



**Baldwin-Whitehall School District**  
**UNIT OF INSTRUCTION OVERVIEW**

**General Course Information**

<b>Course Title:</b>	<b>1st Grade Mathematics</b>	<b>Course Code:</b>	
<b>Pre-requisites:</b>	<b>Kindergarten Mathematics</b>	<b>Time Allocated Per Unit:</b> <i>(Based on 165 days of instruction)</i>	<b>Average of 11 days</b>
<b>Authors:</b>	<b>Tamara Rellick and Katie Richter</b>	<b>Last Updated:</b>	<b>7/31/15</b>
<b>Reviewed by:</b>		<b>Date Entered:</b>	<b>6/22/15</b>

**Course Description**

<ul style="list-style-type: none"> <li>• <i>What information would accurately and articulately describe what students will know and be able to do as a result of this course?</i> <ul style="list-style-type: none"> <li>○ Is the description worded in such a way that it is engaging and interesting to both students and parents?</li> <li>○ Does the description provide the essential skills and competencies that students will be able to demonstrate upon successful completion of the course?</li> <li>○ Does the description mention the duration of the course?</li> <li>○ Does the description use the title of the course within it?</li> <li>○ Does the description specifically communicate expectations of students?</li> </ul> </li> </ul>
<p>1st Grade Mathematics will focus on the 5 domains outlined in the PA Core Standards:</p> <ul style="list-style-type: none"> <li>• Operations and Algebraic Thinking</li> <li>• Number and Operations in Base Ten</li> <li>• Measurement and Data</li> <li>• Geometry</li> </ul>

<b>Unit Title 1</b>	<b>Solve Addition and Subtraction Problems to 10</b>	<b>Instructional Days Needed</b>	<b>12</b>
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>			
<p><b>CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.</b>  <b>CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.</b></p>			
<p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>• <i>Make sense of problems and persevere in solving them.</i></li> <li>• <i>Reason abstractly and quantitatively.</i></li> <li>• <i>Construct viable arguments and critique the reasoning of others.</i></li> <li>• <i>Model with mathematics.</i></li> <li>• <i>Use appropriate tools strategically.</i></li> <li>• <i>Attend to precision.</i></li> </ul>			

- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - Write big ideas in statement form, each with a new bullet point.

- Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.
- The same number sentence (e.g.,  $12 - 4 = 8$ ) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

- When solving a problem, how do we know how to solve it?
- How are addition and subtraction related?
- How, when, and why do we represent, compare, and order numbers?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Construct addition problems by adding one part to another part.
- Decompose a total number of objects to solve addition word problems.
- Compare groups to find how many more objects are in one than another by subtracting.
- Compare groups to find how many fewer objects are in one than another by subtracting.
- Solve subtraction problems involving taking from a group.
- Apply concepts to solve addition problems by finding a missing addend.
- Construct math arguments in order to solve addition and subtraction problems.

<p><b>Knowledge:</b> Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Addition equations can be used to show adding to addition situations.</li> <li>● Addition equations can be used to show situations in which two parts are put together.</li> <li>● Addition equations can be used to show addition situations where both parts are unknown.</li> <li>● Subtraction equations can be used to show subtraction situations in which one part is taken from the whole.</li> <li>● Subtraction equations can be used to show situations in which two quantities are compared.</li> <li>● Subtraction equations can be used to show situations in which two groups are compared.</li> <li>● Addition equations can be used to show adding to addition situations.</li> <li>● Addition or subtraction equations can be used to show situations involving a missing part.</li> <li>● Math talk can be used to explain problem solving.</li> </ul>
<p><b>Learning Activities</b> Students will work toward mastery of the desired outcomes by participating in:</p> <ul style="list-style-type: none"> <li>● <i>Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?</i> <ul style="list-style-type: none"> <li>○ Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.</li> <li>○ List each activity on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Whole group instruction</li> <li>● Small group instruction</li> <li>● Workbook pages</li> <li>● Math/Science projects</li> <li>● Math centers</li> <li>● Computer and ipad activities</li> <li>● Math notebooks</li> <li>● Vocabulary word cards</li> <li>● Interactive math stories</li> <li>● Math talk</li> <li>● Homework</li> </ul>
<p><b>Performance Tasks/Major Assessments:</b> Students will demonstrate understanding:</p> <ul style="list-style-type: none"> <li>● <i>Through what authentic performance tasks will students demonstrate the desired understandings?</i></li> <li>● <i>What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?</i></li> <li>● <i>By what criteria will performances of understanding be judged?</i> <ul style="list-style-type: none"> <li>○ Select the type of assessment that would best measure student knowledge and skills.</li> <li>○ Write a brief description of the assessment.</li> <li>○ Attach/upload a copy of the common major assessments for the unit of instruction.</li> <li>○ Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Daily Common Core Review</li> <li>● Quizzes</li> <li>● Topic 1 Assessments</li> <li>● Performance Assessments</li> </ul>

<p><b>Essential Vocabulary &amp; Definitions:</b></p> <ul style="list-style-type: none"> <li>• Which essential vocabulary words should every student be able to use? <ul style="list-style-type: none"> <li>○ Limit Essential Vocabulary to a maximum of 10 words per unit.</li> <li>○ Use primarily Tier 3 Vocabulary in your list.</li> <li>○ List each Essential Vocabulary term on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Add: join quantities</li> <li>• Sum: the answer to an addition equation</li> <li>• Plus: a symbol that means add</li> <li>• Subtract: taking one number away from another</li> <li>• Difference: the answer to a subtraction equation</li> <li>• Minus: a symbol that means subtract</li> <li>• Equals: a symbol that represents quantities that are the same</li> <li>• Equation: an equation says that two things are equal</li> <li>• Addend: any of the numbers that are added together</li> </ul>
<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>• What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</li> <li>• What items or strategies will be used for differentiation? <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Envision 2.0</li> <li>• Supplemental Investigations games</li> <li>• Connecting cubes</li> <li>• Counters</li> <li>• Center manipulatives</li> <li>• Ipad apps and online games</li> <li>• Digital math tools activities</li> <li>• Fluency practice activity</li> </ul>

<b>Unit Title 2</b>	<b>Fluently Add and Subtract Within 10</b>	<b>Instructional Days Needed</b>	<b>13</b>
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address? <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>			
<p><b>CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.</b>  <b>CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.</b></p>			
<p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>• <i>Make sense of problems and persevere in solving them.</i></li> <li>• <i>Reason abstractly and quantitatively.</i></li> <li>• <i>Construct viable arguments and critique the reasoning of others.</i></li> <li>• <i>Model with mathematics.</i></li> <li>• <i>Use appropriate tools strategically.</i></li> <li>• <i>Attend to precision.</i></li> <li>• <i>Look for and make use of structure.</i></li> <li>• <i>Look for and make sense of regularity in repeated reasoning</i></li> </ul>			

<p><b>Big Ideas:</b> Students will understand that:</p> <ul style="list-style-type: none"> <li>● <i>What are the big ideas?</i></li> <li>● <i>What specific understandings about them are desired?</i></li> <li>● <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.</li> <li>● Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.</li> <li>● The same number sentence (e.g., <math>12 - 4 = 8</math>) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.</li> </ul>
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>● <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>○ Essential questions are always written in question format.</li> <li>○ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>○ Please list only 2-3 essential questions in a unit of instruction.</li> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● When solving a problem, how do we know how to solve it?</li> <li>● How, when, and why do we represent, compare, and order numbers?</li> <li>● How are addition and subtraction related?</li> </ul>
<p><b>Essential Skills/Objectives:</b> Students will be skilled at:</p> <ul style="list-style-type: none"> <li>● <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Use addition by counting on from a number.</li> <li>● Relate and solve problems by using doubles and near doubles.</li> <li>● Analyze and use a ten frame to solve addition facts with 5 and 10.</li> <li>● Construct 2 different equations with the same sum using the same addends.</li> <li>● Count back to solve subtraction problems.</li> <li>● Investigate addition facts to 10 to solve subtraction problems.</li> <li>● Analyze and solve word problems by drawing pictures and writing equations.</li> <li>● Identify patterns and use structure in order to solve problems.</li> </ul>
<p><b>Knowledge:</b> Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>

- You can count on to find the sum for addition facts and a number line can help you count on.
- Doubles facts have the same number for both addends and can be used to solve problems involving real-world situations.
- Basic addition facts that are near doubles can be found using a related doubles fact.
- Facts with sums 6 through 10 can be broken into 5 plus some more.
- Two numbers can be added in any order and the sum will stay the same.
- You can count back to find the difference for subtraction facts and a number line can help you count back.
- Addition and subtraction have an inverse relationship that can be used to solve subtraction facts.
- Every subtraction fact has a related addition fact.
- Drawings and equations can help you solve different types of word problems.
- Good math thinkers look for patterns in math to help solve problems.

#### **Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

#### **Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 2 Assessments
- Performance Assessments

#### **Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Number line: a line with numbers placed in their correct position
- Doubles fact: any addition fact that has 2 addends that are the same

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Connecting cubes
- Number line
- Counters
- Number cube
- Number cards
- Bar Model
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

<b>Unit Title 3</b>	<b>Addition Facts to 20: Use Strategies</b>	<b>Instructional Days Needed</b>	<b>13</b>
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**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*
  - Select specific standards or assessment anchors that address the core of instruction.
  - Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.**  
**CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.**  
**CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*

<ul style="list-style-type: none"> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.</li> <li>• Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.</li> <li>• The same number sentence (e.g., <math>12 - 4 = 8</math>) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.</li> </ul>
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>○ Essential questions are always written in question format.</li> <li>○ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>○ Please list only 2-3 essential questions in a unit of instruction.</li> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• When solving a problem, how do we know how to solve it?</li> <li>• How, when, and why do we represent, compare, and order numbers?</li> <li>• How are addition and subtraction related?</li> </ul>
<p><b>Essential Skills/Objectives:</b></p> <p>Students will be skilled at:</p> <ul style="list-style-type: none"> <li>• <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Count on to add using a number line.</li> <li>• Count on to add using an open number line.</li> <li>• Memorize doubles facts.</li> <li>• Apply concepts of doubles facts to solve doubles-plus-one and two facts.</li> <li>• Make 10 to add numbers to 20.</li> <li>• Formulate different strategies to solve addition problems.</li> <li>• Show how to solve different types of addition word problems.</li> <li>• Critique the reasoning of others by using known information about addition and subtraction.</li> </ul>
<p><b>Knowledge:</b></p> <p>Students will know:</p> <ul style="list-style-type: none"> <li>• <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Students can solve an addition problem by using a number line to count on.</li> <li>• Students can solve addition problems by counting on an open number line.</li> <li>• Doubles facts have the same number for both addends and can be used to solve problems involving real-world situation.</li> <li>• Basic addition facts that are near doubles can be found by using a related doubles fact.</li> </ul>



- Some addition facts can be solved by changing them to an equivalent fact with 10.
- There are different ways to solve addition facts.
- Objects, drawings and equations can help you solve different types of word problems.
- Good math thinkers use math to explain why they are right.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 3 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Open number line: a number line with no markers or numbers

<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>• <i>What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</i></li> <li>• <i>What items or strategies will be used for differentiation?</i> <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Envision 2.0</li> <li>• Supplemental Investigations games</li> <li>• Number lines and open number lines</li> <li>• Connecting cubes</li> <li>• Counters</li> <li>• Ten-Frame</li> <li>• Number cards</li> <li>• Center manipulatives</li> <li>• Ipad apps and online games</li> <li>• Digital math tools activities</li> <li>• Fluency practice activity</li> </ul>

<b>Unit Title 4</b>	<b>Subtraction Facts to 20: Use Strategies</b>	<b>Instructional Days Needed</b>	<b>12</b>
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>			
<p><b>CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.</b>  <b>CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.</b>  <b>CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.</b></p> <p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>• <i>Make sense of problems and persevere in solving them.</i></li> <li>• <i>Reason abstractly and quantitatively.</i></li> <li>• <i>Construct viable arguments and critique the reasoning of others.</i></li> <li>• <i>Model with mathematics.</i></li> <li>• <i>Use appropriate tools strategically.</i></li> <li>• <i>Attend to precision.</i></li> <li>• <i>Look for and make use of structure.</i></li> <li>• <i>Look for and make sense of regularity in repeated reasoning</i></li> </ul>			
<p><b>Big Ideas:</b>  Students will understand that:</p> <ul style="list-style-type: none"> <li>• <i>What are the big ideas?</i></li> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>			

- The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.
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- The same number sentence (e.g.,  $12 - 4 = 8$ ) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

- When solving a problem, how do we know how to solve it?
- How, when, and why do we represent, compare, and order numbers?
- How are addition and subtraction related?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Use a number line to subtract by counting on or counting back.
- Make subtraction easier by making 10 to subtract.
- Count on to subtract using 10 as a landmark.
- Construct addition and subtraction facts using the same three numbers.
- Use addition facts to find subtraction facts.
- Assess and explain strategies used to solve subtraction problems.
- Apply concepts to solve different types of addition and subtraction problems with unknowns in different positions.
- Analyze information and use reasoning to write and solve number stories.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

- When using a number line to subtract, you can count back the number of spaces you are subtracting or find the distance between the two numbers.
- Some subtraction facts can be simplified by making use of the numbers' relationships to 10.
- The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has at least one related addition fact.
- There are different ways to solve subtraction facts.
- Objects, drawings and equations can help you solve different types of word problems.
- Good math thinkers know how to think about words and numbers to solve problems.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 4 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.
- Fact family: a group of numbers that are related to each other in that those numbers can be combined to create a number of equations.
- Related facts: numerical expressions which are alike in some way.

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Number lines
- Bar Model
- Counters
- Double Ten-Frame
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

Unit Title 5	Work With Addition and Subtraction Equations	Instructional Days Needed	10
<b>Competencies/Academic Standards</b> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>◦ Select specific standards or assessment anchors that address the core of instruction.</li> <li>◦ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>			
<p><b>CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.</b>  <b>CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.</b>  <b>CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.</b></p> <p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>• <i>Make sense of problems and persevere in solving them.</i></li> <li>• <i>Reason abstractly and quantitatively.</i></li> <li>• <i>Construct viable arguments and critique the reasoning of others.</i></li> <li>• <i>Model with mathematics.</i></li> <li>• <i>Use appropriate tools strategically.</i></li> <li>• <i>Attend to precision.</i></li> <li>• <i>Look for and make use of structure.</i></li> <li>• <i>Look for and make sense of regularity in repeated reasoning</i></li> </ul>			
<p><b>Big Ideas:</b>  Students will understand that:</p> <ul style="list-style-type: none"> <li>• <i>What are the big ideas?</i></li> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>◦ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>◦ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>			
<ul style="list-style-type: none"> <li>• The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.</li> <li>• Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.</li> <li>• The same number sentence (e.g., <math>12 - 4 = 8</math>) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.</li> </ul>			

**Commented [1]:** We kept jumping between different text fonts as well so I changed it all to Times New Roman but can easily change it all to something else... it allowed me to just do a "select all" to change the font without screwing up the bullets/bold font etc... Let me know what you think!

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
    - Essential questions are always written in question format.
    - Essential questions should be overarching in nature and written in language that is readily understandable.
    - Please list only 2-3 essential questions in a unit of instruction.
    - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
    - List each question in bulleted form.
- 
- When solving a problem, how do we know how to solve it?
  - How, when, and why do we represent, compare, and order numbers?
  - How are addition and subtraction related?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
    - Essential skills/objectives should be written in statement form.
    - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
    - List each skill on a new line with a bullet point.
- 
- Find the unknown number in an equation.
  - Determine if addition and subtraction equations are true or false.
  - Identify the missing numbers in equations to make them true.
  - Apply concepts of strategies to solve word problems with 3 addends.
  - Apply different strategies to add 3 numbers.
  - Analyze and solve word problems involving comparisons.
  - Use precision to determine the missing number or symbol in an equation.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
    - Knowledge statements should be written in sentence form.
    - Knowledge statements should contain nouns and key information from the unit.
    - List each concept on a new line with a bullet point.
- 
- Models and the relationship between addition and subtraction can be used to solve equations with an unknown part.
  - An addition or subtraction equation is true if the values on each side of the equal sign are the same.
  - An addition or subtraction equation is false if the values on each side of the equal sign are not the same.
  - Numbers can be grouped in different ways to solve word problems with three addends.
  - Three numbers can be grouped and added in any order.
  - Objects, drawings, diagrams and equations can help you solve different types of word problems.
  - Good math thinkers are careful about what they write and say, so their ideas about math are clear.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 5 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

None

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Number cards
- Bar Model
- Counters
- Color tiles
- Small boxes
- Connecting cubes

- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

Unit Title 6	Represent and Interpret Data	Instructional Days Needed	8
<b>Competencies/Academic Standards</b> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>◦ Select specific standards or assessment anchors that address the core of instruction.</li> <li>◦ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>			
<p><b>CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.</b>  <b>CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.</b>  <b>CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.</b>  <b>CC.2.1.B.1 Extend the counting sequence to read and write numerals to represent objects.</b>  <b>CC.2.4.1.A.4 Represent and interpret data using tables/charts.</b></p> <p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>• <i>Make sense of problems and persevere in solving them.</i></li> <li>• <i>Reason abstractly and quantitatively.</i></li> <li>• <i>Construct viable arguments and critique the reasoning of others.</i></li> <li>• <i>Model with mathematics.</i></li> <li>• <i>Use appropriate tools strategically.</i></li> <li>• <i>Attend to precision.</i></li> <li>• <i>Look for and make use of structure.</i></li> <li>• <i>Look for and make sense of regularity in repeated reasoning</i></li> </ul>			
<p><b>Big Ideas:</b>  Students will understand that:</p> <ul style="list-style-type: none"> <li>• <i>What are the big ideas?</i></li> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>◦ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>◦ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>			
<ul style="list-style-type: none"> <li>• Some questions can be answered by collecting, representing, and analyzing data, and the question to be answered determines the data to be collected, how best to collect it, and how best to represent it.</li> <li>• The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.</li> <li>• Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.</li> <li>• The same number sentence (e.g., <math>12 - 4 = 8</math>) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.</li> </ul>			
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>◦ Essential questions are always written in question format.</li> <li>◦ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>◦ Please list only 2-3 essential questions in a unit of instruction.</li> </ul> </li> </ul>			



<ul style="list-style-type: none"> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul>
<ul style="list-style-type: none"> <li>● How can visual data displays help us make connections to number relationships?</li> <li>● When solving a problem, how do we know how to solve it?</li> <li>● How, when, and why do we represent, compare, and order numbers?</li> </ul>
<p><b>Essential Skills/Objectives:</b> Students will be skilled at:</p> <ul style="list-style-type: none"> <li>● <i>What should students eventually be able to do as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Organize data into categories.</li> <li>● Collect and organize information using a picture graph.</li> <li>● Interpret organized data.</li> <li>● Analyze a picture graph to interpret data.</li> <li>● Use perseverance to solve problems about sets of data.</li> </ul>
<p><b>Knowledge:</b> Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Tally charts are useful in recording and organizing some kinds of data.</li> <li>● A picture graph uses pictures to show and organize data.</li> <li>● Some problems can be solved by making, reading, and analyzing a tally chart or picture graph.</li> <li>● Good math thinkers know what the problem is about. They have a plan to solve it. They keep trying if they get stuck.</li> </ul>
<p><b>Learning Activities</b> Students will work toward mastery of the desired outcomes by participating in:</p> <ul style="list-style-type: none"> <li>● <i>Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?</i> <ul style="list-style-type: none"> <li>○ Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.</li> <li>○ List each activity on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Whole group instruction</li> <li>● Small group instruction</li> <li>● Workbook pages</li> <li>● Math/Science projects</li> <li>● Math centers</li> <li>● Computer and ipad activities</li> <li>● Math notebooks</li> <li>● Vocabulary word cards</li> <li>● Interactive math stories</li> <li>● Math talk</li> </ul>

- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 6 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.
- Tally marks: a way of keeping count by drawing marks
- Data: a collection of facts, such as numbers, words, measurements, observations or even just descriptions of things

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Blank picture graph
- Connecting cubes
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

<b>Unit Title 7</b>	<b>Extend the Counting Sequence</b>	<b>Instructional Days Needed</b>	<b>10</b>
<b>Competencies/Academic Standards</b>			
• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i>			

- o Select specific standards or assessment anchors that address the core of instruction.
- o Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.**  
**CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.**  
**CC.2.1.1.B.2 Use place value concepts to represent amounts of tens and ones and to compare two digit numbers.**  
**CC.2.1.B.1 Extend the counting sequence to read and write numerals to represent objects.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - o Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - o Write big ideas in statement form, each with a new bullet point.
- Patterns exhibit relationships that can be extended, described, and generalized.
- The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.
- Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - o Essential questions are always written in question format.
  - o Essential questions should be overarching in nature and written in language that is readily understandable.
  - o Please list only 2-3 essential questions in a unit of instruction.
  - o Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - o List each question in bulleted form.
- How can number patterns help us understand and describe numerical relationships?
- When solving a problem, how do we know how to solve it?
- How, when, and why do we represent, compare, and order numbers?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Count by 10s to 120.
- Count by 1s to 120
- Count on a number chart to 120.
- Analyze a number chart to identify number patterns.
- Count to 120 using an open number line.
- Show how many objects are in a group by writing numerals.
- Create better and faster ways to solve problems.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

- The decade numbers are built on groups of 10. The oral names are similar, but not the same as the number of tens counted.
- Counting forward by 1s to 120 follows the same place-value counting rules as counting forward by 1s to two-digit numbers.
- Counting and place-value patterns can be seen on a number chart.
- Counting and place-value patterns can be seen on a number chart.
- An open number line can be used to show counting by tens and ones.
- The number of objects in a group is determined by the last number said when they are counted.
- A written numeral represents the number of objects in a group.
- Counting objects by tens and then ones can help you count objects faster than counting by just ones.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

<p><b>Performance Tasks/Major Assessments:</b> Students will demonstrate understanding:</p> <ul style="list-style-type: none"> <li>● <i>Through what authentic performance tasks will students demonstrate the desired understandings?</i></li> <li>● <i>What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?</i></li> <li>● <i>By what criteria will performances of understanding be judged?</i> <ul style="list-style-type: none"> <li>○ Select the type of assessment that would best measure student knowledge and skills.</li> <li>○ Write a brief description of the assessment.</li> <li>○ Attach/upload a copy of the common major assessments for the unit of instruction.</li> <li>○ Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).</li> </ul> </li> </ul>
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<ul style="list-style-type: none"> <li>● Daily Common Core Review</li> <li>● Quizzes</li> <li>● Topic 7 Assessments</li> <li>● Performance Assessments</li> </ul>
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<p><b>Essential Vocabulary &amp; Definitions:</b></p> <ul style="list-style-type: none"> <li>● <i>Which essential vocabulary words should every student be able to use?</i> <ul style="list-style-type: none"> <li>○ Limit Essential Vocabulary to a maximum of 10 words per unit.</li> <li>○ Use primarily Tier 3 Vocabulary in your list.</li> <li>○ List each Essential Vocabulary term on a separate line as a bullet point.</li> </ul> </li> </ul>
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<ul style="list-style-type: none"> <li>● Ones digit: the numeral in the ones place</li> <li>● Tens digit: the numeral in the tens place</li> <li>● Row: the horizontal line in which objects are arranged</li> <li>● Column: the vertical line in which objects are arranged</li> </ul>
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<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>● <i>What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</i></li> <li>● <i>What items or strategies will be used for differentiation?</i> <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>
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<ul style="list-style-type: none"> <li>● Envision 2.0</li> <li>● Supplemental Investigations games</li> <li>● Blank hundred chart</li> <li>● Place value blocks</li> <li>● Counters</li> <li>● 120 chart</li> <li>● Buttons</li> <li>● Counters</li> <li>● Center manipulatives</li> <li>● Ipad apps and online games</li> <li>● Digital math tools activities</li> <li>● Fluency practice activity</li> </ul>
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<b>Unit Title 8</b>	<b>Understanding Place Value</b>	<b>Instructional Days Needed</b>	<b>9</b>
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<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>● <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>
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**CC.2.1.1.B.2 Use place-value concepts to represent amounts of tens and ones and to compare two digit numbers.**

**CC.2.1.1.B.1 Extend the counting sequence to read and write numerals to represent objects.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
  - *What specific understandings about them are desired?*
  - *What misunderstandings are predictable?*
    - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
    - Write big ideas in statement form, each with a new bullet point.
- 
- The base ten system is a way to organize, represent and compare numbers using groups of tens and place value.
  - Numbers, measures, expressions, equations and inequalities can represent mathematical situations and structures in many equivalent forms.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
    - Essential questions are always written in question format.
    - Essential questions should be overarching in nature and written in language that is readily understandable.
    - Please list only 2-3 essential questions in a unit of instruction.
    - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
    - List each question in bulleted form.
- 
- How can number patterns help us understand and describe numerical relationships?
  - How can visual data displays help us make connections to number relationships?
  - How, when and why do we represent, compare, and order numbers?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Read and write numbers 11 to 19.
- Construct groups of 10 with connecting cubes.
- Organize and group tens to solve problems.
- Count tens and ones to find a two-digit number.
- Design drawings to solve problems with tens and ones.
- Apply the concept of tens and ones to make numbers in different ways.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

- Numbers 11 through 19 can be shown as a group of 10 and up to 9 more; they can be written as a number word.
- When there are only tens, counting by 10s can be used to find how many there are in all.
- Numbers can be used to tell how many objects are grouped in sets of tens and leftovers (ones). In a standard numeral, then tens are written to the left of the ones
- A drawing can show how many tens and ones are in a number.
- Good math thinkers look for patterns in math to help solve problems.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 8 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- Which essential vocabulary words should every student be able to use?
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Ten: a group of 10 ones; a decade
- Ones: a single unit

**Instructional Materials, Equipment, and Technologies**

- What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?
- What items or strategies will be used for differentiation?
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Connecting cubes
- Base Ten Blocks (Rods/units)
- Hundred Chart
- Counters
- Ten-Frame/Double Ten-Frame
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

Unit Title 9	Compare Two-Digit Numbers	Instructional Days Needed	9
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?               <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>			
<p><b>C.2.1.1.B.2 Use place-value concepts to represent amounts of tens and ones and to compare two digit numbers.</b></p>			
<p><b>CC.2.1.1.B.1 Extend the counting sequence to read and write numerals to represent objects.</b></p>			
<p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>• <i>Make sense of problems and persevere in solving them.</i></li> <li>• <i>Reason abstractly and quantitatively.</i></li> <li>• <i>Construct viable arguments and critique the reasoning of others.</i></li> </ul>			



- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - Write big ideas in statement form, each with a new bullet point.

- The base ten system is a way to organize, represent and compare numbers using groups of tens and place value.
- Numbers, measures, expressions, equations and inequalities can represent mathematical situations and structures in many equivalent forms.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

- How can number patterns help us understand and describe numerical relationships?
- How can visual data displays help us make connections to number relationships?
- How, when and why do we represent, compare, and order numbers?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Identify numbers that are more or less than a given number.
- Show patterns on a hundred chart to find 1 more, 1 less, and 10 more, 10 less.
- Construct place-value blocks representations to compare two-digit numbers.
- Compare two numbers using a greater than, less than or an equal to sign.
- Compare and write two-digit numbers that are greater than or less than other two-digit numbers.
- Analyze a problem and find the best way to solve it.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

- 1 more, 1 less, 10 more, and 10 less express a relationship between 2 numbers.
- Numbers can be represented on a hundred chart.
- For 2 two-digit numbers, the number with more tens is the greater number. If the 2 numbers have an equal number of tens, then the number with more ones is greater.
- For any two-digit number shown on a number line, the numbers to its left are less than that number and the numbers to its right are greater than that number.
- Good math thinkers make a plan to solve a problem and keep trying if they get stuck.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 9 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Greater than: a bigger quantity, represented by the symbol >
- Less than: a smaller quantity, represented by the symbol <
- Equal: even or the same, represented by the symbol =
- Compare: determining if a quantity is smaller or bigger than another

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Connecting cubes
- Base Ten Blocks (Rods/units)
- Hundred Chart
- Counters
- Ten-Frame/Double Ten-Frame
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Greater than/less than cards
- Fluency practice activity

<b>Unit Title 10</b>	<b>Use Models and Strategies to Add Tens and Ones</b>	<b>Instructional Days Needed</b>	<b>12</b>
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**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*
  - Select specific standards or assessment anchors that address the core of instruction.
  - Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

- CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.**
- CC.2.1.1.B.3 Use place-value concepts and properties of operations to add and subtract within 100.**
- CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

<p><b>Big Ideas:</b> Students will understand that:</p> <ul style="list-style-type: none"> <li>● <i>What are the big ideas?</i></li> <li>● <i>What specific understandings about them are desired?</i></li> <li>● <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● The base ten system is a way to organize, represent and compare numbers using groups of tens and place value.</li> <li>● Numbers, measures, expressions, equations and inequalities can represent mathematical situations and structures in many equivalent forms.</li> </ul>
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>● <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>○ Essential questions are always written in question format.</li> <li>○ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>○ Please list only 2-3 essential questions in a unit of instruction.</li> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● What strategies and models can we use to understand how to solve an addition or subtraction problem?</li> <li>● How can using number patterns help us add or subtract?</li> </ul>
<p><b>Essential Skills/Objectives:</b> Students will be skilled at:</p> <ul style="list-style-type: none"> <li>● <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Add 2 multiples of 10</li> <li>● Apply mental math strategies to add tens to two-digit numbers.</li> <li>● Use a hundred chart to add tens and ones</li> <li>● Construct a number line to solve addition problems.</li> <li>● Model and solve addition problems by using blocks or drawings.</li> <li>● Use the concept of "make a ten" to help solve addition problems.</li> <li>● Apply concepts and strategies to add 2 two-digit numbers.</li> <li>● Analyze and solve addition problems by using different strategies.</li> <li>● Model and solve problems by drawing a picture and writing an equation.</li> </ul>
<p><b>Knowledge:</b> Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>

- Adding groups of 10 is similar to adding numbers less than 10.
- When adding tens to a two-digit number, the tens digit changes. The ones digit remains unchanged.
- When a two-digit number is added to a one-digit number, the ones are added to the ones.
- When a two-digit number is added to a multiple of ten, the tens are added to the tens.
- When a two-digit number is added to a one-digit number, the ones are added to the ones and sometimes it is necessary to compose a ten.
- You can use different strategies to solve addition problems.
- Good math thinkers use math they know to show and solve problems.

#### **Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

#### **Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 10 Assessments
- Performance Assessments

#### **Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Open number line: a number line with no markers or numbers

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Connecting cubes
- Base Ten Blocks (Rods/units)
- Hundred Chart
- Open Number Lines
- Counters
- Ten-Frame/Double Ten-Frame
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

<b>Unit Title 11</b>	<b>Use Models and Strategies to Subtract Tens</b>	<b>Instructional Days Needed</b>	<b>10</b>
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**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*
  - Select specific standards or assessment anchors that address the core of instruction.
  - Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.**  
**CC.2.1.1.B.3 Use place-value concepts and properties of operations to add and subtract within 100.**  
**CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

<p><b>Big Ideas:</b> Students will understand that:</p> <ul style="list-style-type: none"> <li>● <i>What are the big ideas?</i></li> <li>● <i>What specific understandings about them are desired?</i></li> <li>● <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● The base ten system is a way to organize, represent and compare numbers using groups of tens and place value.</li> <li>● Numbers, measures, expressions, equations and inequalities can represent mathematical situations and structures in many equivalent forms.</li> </ul>
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>● <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>○ Essential questions are always written in question format.</li> <li>○ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>○ Please list only 2-3 essential questions in a unit of instruction.</li> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● What strategies and models can we use to understand how to solve an addition or subtraction problem?</li> <li>● How can using number patterns help us add or subtract?</li> </ul>
<p><b>Essential Skills/Objectives:</b> Students will be skilled at:</p> <ul style="list-style-type: none"> <li>● <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Use models to subtract tens.</li> <li>● Explain the reasoning used to subtract a multiple of 10 from another multiple of 10 using a hundred chart.</li> <li>● Construct and use an open number line to solve subtraction problems.</li> <li>● Relate addition problems in order to subtract tens.</li> <li>● Apply mental math strategies to subtract ten from a two-digit number.</li> <li>● Analyze and apply different strategies to subtract.</li> <li>● Justify and model thinking to solve problems.</li> </ul>
<p><b>Knowledge:</b> Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>

- Subtracting a multiple of 10 from another multiple of 10 is similar to subtracting numbers less than 10.
- Addition and subtraction have an inverse relationship. This relationship can be used to solve subtraction equations; every subtraction equation has a related addition equation.
- When subtracting tens from a two-digit number, the tens digit changes. The ones digit remains unchanged.
- You can use different strategies to solve subtraction problems.
- Good math thinkers use math they know to show and solve problems.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 11 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

None



<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>● <i>What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</i></li> <li>● <i>What items or strategies will be used for differentiation?</i> <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>● Envision 2.0</li> <li>● Supplemental Investigations games</li> <li>● Connecting cubes</li> <li>● Base Ten Blocks (Rods/units)</li> <li>● Hundred Chart</li> <li>● Open Number Lines</li> <li>● Counters</li> <li>● Ten-Frame/Double Ten-Frame</li> <li>● Center manipulatives</li> <li>● Ipad apps and online games</li> <li>● Digital math tools activities</li> <li>● Fluency practice activity</li> </ul>

<b>Unit Title 12</b>	<b>Measure Lengths</b>	<b>Instructional Days Needed</b>	<b>8</b>
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<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>● <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>
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<p><b>CC.2.4.1.A.1 Order lengths and measure them both indirectly and by repeating length units.</b></p> <p><b>Mathematical Practices:</b></p> <ul style="list-style-type: none"> <li>● <i>Make sense of problems and persevere in solving them.</i></li> <li>● <i>Reason abstractly and quantitatively.</i></li> <li>● <i>Construct viable arguments and critique the reasoning of others.</i></li> <li>● <i>Model with mathematics.</i></li> <li>● <i>Use appropriate tools strategically.</i></li> <li>● <i>Attend to precision.</i></li> <li>● <i>Look for and make use of structure.</i></li> <li>● <i>Look for and make sense of regularity in repeated reasoning</i></li> </ul>
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**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - Write big ideas in statement form, each with a new bullet point.

- Some attributes of objects are measureable, e.g., length, mass, capacity, and can be quantified.
- Two- and three-dimensional objects can be described, classified, and analyzed by their attributes, and their location can be described quantitatively.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

- How can we determine which unit of measurement to use?
- How can we accurately measure length?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Order objects by length.
- Indirectly compare objects by length.
- Measure length using a variety of objects.
- Compare lengths and heights of objects using cubes and other units.
- Analyze sets of data to solve problems.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

- Objects can be compared and ordered by length.
- Two objects can be compared indirectly by comparing both to a third object.
- Measurement is a process of comparing a unit to the object being measured.
- The length of any object can be used as a measurement unit for length.
- Objects can be measured to compare and order their lengths and heights.
- Good math thinkers know how to pick the right tools to solve math problems.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 12 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Length: the distance from one end of an object to the other
- Measure: using standard (ruler) or non-standard (cubes) units to find the length
- Longest: the object that takes the most units to measure
- Shortest: the object that takes the fewest units to measure
- Length unit: the object that you use to measure a longer object

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Envision 2.0
- Supplemental Investigations games
- Connecting cubes
- Paper Clips
- String
- Objects of varying lengths
- Rulers
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

<b>Unit Title 13</b>	<b>Time</b>	<b>Instructional Days Needed</b>	<b>7</b>
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**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*
  - Select specific standards or assessment anchors that address the core of instruction.
  - Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**CC.2.4.1.A.2 Tell and write time to the nearest half hour using both analog and digital clocks.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - Write big ideas in statement form, each with a new bullet point.

- Time is measureable and can be represented on a clock using the units of hours and minutes.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

- How do we tell time to the hour and half hour?
- How is time measured?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

- Identify time to the hour
- Use concepts to tell time to the hour using analog and digital clocks.
- State and label time to the half hour
- Use reasoning to tell and write time.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

- The hour hand tells the hour, and the minute hand tells the number of minutes after the hour.
- Time to the hour can be shown on an analog clock or on a digital clock and can be written in two ways: \_\_\_\_ o'clock or \_\_\_\_:00
- Time can be given to the half hour
- Good math thinkers know how to think about words and numbers to solve problems.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 13 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

- Hour: 60 minutes
- Hour hand: the short hand on a clock that tells what hour it is
- Minute: 60 seconds
- Minute hand: the long hand on a clock that points to the minute
- O'clock: when the minute hand on an analog clock points to 12 or the minutes on a digital clock are 00

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- Geared demonstration clock
- Student analog clocks
- Envision 2.0
- Supplemental Investigations games
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

<b>Unit Title 14</b>	<b>Reason with Shapes and Their Attributes</b>	<b>Instructional Days Needed</b>	<b>12</b>
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**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*
  - Select specific standards or assessment anchors that address the core of instruction.
  - Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**CC.2.3.1.A.1 Compose and distinguish between two- and three- dimensional shapes based on their attributes.**  
**CC.2.3.1.A.2 Use the understanding of fractions to partition shapes into halves and quarters.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning*

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.

<ul style="list-style-type: none"> <li>o Write big ideas in statement form, each with a new bullet point.</li> </ul>
<ul style="list-style-type: none"> <li>• Two- and three-dimensional objects can be described, classified, and analyzed by their attributes, and their location can be described quantitatively.</li> </ul>
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>o Essential questions are always written in question format.</li> <li>o Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>o Please list only 2-3 essential questions in a unit of instruction.</li> <li>o Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>o List each question in bulleted form.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• How can composing and decomposing shapes help us understand part-whole relationships?</li> </ul>
<p><b>Essential Skills/Objectives:</b></p> <p>Students will be skilled at:</p> <ul style="list-style-type: none"> <li>• <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>o Essential skills/objectives should be written in statement form.</li> <li>o Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.</li> <li>o List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Connect shapes by their attributes.</li> <li>• Define 2-D shapes by their attributes.</li> <li>• Construct and draw 2-D shapes.</li> <li>• Create a new 2-D shape by combining other 2-D shapes.</li> <li>• Combine plane shapes to make another plane shape.</li> <li>• Define 3-D shapes by their number of edges, vertices, and faces or flat surfaces.</li> <li>• Analyze defining attributes of 3-D shapes.</li> <li>• Create a new 3-D shape by combining other 3-D shapes.</li> <li>• Investigate differences among three-dimensional shapes.</li> </ul>
<p><b>Knowledge:</b></p> <p>Students will know:</p> <ul style="list-style-type: none"> <li>• <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>o Knowledge statements should be written in sentence form.</li> <li>o Knowledge statements should contain nouns and key information from the unit.</li> <li>o List each concept on a new line with a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Two-dimensional shapes have attributes that define them and make them different from one another.</li> <li>• Plane shapes have properties that make them different from one another. These properties can be used to create shapes.</li> <li>• Plane shapes can be combined to make new plane shapes.</li> <li>• Three-dimensional shapes have attributes that define them and make them different from one another.</li> <li>• Three-dimensional shapes can be combined to form other three-dimensional shapes or the shapes of common, everyday objects.</li> </ul>



- Good math thinkers know what the problem is about. They have a plan to solve it. They keep trying if they get stuck.

### Learning Activities

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities
- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

### Performance Tasks/Major Assessments:

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 14 Assessments
- Performance Assessments

### Essential Vocabulary & Definitions:

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.
- 2-D shapes: “flat” shapes such as circles, squares, rectangles and triangles
- Vertex/Vertices: the point where two sides meet
- Edges: formed when two faces come together
- Faces: the flat surfaces on a shape that doesn’t roll
- Three-dimensional shape: shapes such as cubes, cones, cylinders, spheres
- Rectangular prism: a 3-D shape with 6 rectangular faces, 12 edges and 8 vertices

<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>• <i>What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</i></li> <li>• <i>What items or strategies will be used for differentiation?</i> <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• 2-D shapes</li> <li>• Pattern blocks</li> <li>• 3-D shapes</li> <li>• Unit cubes</li> <li>• Envision 2.0</li> <li>• Supplemental Investigations games</li> <li>• Center manipulatives</li> <li>• Ipad apps and online games</li> <li>• Digital math tools activities</li> <li>• Fluency practice activity</li> </ul>

<b>Unit Title 15</b>	<b>Equal Shares of Circles and Rectangles</b>	<b>Instructional Days Needed</b>	<b>7</b>
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<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>
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**CC.2.3.1.A.2 Use the understanding of fractions to partition shapes into halves and quarters.**

**Mathematical Practices:**

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning.*

<p><b>Big Ideas:</b></p> <p>Students will understand that:</p> <ul style="list-style-type: none"> <li>• <i>What are the big ideas?</i></li> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>
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- Two- and three-dimensional objects can be described, classified, and analyzed by their attributes, and their location can be described quantitatively.

**Commented [2]:** So I tried to go through and make sure that the format was the same for all units... I had made mistakes with my standards and vocabulary formatting especially... I think I fixed most of it but I'm sure I've missed some things... See if you find anything else and then we can send to Andrea! :)

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.
- What are some different names for equal shares?
- How can we divide a shape into equal shares?

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.
- Determine whether shapes are divided into equal shares.
- Divide shapes into 2 and 4 equal shares and use words to describe those shares.
- Demonstrate understanding that more equal shares of the same whole creates smaller shares.
- Create a drawing to show a problem about equal shares.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.
- A region can be divided into equal sized shares in different ways.
- Equal sized shares of a region have the same area but not necessarily the same shape.
- Shapes can be divided into equal parts called halves and quarters, or fourths.
- When dividing a whole into fractions, the smaller the fractional piece, the greater the number of pieces; the larger the piece, the fewer the number of pieces.
- Good math thinkers use math the know to show and solve problems.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.
- Whole group instruction
- Small group instruction
- Workbook pages
- Math/Science projects
- Math centers
- Computer and ipad activities

- Math notebooks
- Vocabulary word cards
- Interactive math stories
- Math talk
- Homework

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

- Daily Common Core Review
- Quizzes
- Topic 15 Assessments
- Performance Assessments

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.
- Equal shares: the parts of the whole that are the same size
- Halves: a whole divided into 2 equal shares
- Fourths: a whole divided into 4 equal shares
- Quarters: the four equal shares of a whole also called fourths

**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

- 2-D shapes
- Fraction shapes
- Envision 2.0
- Supplemental Investigations games
- Center manipulatives
- Ipad apps and online games
- Digital math tools activities
- Fluency practice activity

**Unit Title 16**

**Instructional Days Needed**

**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*

- Select specific standards or assessment anchors that address the core of instruction.
- Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - Write big ideas in statement form, each with a new bullet point.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>• <i>What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</i></li> <li>• <i>What items or strategies will be used for differentiation?</i> <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>

<b>Unit Title 17</b>	<b>Instructional Days Needed</b>
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>	
<p><b>Big Ideas:</b> Students will understand that:</p> <ul style="list-style-type: none"> <li>• <i>What are the big ideas?</i></li> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>	
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>○ Essential questions are always written in question format.</li> <li>○ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>○ Please list only 2-3 essential questions in a unit of instruction.</li> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul> </li> </ul>	

<p><b>Essential Skills/Objectives:</b>  Students will be skilled at:</p> <ul style="list-style-type: none"> <li>● <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb’s Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<p><b>Knowledge:</b>  Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>
<p><b>Learning Activities</b>  Students will work toward mastery of the desired outcomes by participating in:</p> <ul style="list-style-type: none"> <li>● <i>Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?</i> <ul style="list-style-type: none"> <li>○ Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.</li> <li>○ List each activity on a separate line as a bullet point.</li> </ul> </li> </ul>
<p><b>Performance Tasks/Major Assessments:</b>  Students will demonstrate understanding:</p> <ul style="list-style-type: none"> <li>● <i>Through what authentic performance tasks will students demonstrate the desired understandings?</i></li> <li>● <i>What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?</i></li> <li>● <i>By what criteria will performances of understanding be judged?</i> <ul style="list-style-type: none"> <li>○ Select the type of assessment that would best measure student knowledge and skills.</li> <li>○ Write a brief description of the assessment.</li> <li>○ Attach/upload a copy of the common major assessments for the unit of instruction.</li> <li>○ Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).</li> </ul> </li> </ul>



<p><b>Essential Vocabulary &amp; Definitions:</b></p> <ul style="list-style-type: none"> <li>● Which essential vocabulary words should every student be able to use? <ul style="list-style-type: none"> <li>○ Limit Essential Vocabulary to a maximum of 10 words per unit.</li> <li>○ Use primarily Tier 3 Vocabulary in your list.</li> <li>○ List each Essential Vocabulary term on a separate line as a bullet point.</li> </ul> </li> </ul>
<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>● What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</li> <li>● What items or strategies will be used for differentiation? <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>

<b>Unit Title 18</b>		<b>Instructional Days Needed</b>
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>● What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address? <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>		
<p><b>Big Ideas:</b> Students will understand that:</p> <ul style="list-style-type: none"> <li>● What are the big ideas?</li> <li>● What specific understandings about them are desired?</li> <li>● What misunderstandings are predictable? <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>		

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**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

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**Essential Skills/Objectives:**  
Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

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**Knowledge:**  
Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

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**Learning Activities**  
Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

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**Performance Tasks/Major Assessments:**  
Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

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**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

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**Instructional Materials, Equipment, and Technologies**

- *What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?*
- *What items or strategies will be used for differentiation?*
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.

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<b>Unit Title 19</b>		<b>Instructional Days Needed</b>	
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**Competencies/Academic Standards**

- *What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?*
  - Select specific standards or assessment anchors that address the core of instruction.
  - Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.

**Big Ideas:**

Students will understand that:

- *What are the big ideas?*
- *What specific understandings about them are desired?*
- *What misunderstandings are predictable?*
  - Big ideas help students make sense of confusing experiences and seemingly isolated facts.
  - Write big ideas in statement form, each with a new bullet point.

**Essential Questions:**

- *What provocative questions will foster inquiry, understanding, and transfer of learning?*
  - Essential questions are always written in question format.
  - Essential questions should be overarching in nature and written in language that is readily understandable.
  - Please list only 2-3 essential questions in a unit of instruction.
  - Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.
  - List each question in bulleted form.

**Essential Skills/Objectives:**

Students will be skilled at:

- *What should students eventually be able to do as a result of such knowledge?*
  - Essential skills/objectives should be written in statement form.
  - Essential skills/objectives should contain verbs from Webb's Depth of Knowledge and lead to higher order thinking.
  - List each skill on a new line with a bullet point.

**Knowledge:**

Students will know:

- *What key knowledge will students acquire as a result of this unit?*
  - Knowledge statements should be written in sentence form.
  - Knowledge statements should contain nouns and key information from the unit.
  - List each concept on a new line with a bullet point.

**Learning Activities**

Students will work toward mastery of the desired outcomes by participating in:

- *Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?*
  - Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.
  - List each activity on a separate line as a bullet point.

**Performance Tasks/Major Assessments:**

Students will demonstrate understanding:

- *Through what authentic performance tasks will students demonstrate the desired understandings?*
- *What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?*
- *By what criteria will performances of understanding be judged?*
  - Select the type of assessment that would best measure student knowledge and skills.
  - Write a brief description of the assessment.
  - Attach/upload a copy of the common major assessments for the unit of instruction.
  - Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).

**Essential Vocabulary & Definitions:**

- *Which essential vocabulary words should every student be able to use?*
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

<p><b>Instructional Materials, Equipment, and Technologies</b></p> <ul style="list-style-type: none"> <li>• <i>What resources (textbooks, supplemental materials, shared resources, software, technology, etc.) best support learning in this unit?</i></li> <li>• <i>What items or strategies will be used for differentiation?</i> <ul style="list-style-type: none"> <li>○ List any instructional materials and resources that will be used to support learning in this unit.</li> <li>○ For print works, audio and video materials, software, etc., list the item in MLA format.</li> <li>○ List each resource on a separate line as a bullet point.</li> </ul> </li> </ul>

<b>Unit Title 20</b>	<b>Instructional Days Needed</b>
<p><b>Competencies/Academic Standards</b></p> <ul style="list-style-type: none"> <li>• <i>What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?</i> <ul style="list-style-type: none"> <li>○ Select specific standards or assessment anchors that address the core of instruction.</li> <li>○ Use Common Core, PA Academic Standards, Keystone Assessment Anchors, etc., as appropriate.</li> </ul> </li> </ul>	
<p><b>Big Ideas:</b> Students will understand that:</p> <ul style="list-style-type: none"> <li>• <i>What are the big ideas?</i></li> <li>• <i>What specific understandings about them are desired?</i></li> <li>• <i>What misunderstandings are predictable?</i> <ul style="list-style-type: none"> <li>○ Big ideas help students make sense of confusing experiences and seemingly isolated facts.</li> <li>○ Write big ideas in statement form, each with a new bullet point.</li> </ul> </li> </ul>	
<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> <ul style="list-style-type: none"> <li>○ Essential questions are always written in question format.</li> <li>○ Essential questions should be overarching in nature and written in language that is readily understandable.</li> <li>○ Please list only 2-3 essential questions in a unit of instruction.</li> <li>○ Use SAS to help identify the standards, anchors and eligible content that are aligned to the unit's essential questions.</li> <li>○ List each question in bulleted form.</li> </ul> </li> </ul>	

<p><b>Essential Skills/Objectives:</b>  Students will be skilled at:</p> <ul style="list-style-type: none"> <li>● <i>What should students eventually be able to <u>do</u> as a result of such knowledge?</i> <ul style="list-style-type: none"> <li>○ Essential skills/objectives should be written in statement form.</li> <li>○ Essential skills/objectives should contain verbs from Webb’s Depth of Knowledge and lead to higher order thinking.</li> <li>○ List each skill on a new line with a bullet point.</li> </ul> </li> </ul>
<p><b>Knowledge:</b>  Students will know:</p> <ul style="list-style-type: none"> <li>● <i>What key knowledge will students acquire as a result of this unit?</i> <ul style="list-style-type: none"> <li>○ Knowledge statements should be written in sentence form.</li> <li>○ Knowledge statements should contain nouns and key information from the unit.</li> <li>○ List each concept on a new line with a bullet point.</li> </ul> </li> </ul>
<p><b>Learning Activities</b>  Students will work toward mastery of the desired outcomes by participating in:</p> <ul style="list-style-type: none"> <li>● <i>Through what activities (academic prompts, observations, Socratic seminars, research, homework, journals, etc.) will students be able work toward achievement of the desired results?</i> <ul style="list-style-type: none"> <li>○ Select the types of activities that would best enable students to work toward achievement of the desired results throughout the unit.</li> <li>○ List each activity on a separate line as a bullet point.</li> </ul> </li> </ul>
<p><b>Performance Tasks/Major Assessments:</b>  Students will demonstrate understanding:</p> <ul style="list-style-type: none"> <li>● <i>Through what authentic performance tasks will students demonstrate the desired understandings?</i></li> <li>● <i>What type of assessment would best measure knowledge (i.e. Summative, Formative etc.)?</i></li> <li>● <i>By what criteria will performances of understanding be judged?</i> <ul style="list-style-type: none"> <li>○ Select the type of assessment that would best measure student knowledge and skills.</li> <li>○ Write a brief description of the assessment.</li> <li>○ Attach/upload a copy of the common major assessments for the unit of instruction.</li> <li>○ Attach/upload a copy of the tool that would be used to evaluate student performance (rubric, etc.).</li> </ul> </li> </ul>

**Essential Vocabulary & Definitions:**

- Which essential vocabulary words should every student be able to use?
  - Limit Essential Vocabulary to a maximum of 10 words per unit.
  - Use primarily Tier 3 Vocabulary in your list.
  - List each Essential Vocabulary term on a separate line as a bullet point.

**Instructional Materials, Equipment, and Technologies**

- What resources (*textbooks, supplemental materials, shared resources, software, technology, etc.*) best support learning in this unit?
- What items or strategies will be used for differentiation?
  - List any instructional materials and resources that will be used to support learning in this unit.
  - For print works, audio and video materials, software, etc., list the item in MLA format.
  - List each resource on a separate line as a bullet point.