:

- Listen to audio recordings instead of reading text
- Pre-teach unknown vocabulary through pictures or videos, and relate to prior knowledge
- Work with fewer items per page and/or materials in a larger print size
- Use a visual blocker
- Use visual presentations of verbal material, such as word webs and visual organizers
- Be given a written list of instructions/picture cues

Response accommodations:

- Give responses in a form (oral or written) that's easier for him/her
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to give responses in class
- Use a calculator or table of "math facts"

Setting accommodations:

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he/she learns best (for example, near the teacher)
- Take a test in small group setting

Timing accommodations:

- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Assignment modifications:

- Complete fewer or different homework problems than

Potential Accommodations for Advanced Learners

- Use of high level academic vocabulary/texts
- Problem-based learning
- Pre-assess to condense curriculum
- Interest-based research
- Authentic problem-solving
- Homogeneous grouping opportunities

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.

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	peers ● Shorten assignment ● Answer fewer or different test questions ● Create alternate projects or assignments	

At Risk Learners / Differentiation Strategies

Alternative Assessments Choice Boards Games and Tournaments Group Investigations Guided Reading Learning Contracts Leveled Rubrics Literature Circles Multiple Texts Personal Agendas	Independent Research & Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Varied Journal Prompts or RAFT Writing Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Books/Activities Mini-Workshops to Reteach or Extend Think-Pair-Share by readiness or interest Use of Collaboration of Various Activities	Jigsaw Think-Tac-Toe Cubing Activities Exploration by Interest Flexible Grouping Goal-Setting with Students Homework Options Open-Ended Activities Use of Reading Buddies Varied Product Choices Stations/Centers Work Alone/Together

CONTENT STANDARD	SUGGESTED MATHEMATICAL PRACTICES	CRITICAL KNOWLEDGE & SKILLS
● 4.OA.A.1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	● MP.2 Reason abstractly and quantitatively. ● MP.4 Model with mathematics.	*Students will:* ● explain multiplication equations as comparisons. ● write multiplication equations given word problems indicating multiplicative comparison.
● 4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the	● MP.1 Make sense of problems and persevere in solving them. ● MP.4 Model with mathematics.	*Students will:* ● multiply to solve word problems involving multiplicative comparison.

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unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	• MP.5 Use appropriate tools strategically.	• divide to solve word problems involving multiplicative comparison. • represent problems with drawings and equations, using a symbol for the unknown number. • distinguish word problems involving multiplicative comparison from those involving additive comparison.
• 4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. *(benchmarked)	• MP.1 Make sense of problems and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.4 Model with mathematics. • MP.7 Look for and make use of structure.	*Students will:* • solve multi-step word problems involving any of the four operations. • solve multi-step word problems involving interpretation (in context) of a remainder. • write equations to represent multi-step word problems, using a letter to represent the unknown quantity. • explain why an answer is reasonable. • use mental computation and estimation strategies to determine whether an answer is reasonable.
• 4.OA.B.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	• MP.2 Reason abstractly and quantitatively. • MP.7 Look for and make use of structure. • MP.8 Look for and express regularity in repeated reasoning.	*Students will:* • find all factor pairs for any whole number (between 1 and 100). • given a one-digit number, determine whether a given whole number (between 1 and 100) is a multiple of the one-digit number. • determine whether a given whole number (between 1 and 100) is prime or composite.
• 4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on	• MP.7 Look for and make use of structure.	*Students will:* • multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values.

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place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.		• multiply two two-digit numbers using strategies based on place value. • represent these operations with equations, rectangular arrays, and area models. • explain the calculation by referring to the model (equation, array, or area model).
• 4.NBT.B.6. Find whole-number quotients and remainders with up to four-digit dividends and one-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. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.	• MP.7 Look for and make use of structure. • MP.8 Look for and express regularity in repeated reasoning.	*Students will:* • find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors using strategies based on place value, the properties of operations, and the relationship between multiplication and division. • represent these operations with equations, rectangular arrays, and area models. • explain the calculation by referring to the model (equation, array, or area model).
• 4.NF.A.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.1 Make sense of problems and persevere in solving them. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure.	*Students will:* • explain, using visual fraction models, why two fractions are equivalent. • generate equivalent fractions, using fraction a/b as equivalent to fraction $(n \times a)/(n \times b)$.

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• 4.NF.A.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.1 Make sense of problems and persevere in solving them. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure.	*Students will:* • create common denominators in order to compare two fractions. • create common numerators in order to compare two fractions. • compare two fractions with different numerators and different denominators by comparing to a benchmark fraction. • record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

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UNIT 3 FOCUS
Fractions, Decimals, and Measurement

Unit Pacing: 3rd Marking Period - **Middle of January - End of March**

- **Topic 9: Understanding Addition and Subtraction of Fractions**
  - Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers
- **Topic 10: Extend Multiplication Concepts to Fractions**
  - Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers
- **Topic 12: Understand and Compare Decimals**
  - Understand decimal notation for fractions, and compare decimal fractions
- **Topic 13: Measurement: Find Equivalence in Units of Measure**
  - Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE
• *4.NBT.B.4* (Topic 13) • *4.NBT.B.5* (Topic 13) • **4.NF.B.3a, b, c, d** (Topics 9, 10, 13) • **4.NF.B.4a, b, c** (Topics 10, 13) • **4.NF.C.5** (Topic 12) • **4.N.F.C.6** (Topic 12) • **4.NF.C.7** (Topic 12) • **4.MD.A.1** (Topic 13) • **4.MD.A.2** (Topics 10, 12, 13) • **4.MD.A.3** (Topic 13)	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.4** Model with mathematics. **MP.5** Use appropriate tools strategically. **MP.6** Attend to precision. **MP.7** Look for and make use of structure. **MP.8** Look for and express regularity in repeated reasoning.

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INTERDISCIPLINARY CONNECTIONS	UNIT 3 GENERAL ASSESSMENTS

21st Century Skills: Career Ready Practice Standards:
CRP1, CRP2, CRP4, CRP6, CRP8, CRP11
 	
Literature Connection:
Interactive Math Stories for each Topic from Pearson 2.0
 	
STEM Connection:
Math and Science Activities (Topic 9, 10, 12, 13)
	• enVision Topic 9 Assessment: Understand Addition and Subtraction of Fractions
	  ○ 4.NF.B.3a, b, c, d
	• enVision Topic 10 Assessment: Extend Multiplication Concepts to Fractions
	  ○ 4.NF.B.3d; 4.NF.B.4a, b, c; 4.MD.A.2
	• enVision Topic 12 Assessment: Understand and Compare Decimals
	  ○ 4.NF.C.5; 4.NF.C.6; 4.NF.C.7; 4.MD.A.2
	• enVision Topic 13 Assessment: Measurement: Find Equivalence in Units of Measure
	  ○ 4.NBT.B.4; 4.NBT.B.5; 4.NF.B.3d; 4.NF.B.4c; 4.MD.A.1; 4.MD.A.2; 4.MD.A.3
	
	• Possible Formative Assessments:
	  ○ Lesson's Diagnostic Questions: (indicated in Teacher's Edition - large pink check mark)
	  ○ Exit Ticket: Lesson Quick Check (Digital Resource)
	  ○ Topic Fluency Practice Activity (Student Textbook)
	  ○ Topic Vocabulary Review (Student Textbook)

RESOURCES	**TECHNOLOGY INTEGRATION**
EnVision Materials for Topic 9, 10, 12, and 13 including student edition worksheets, problem solving mat, interactive math story, vocabulary cards, and center ideas which are listed in each topic 4.OA.A.3, 4.MD.A.3 Karl's Garden 4.NBT.B To regroup or not to regroup 4.NF.B.3a Comparing Sums of Unit Fractions 4.NF.B.3b making 22 Seventeenths in Different Ways 4.NF.B.3c Cynthia's Perfect Punch 4.NF.B.3c Peaches	**STANDARDS** 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose. 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). **RESOURCES** • Animated Glossary • BrainPop • BrainPop Jr. • Educreations • enVisions 2.0

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4.NF.B.4 Extending Multiplication From Whole Numbers to Fractions 4.NF.B.4c Sugar in six cans of soda 4.NF.C.5 Adding Tenths and Hundredths 4.NF.C.6 Dimes and Pennies 4.NF.C.6 Expanded Fractions and Decimals 4.NF.C.7 Using Place Value 4.MD.A.1 Who is the tallest? 4.MD.A.2 Margie Buys Apples	• Google Classroom • Ixl.com • Kahoot • Khan Academy • Learn Zillion • Math Playground • Measuring Up Live • Popplet • Prodigy • Scholastic Study Jams • SeeSaw • That Quiz • XtraMath

KEY VOCABULARY

Topic 9: decompose, compose, mixed number
Topic 10: unit fraction
Topic 13: capacity, quart, gallon, cup, pint, fluid ounce, weight, ounce, pound, ton, millimeter, centimeter, meter, kilometer, mass, millitter, liter, gram, milligram, kilogram, perimeter, area, formula

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS

English Language Learners	Students Receiving Special Education Services	Advanced Learners
• WIDA Can Do Descriptors for Grades 4-5* • WIDA Essential Actions Handbook • FABRIC Paradigm • Wall Township ESL Grading Protocol *Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).	• New Jersey Tiered System of Supports • National Center on Universal Design for Learning - About UDL • UDL Checklist • UDL Key Terms Students within this class receiving Special Education/Section 504 programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP)/504 Plans due to an	• Knowledge and Skill Standards in Gifted Education for All Teachers • Pre-K-Grade 12 Gifted Programming Standards • Gifted Programming Glossary of Terms

Grade 4 Math Curricular Framework

Potential Accommodations for ELLs

- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions
- Frequent breaks
- Small group/One to one
- Additional time
- Review of directions
- Student restates information
- Extra visual and verbal cues and prompts
- Preferential seating
- Verbal and visual cues regarding directions and staying on task
- Checklists
- Immediate feedback

identified disability and/or diagnosis. In addition to exposure to the general education curriculum, instruction is differentiated based upon the student's needs. The IEP/504 Plan acts as a supplemental curriculum guide inclusive of instructional strategies that support each specific learner.

Potential Accommodations for Special Education

Presentation accommodations:
- Listen to audio recordings instead of reading text
- Pre-teach unknown vocabulary through pictures or videos, and relate to prior knowledge
- Work with fewer items per page and/or materials in a larger print size
- Use a visual blocker
- Use visual presentations of verbal material, such as word webs and visual organizers
- Be given a written list of instructions/picture cues

Response accommodations:
- Give responses in a form (oral or written) that's easier for him/her
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to give responses in class
- Use a calculator or table of "math facts"

Setting accommodations:
- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he/she learns best (for example, near the teacher)
- Take a test in small group setting

Timing accommodations:
- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Assignment modifications:

Potential Accommodations for Advanced Learners

- Use of high level academic vocabulary/texts
- Problem-based learning
- Pre-assess to condense curriculum
- Interest-based research
- Authentic problem-solving
- Homogeneous grouping opportunities

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.

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	• Complete fewer or different homework problems than peers • Shorten assignment • Answer fewer or different test questions • Create alternate projects or assignments	

At Risk Learners / Differentiation Strategies

Alternative Assessments Choice Boards Games and Tournaments Group Investigations Guided Reading Learning Contracts Leveled Rubrics Literature Circles Multiple Texts Personal Agendas	Independent Research & Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Varied Journal Prompts or RAFT Writing Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Books/Activities Mini-Workshops to Reteach or Extend Think-Pair-Share by readiness or interest Use of Collaboration of Various Activities	Jigsaw Think-Tac-Toe Cubing Activities Exploration by Interest Flexible Grouping Goal-Setting with Students Homework Options Open-Ended Activities Use of Reading Buddies Varied Product Choices Stations/Centers Work Alone/Together

CONTENT STANDARD	SUGGESTED MATHEMATICAL PRACTICES	CRITICAL KNOWLEDGE & SKILLS
• 4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. *Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.	• MP.7 Look for and make use of structure.	*Students will:* • multiply a whole number of up to four digits by a one-digit whole number using strategies based on place values. • multiply two two-digit numbers using strategies based on place value. • represent these operations with equations, rectangular arrays, and area models. • explain the calculation by referring to the model (equation, array, or area model).

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• 4.NF.B.3. Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. 4.NF.B.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. 4.NF.B.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.* *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100. 4.NF.B.3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. 4.NF.B.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. *Grade 4 expectations in this domain are	• MP.1 Make sense of problems and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure.	*Students will:* • decompose a fraction into a sum of fractions with the same denominator in more than one way. • write decompositions of fractions as an equation. • develop visual fraction models that represent decomposed fractions and use them to justify decompositions. • add and subtract fractions having like denominators in order to solve real world problems. • develop visual fraction models and write equations to represent real world problems involving addition and subtraction of fractions. • add and subtract mixed numbers with like denominators

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limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.		
• 4.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 4.NF.B.4a. Understand a fraction *a*/*b* as a multiple of 1/*b*. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).* 4.NF.B.4b. Understand a multiple of *a*/*b* as a multiple of 1/*b*, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)* 4.NF.B.4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?* *Grade 4 expectations in this domain are limited to	• MP.1 Make sense of problems and persevere in solving them. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically. • MP.7 Look for and make use of structure.	*Students will:* • represent *a/b* as a x (1/*b*) using a visual fraction model. • represent *n × (a/b) as (n × a)/b* in a visual fraction model. • multiply a fraction by a whole number. • solve real world problems by multiplying a fraction by a whole number, using visual fraction models and equations to represent the problem.

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denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.		
• 4.NF.C.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100. *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.7 Look for and make use of structure.	*Students will:* • add two fractions with respective denominators of 10 and 100 using equivalent fractions.
• 4.NF.C.6. Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.* *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.7 Look for and make use of structure.	*Students will:* • write a decimal as a fraction that has a denominator of 10 or 100.
• 4.NF.C.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.5 Use appropriate tools strategically. • MP.7 Look for and make use of structure.	*Students will:* • represent a decimal using a model. • compare two decimals to hundredths by reasoning about their size. • explain that comparisons are valid only when the two decimals refer to the same whole. • record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual model).

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• 4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).*	• MP.5 Use appropriate tools strategically. • MP.8 Look for and express regularity in repeated reasoning.	*Students will:* • express measurements of a larger unit in terms of a smaller unit (within a single measurement system) (e.g. convert hours to minutes, kilometers to centimeters, etc). • generate a two-column table to record measurement equivalents.
• 4.MD.A.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	• MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically.	*Students will:* • solve word problems (using addition, subtraction and multiplication) involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals. • solve word problems (using all four operations) involving whole number distances, intervals of time, liquid volumes, masses of objects, and money, including problems requiring expressing measurements given in a larger measurement unit in terms of a smaller measurement unit (conversion). • construct diagrams (e.g. number line diagrams) to represent measurement quantities.
• 4.MD.A.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*	• MP.2 Reason abstractly and quantitatively. • MP.5 Use appropriate tools strategically.	*Students will:* • solve real world and mathematical problems by finding the area of rectangles using a formula. • solve real world and mathematical problems by finding the perimeter of rectangles using a formula.

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UNIT 4 FOCUS
Interpreting Data; Concepts of Lines & Angles, and Patterns in Algebra

Unit Pacing: 4th Marking Period - **End of March - Middle of June**

- **Topic 11: Represent and Interpret Data on Line Plots**
  - Represent and interpret data
- **Topic 15: Geometric Measurement: Understand Concepts of Angles and Angle Measurement**
  - Geometric measurement: understand concepts of angle and measure angles.
- **Topic 16: Lines, Angles, and Shapes**
  - Draw and identify lines and angles, and classify shapes by properties of their lines and angles
- **Topic 14: Algebra: Generate and Analyze Patterns**
  - Generate and analyze patterns

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE
• **4.OA.C.5** (Topic 14) • *4.NF.A.1* (Topic 11) • *4.NF.B.3d* (Topic 11) • **4.MD.B.4** (Topic 11) • **4.MD.C.5a, b** (Topic 15) • **4.MD.C.6** (Topic 15) • **4.MD.C.7** (Topic 15) • **4.G.A.1** (Topics 15, 16) • **4.G.A.2** (Topic 16) • **4.G.A.3** (Topic 16)	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.4** Model with mathematics. **MP.5** Use appropriate tools strategically. **MP.6** Attend to precision. **MP.7** Look for and make use of structure. **MP.8** Look for and express regularity in repeated reasoning.

Grade 4 Math Curricular Framework

INTERDISCIPLINARY CONNECTIONS	UNIT 4 GENERAL ASSESSMENTS

21st Century Skills: Career Ready Practice Standards:
CRP1, CRP2, CRP4, CRP6, CRP8, CRP11
 	
Literature Connection:
Interactive Math Stories for each Topic from Pearson 2.0
 	
STEM Connection:
Math and Science Activities (Topic 11, 15, 16, 14)
	• enVision Grade 4 End-of-Year Benchmark Assessment
	• enVision Topic 11 Assessment: Represent and Interpret Data on Line Plots
	  ○ 4.NF.A.1; 4.NF.B.3d; 4.MD.B.4
	• enVision Topic 15 Assessment: Geometric Measurement: Understand Concepts of Angles and Angle Measurement
	  ○ 4.MD.C.5a, b; 4.MD.C.6; 4.MD.C.7; 4.G.A.1
	• enVision Topic 16 Assessment: Lines, Angles, and Shapes
	  ○ 4.G.A.1; 4.G.A.2; 4.G.A.3
	• enVision Topic 14 Assessment: Algebra: Generate and Analyze Patterns
	  ○ 4.OA.C.5
	
	• Possible Formative Assessments:
	  ○ Lesson's Diagnostic Questions: (indicated in Teacher's Edition - large pink check mark)
	  ○ Exit Ticket: Lesson Quick Check (Digital Resource)
	  ○ Topic Fluency Practice Activity (Student Textbook)
	  ○ Topic Vocabulary Review (Student Textbook)

RESOURCES	**TECHNOLOGY INTEGRATION**
EnVision Materials for Topic 11, 15, 16, and 14 including student edition worksheets, problem solving mat, interactive math story, vocabulary cards, and center ideas which are listed in each topic 4.OA.C.5 Double Plus One 4.NF.A.1 Explaining Fraction Equivalence with Pictures 4.NF.A.1 Fractions and Rectangles 4.MD.C.6, 4.MD.C.7, 4.G.A.1 Measuring Angles 4.MD.C.7, 4.G.A.2 Finding an unknown angle 4.G.A.1 The Geometry of Letters	**STANDARDS** 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose. 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). **RESOURCES** • Animated Glossary • BrainPop • BrainPop Jr. • Educreations • enVisions 2.0

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4.G.A.1 What's the Point? 4.G.A.2 Are these right? 4.G.A.2 Defining Attributes of Rectangles and Parallelograms 4.G.A.3 Finding Lines of Symmetry 4.G.A.3 Lines of symmetry for triangles	• Google Classroom • Ixl.com • Kahoot • Khan Academy • Learn Zillion • Math Playground • Measuring Up Live • Popplet • Prodigy • Scholastic Study Jams • SeeSaw • That Quiz • XtraMath

KEY VOCABULARY

Topic 11: line plot, outlier
Topic 15: point, line, line segment, ray, right angle, acute angle, obtuse angle, straight angle, degree, unit angle, angle measure, protractor, vertex
Topic 16: parallel lines, perpendicular lines, intersecting lines, right triangle, obtuse triangle, acute triangle, equilateral triangle, isosceles triangle, scalene triangle, parallelogram, rectangle, square, rhombus, trapezoid, line symmetric, line of symmetry
Topic 14: rule, repeating pattern

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS

English Language Learners	Students Receiving Special Education Services	Advanced Learners
• WIDA Can Do Descriptors for Grades 4-5* • WIDA Essential Actions Handbook • FABRIC Paradigm • Wall Township ESL Grading Protocol *Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).	• New Jersey Tiered System of Supports • National Center on Universal Design for Learning - About UDL • UDL Checklist • UDL Key Terms Students within this class receiving Special Education/Section 504 programming have specific goals and objectives, as well as accommodations and modifications outlined within their	• Knowledge and Skill Standards in Gifted Education for All Teachers • Pre-K-Grade 12 Gifted Programming Standards • Gifted Programming Glossary of Terms

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Potential Accommodations for ELLs

- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions
- Frequent breaks
- Small group/One to one
- Additional time
- Review of directions
- Student restates information
- Extra visual and verbal cues and prompts
- Preferential seating
- Verbal and visual cues regarding directions and staying on task
- Checklists
- Immediate feedback

Individualized Education Plans (IEP)/504 Plans due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, instruction is differentiated based upon the student's needs. The IEP/504 Plan acts as a supplemental curriculum guide inclusive of instructional strategies that support each specific learner.

Potential Accommodations for Special Education

Presentation accommodations:

- Listen to audio recordings instead of reading text
- Pre-teach unknown vocabulary through pictures or videos, and relate to prior knowledge
- Work with fewer items per page and/or materials in a larger print size
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- Give responses in a form (oral or written) that's easier for him/her
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to give responses in class
- Use a calculator or table of "math facts"

Setting accommodations:

- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he/she learns best (for example, near the teacher)
- Take a test in small group setting

Timing accommodations:

- Take more time to complete a task or a test
- Have extra time to process oral information and directions
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Potential Accommodations for Advanced Learners

- Use of high level academic vocabulary/texts
- Problem-based learning
- Pre-assess to condense curriculum
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- Authentic problem-solving
- Homogeneous grouping opportunities

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.

Grade 4 Math Curricular Framework

	Assignment modifications: ● Complete fewer or different homework problems than peers ● Shorten assignment ● Answer fewer or different test questions ● Create alternate projects or assignments	

At Risk Learners / Differentiation Strategies

Alternative Assessments Choice Boards Games and Tournaments Group Investigations Guided Reading Learning Contracts Leveled Rubrics Literature Circles Multiple Texts Personal Agendas	Independent Research & Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Varied Journal Prompts or RAFT Writing Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Books/Activities Mini-Workshops to Reteach or Extend Think-Pair-Share by readiness or interest Use of Collaboration of Various Activities	Jigsaw Think-Tac-Toe Cubing Activities Exploration by Interest Flexible Grouping Goal-Setting with Students Homework Options Open-Ended Activities Use of Reading Buddies Varied Product Choices Stations/Centers Work Alone/Together

CONTENT STANDARD	SUGGESTED MATHEMATICAL PRACTICES	CRITICAL KNOWLEDGE & SKILLS
● 4.OA.C.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to*	● MP.8 Look for and express regularity in repeated reasoning.	*Students will*: ● produce number patterns from a given rule. ● produce shape patterns from a given rule. ● analyze a sequence of numbers in order to identify features that are not obvious explicitly stated in the rule.

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alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.		
• 4.NF.A.1. Explain why a fraction *a*/*b* is equivalent to a fraction (*n* × *a*)/(*n* × *b*) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.1 Make sense of problems and persevere in solving them. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure.	*Students will:* • explain, using visual fraction models, why two fractions are equivalent. • generate equivalent fractions, using fraction *a*/*b* as equivalent to fraction (*n* × *a*)/(*n* × *b*).
• 4.NF.B.3. Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. 4.NF.B.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. *Grade 4 expectations in this domain are limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.	• MP.1 Make sense of problems and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments and critique the reasoning of others. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically. • MP.6 Attend to precision. • MP.7 Look for and make use of structure.	*Students will:* • decompose a fraction into a sum of fractions with the same denominator in more than one way. • write decompositions of fractions as an equation. • develop visual fraction models that represent decomposed fractions and use them to justify decompositions. • add and subtract fractions having like denominators in order to solve real world problems. • develop visual fraction models and write equations to represent real world problems involving addition and subtraction of fractions. • add and subtract mixed numbers with like denominators

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● 4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*	● MP.4 Model with mathematics. ● MP.5 Use appropriate tools strategically.	Students are able to: ● given a data set consisting of measurements in fractions of a unit, create a line plot. ● using measurement information presented in line plots, add and subtract fractions with like denominators in order to solve problems.
● 4.MD.C.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. 4.MD.C.5a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles. 4.MD.C.5b. An angle that turns through *n* one-degree angles is	● MP.2 Reason abstractly and quantitatively.	*Students will:* ● describe an angle as measured with reference to a circle with the center of the circle being the common endpoint of the rays. ● explain a ‘one-degree angle’ and its relation to a circle; a “degree” is defined as 1/360 (one degree angle) of the entire circle.

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said to have an angle measure of *n* degrees.		
● 4.MD.C.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	● MP.2 Reason abstractly and quantitatively. ● MP.5 Use appropriate tools strategically.	*Students will*: ● measure angles in whole-number degrees. ● given an angle measure, sketch the angle.
● 4.MD.C.7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	● MP.1 Make sense of problems and persevere in solving them. ● MP.7 Look for and make use of structure.	*Students will:* ● add and subtract to find unknown angles on a diagram in real world and mathematical problems. ● write an equation with a symbol for the unknown angle measure.
● 4.G.A.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	● MP.5 Use appropriate tools strategically. ● MP.7 Look for and make use of structure.	*Students will:* ● draw points, lines, line segments and rays. ● draw angles (right, acute, obtuse). ● draw perpendicular and parallel lines. ● distinguish between lines, line segments, and rays. ● identify points, lines, line segment, rays, right angles, acute angles, obtuse angles, perpendicular lines and parallel lines in two-dimensional figures.
● 4.G.A.2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.	● MP.5 Use appropriate tools strategically. ● MP.7 Look for and make use of structure.	*Students will:* ● classify triangles based on the presence or absence of perpendicular lines and based on the presence or absence of angles of a particular size.

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Recognize right triangles as a category, and identify right triangles.		● classify quadrilaterals based on the presence or absence of parallel or perpendicular lines and based on the presence or absence of angles of a particular size.
● 4.G.A.3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	● MP.5 Use appropriate tools strategically. ● MP.7 Look for and make use of structure.	*Students will:* ● fold a figure along a line in order to create matching parts. ● identify lines of symmetry as a line across the figure such that the figure can be folded along the line into matching parts. ● identify figures having line symmetry. ● draw lines of symmetry.