

# **Agawam Public Schools**

## **Investigations**

### **Math Curriculum and Pacing Guide**

**K - 4**

**2008 - 2009**

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**Investigations**

**Math Curriculum**

**K - 4**

Agawam Public Schools  
Massachusetts Learning  
Standards

GRADE KINDERGARTEN INVESTIGATIONS  
Unit 1: Who is in School Today?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.N.1.</b> Count by ones to at least 20.</p> <p><b>K.N.2.</b> Match quantities up to at least 10 with numerals and words.</p> <p><b>K.P.1.</b> Identify the attributes of objects as foundation for sorting and classifying, e.g., a red truck, a red block, and a red ball share the attribute of being red; a square block, a square cracker, and a square book share the attribute of being square shaped.</p> <p><b>K.P.2.</b> Sort and classify objects by color, shape, size, number, and other properties.</p> <p><b>K.D.1.</b> Collect, sort, organize, and draw conclusions about data using concrete objects, pictures, numbers, and graphs.</p>	<p><b>Unit 1.</b> Who Is in School Today? p.33 Activity 1, p. 59, Activity 1</p> <p><b>Unit 1.</b> Who Is in School Today? p.48 Activity 1, p. 60 Math Workshop 2A,p.65 Activity 1, p. 87 Discussion 3, p.101 Activity 1</p> <p><b>Unit 1.</b> Who Is in School Today? p.46 Discussion 2, p. 50 Math Workshop 3, p. 67 Discussion 3, p. 71 Activity 1, p.77 Activity 1, p. 79 Math Workshop 2A</p> <p><b>Unit 1.</b> Who Is in School today? p. 73 Math Workshop 2A, p. 107 Activity 1, p. 111 Activity 1, p. 111 Math Workshop 2, p. 116 Activity 1</p> <p><b>Unit 1.</b> Who Is in School today? p. 97 Discussion 3, p. 117 Discussion 3</p>	<p>No benchmarks are included in this unit because it is the first unit of the Kindergarten year. It is designed to introduce students to school and to mathematics; to allow the teacher and class to establish routines and expectations that support learning; to develop processes and structures that students will use all year; to encourage students to problem-solve in ways that make sense to them, and to communicate teachers' interest in and respect for students' mathematical ideas.</p>	<p><b>Observation:</b> Session 1.1, pp. 28-30; Session 1.6, pp. 50-51; Session 2.1, p. 61; Session 2.3, p.73; Session 2.4, p.79; Session 3.1, p.96; Session 3.2, p.103; Session 3.4, p.112.</p> <p><b>Writing:</b> Session 3.1, p. 96 (Today's Question); Sessions 3.2-3.6, pp. 101-102, 108, 113, 117, 122 (Counting Jar).</p> <p><b>Portfolio:</b> Sessions 3.2-3.6, pp. 101-102, 108, 113, 117, 122 (Counting Jar)</p>	<p>Computer Software Online Resources</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 2: Counting & Comparing



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.N.1.</b> Count by ones to at least 20.</p> <p><b>K.N.2.</b> Match quantities up to at least 10 with numerals and words.</p> <p><b>K.N.4.</b> Compare sets of up to at least 10 concrete objects using appropriate language (e.g., none, more than, fewer than, same number of, one more than) and order numbers.</p> <p><b>K.M.1.</b> Recognize and compare the attributes of length, volume/capacity, weight, area, and time using appropriate language, e.g., longer, taller, shorter, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount.</p>	<p><b>Unit 2.</b> Counting and Comparing p. 57 Math Workshop 2</p> <p><b>Unit 2.</b> Counting and Comparing p. 112 Activity 2, p. 113 Math Workshop 3A</p> <p><b>Unit 2.</b> Counting and Comparing p. 95 Activity 1, p. 101 Activity 1, p. 108 Discussion 3, p. 122 Activity 1, p. 129 Activity 1, p. 134 Activity 1 (Length only)</p> <p><b>Unit 2.</b> Counting and Comparing p. 83 Activity 1, p. 84 Activity 2, p. 89 Discussion 2, p. 106 Activity 1, p. 125 Discussion 3, p. 131 Discussion 3</p>	<p><b>1.</b> Count a set of up to 10 objects.</p> <p><b>2.</b> Decide which of two objects is larger.</p>	<p><b>Observation:</b> Session 1.1, p. 30; Session 1.2, p. 35; Session 1.3, p. 41; Session 1.4, p. 45; Session 1.7, p. 58; Session 1.9, p. 68.</p> <p><b>Writing:</b> Session 1.2, p. 34 (Student Activity Book p. 5); Session 1.9, p. 67 (Student Activity Book p. 8).</p> <p><b>Portfolio:</b> Sessions 1.1, p. 31(M3, Assessment Checklist: Counting); Session 1.3, p. 41 (Counting Jar); Session 1.4, p. 44 (Student Activity Book p. 6); Session 1.9, p. 68 (Student Activity Book p. 8); M24, My Inventory Bag).</p> <p><b>Observation:</b> Session 2.1, pp. 85-86; Session 2.4, p. 97; Session 2.6, p. 107; Session 2.7, p. 114; Session 2.8, p. 119; Session 2.9, p. 124.</p> <p><b>Writing:</b> Session 2.1, p. 84 (Student Activity Book p. 10); Session 2.9, p. 123 (Student Activity Book p. 12)</p> <p><b>Portfolio:</b> Session 2.1, p. 87 (M26, Assessment Checklist: Comparing Lengths); Session 2.9, p. 123 (Student Activity Book p. 12).</p>	<p>Computer Software Online Resources</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 2: Counting & Comparing



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.N.2.</b> Match quantities up to at least 10 with numerals and words.</p> <p><b>K.N.4.</b> Compare sets of up to at least 10 concrete objects using appropriate language (e.g., none, more than, fewer than, same number of, one more than) and order numbers.</p> <p><b>K.M.1.</b> Recognize and compare the attributes of length, volume/capacity, weight, area, and time using appropriate language, e.g., longer, taller, shorter, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount.</p>		<p><b>3.</b> Compare two quantities up to 10 to see which is greater.</p>	<p><b>Observation:</b> Session 2.4, p. 97; Session 2.5, pp. 102-103; Session 2.6, p. 107; Session 2.7, p.114; Session 2.8, p. 119; Session 2.9, p. 124; Session 2.10, p. 130; Session 2.11, p. 136; Session 2.12, p. 140.</p> <p><b>Writing:</b> Session 2.9, p. 123 (Student Activity Book p.12); Session 2.11, p. 135 (Student Activity Book p. 15).</p> <p><b>Portfolio:</b> Session 2.4, p. 97 (M28, Assessment Checklist; Comparing Quantities);</p>	<p>Computer Software Online Resources</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 3: What Comes Next?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.P.2.</b> Sort and classify objects by color, shape, size, number, and other properties.</p> <p><b>K.P.3.</b> Identify, reproduce, describe, extend, and create color, rhythmic, shape, number, and letter repeating patterns with simple attributes, e.g., ABABAB.</p> <p><b>K.P.3.</b> Identify, reproduce, describe, extend, and create color, rhythmic, shape, number, and letter repeating patterns with simple attributes, e.g., ABABAB.</p>	<p><b>Unit 3.</b> What Come Next? p. 43 Discussion 4</p> <p><b>Unit 3.</b> What Comes Next? p. 36 Activity 1, p. 43 Discussion 4, p. 60 Math Workshop 3, p. 67 Math Workshop 2, p. 81 Activity 1, p. 87 Math Workshop 2, p. 100 Activity 1, p. 130 Activity 1</p>	<p><b>1.</b> Copy, construct, and extend simple repeating patterns, such as AB, ABC.</p> <p><b>2.</b> Begin to identify the unit of a repeating pattern.</p>	<p><b>Observation:</b> Session 1.3, p. 37; Session 1.4, p. 42; Session 1.5, p. 47; Session 2.1, pp. 61-62; Session 2.2, p. 68; Session 2.3, p. 73; Session 2.4, p. 78; Session 2.5, p. 83; Session 2.6, p. 87; Session 2.7, p. 92; Session 2.8, p. 97; Session 2.9, p. 101.</p> <p><b>Writing:</b> Sessions 1.3, 1.5, and 2.1, pp. 37, 48, 62 (Counting Jar); Session 2.3-2.8, pp. 73, 78, 83, 88, 93, 97 (Recording Patterns);</p> <p><b>Portfolio:</b> Session 1.5, p. 47 (M3, Assessment Checklist: Repeating Patterns); Session 2.10, p. 105 (Choosing a Favorite Pattern).</p> <p><b>Observation:</b> Session 1.1, p. 28; Session 1.2, pp. 32, 33; Session 1.4, p. 42; Session 1.5, p. 47; Session 3.1, p.117; Session 3.2, pp. 120-121; Session 3.3, p. 127; Session 3.4, p. 131; Session 3.5, p. 136.</p> <p><b>Writing:</b> Session 1.3, 1.5, and 2.1, pp. 37, 48, 62(Counting Jar); Sessions 3.1-3.4 pp. 117, 120, 127, 131(Student Activity Book p. 22, M18: Break the Train Recording Sheet); Sessions 3.2-3.4, pp. 121, 127, 132(Counting Jar)</p> <p><b>Portfolio:</b> Session 3.1, p. 117(M17, Assessment Checklist: Identifying the Unit of a Pattern); Sessions 3.5-3.7, pp. 135, 140, 145(Student Activity Book p. 24, M20: 12 Chips).</p>	<p>Computer Software Online Resources</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 4: Measuring And Counting



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.M.1.</b> Recognize and compare the attributes of length, volume/capacity, weight, area, and time using appropriate language, e.g., longer, taller, shorter, same weight; holds more, holds less, holds the same amount.</p>	<p><b>Unit 4.</b> Measuring and Counting p. 46 Discussion 2</p>	<p><b>1.</b> Measure the length of an object by lining multiple units.</p>	<p><b>Observation:</b> Session 1.1, p. 30; Session 1.2, p. 36; Session 1.3, p. 41; Session 1.5, p. 50. <b>Writing:</b> Session 1.2, p. 35 (Student Activity Book p. 26); Session 1.5, p. 49 (Student Activity Book p. 28).</p>	<p>Computer Software Online Resources</p>
<p><b>K.M.3.</b> Use nonstandard units to measure length, area, weight, and capacity.</p>	<p>(Length only) <b>Unit 4.</b> Measuring and Counting p. 34 Activity 1, p. 39 Activity 1, p. 46 Discussion 2, p. 49 Activity 1, p. 51 Discussion 3</p>		<p><b>Portfolio:</b> Session 1.1, p. 31(M3, Assessment Checklist: Measuring Lengths); Sessions 1.2, 2.5, 3.3, 4.6, pp. 36, 80-84, 100-103, 153-156 (Counting Jar activity).</p>	
<p><b>K.N.1.</b> Count by ones to at least 20.</p>	<p><b>Unit 4.</b> Measuring and Counting p. 75 Discussion 3</p>	<p><b>2.</b> Count a set of up to 15 objects.</p>	<p><b>Observation:</b> Session 2.1, pp. 61-62; Session 2.2, p. 68; Session 2.3, p. 74; Session 2.5, p. 83.</p>	
<p><b>K.N.6.</b> Identify U. S. coins by name.</p>	<p><b>Unit 4:</b> Measuring and Counting p. 66 Activity 1 (penny)</p>		<p><b>Writing:</b> Session 2.1, p. 60(Student Activity Book p. 31); Session 2.4, p. 77 (Student Activity Book p. 33).</p>	
<p><b>K.N.7.</b> Use objects and drawings to model and solve related addition and subtraction problems to ten.</p>	<p><b>Unit 4:</b> Measuring and Counting p. 72 Activity 1(addition readiness), p. 144 Activity 1(Part/Part/Whole-addition only), p. 155 Discussion 2(Part/ Part/ Whole-addition only)</p>		<p><b>Portfolio:</b> Session 2.1, p. 63(M15, Assessment Checklist: Counting); Sessions 2.4-3.4, pp. 76-108(Student Activity Book p. 33).</p>	

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 4: Measuring And Counting



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.N.4.</b> Compare sets of up to at least 10 concrete objects using appropriate language (e.g., None, more than, fewer than, same number of, one more than) and order numbers.</p> <p><b>K.N.7.</b> Use objects and drawings to model and solve related addition and subtraction problems to ten.</p>	<p><b>Unit 4:</b> Measuring and Counting p. 101 Activity 1, p. 105 Math Workshop 2, p. 119 Discussion 3</p>	<p><b>3.</b> Figure out what is one more or one fewer than a number.</p>	<p><b>Observation:</b> Session 3.1, p. 93; Session 3.3, p. 102; Session 3.4, p. 106; Session 3.6, p. 115; Session 4.1, p. 131; Session 4.3, p. 140; Session 4.4, p. 145; Session 4.5, p. 151</p> <p><b>Writing:</b> Session 4.7, p. 160(Student Activity Book p.40).</p> <p><b>Portfolio:</b> Session 3.3, p. 103 (M22, Assessment Checklist: One More, One Fewer); Sessions 4.7-4.9, pp. 160-166 (Student Activity Book p.40).</p>	<p>Computer Software Online Resources</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 5: Make A Shape, Build A Block

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.G.1.</b> Name, describe, sort, and draw simple two-dimensional shapes.</p> <p><b>K.G.2.</b> Describe attributes of two-dimensional shapes, e.g., number of sides, number of corners.</p> <p><b>K.G.3.</b> Name and compare three-dimensional shapes.</p>	<p><b>Unit 5:</b> Make a Shape, Build a Block p. 23 Activity 1, p. 24 Activity 2, p. 30 Discussion 3, p. 37 Discussion 3, p. 41 Activity 2, p. 42 Discussion 3, p. 45 Activity 1, p. 70 Activity 2</p> <p><b>Unit 5:</b> Make a shape, Build a Block, p. 30 Discussion 3, p. 37 Discussion 3, p. 61 Math Workshop 2A, p. 79 Discussion 2, p. 83 Discussion 3</p> <p><b>Unit 5:</b> Make a Shape, Build a Block, p. 93, Activity 1, p. 95 Activity 2, p. 96 Activity 3, p. 100 Discussion 3, p. 107 Math Workshop 2B, p. 108 Discussion 3, p. 114 Discussion 3</p>	<p>1. Describe the overall size, shape, function, and/ or features of familiar 2-D and 3-D shapes.</p>	<p><b>Observation:</b> Session 1.1, pp. 24, 26; Session 1.2, pp. 29, 30; Session 1.3, p. 35; Session 1.4, p. 41; Session 1.5, p. 47; Session 2.1, p. 61; Session 2.2, pp. 66-67; Session 2.4, p. 74; Session 3.1, p. 96; Session 3.2, p. 99; Session 3.3, pp. 106-107</p> <p><b>Writing:</b> Session 1.1, p. 25 (Student Activity Book p. 25 (M4, Text for Shape Books); Session 1.3, p. 34 (optional) (Saved or printed work done on Shapes software: Free Explore); Session 1.5, p. 46 (Paper for students' Pattern Block Pictures); Session 2.2, p. 66 (optional) (Saved or printed work done on Shapes software: Solving Puzzles); Session 3.1, p. 95 (Student Activity Book pp. 45-46).</p> <p><b>Portfolio:</b> Session 1.1, p. 26 (M7, Assessment Checklist: Describing Shapes); Session 1.4, p. 43 (M10, Assessment Checklist: Constructing 2-D and 3-D Shapes); Investigation 1 (Shape Pictures); Investigation 1 (Pattern Block Pictures); Investigations 1 &amp; 2 (optional) (Saved or printed work done with Shapes software-Free Explore in Inv. 1 and Solving Puzzles in Inv. 2); Investigations 1, 2 &amp; 3 (Sketched pictures, notes, and/or photographs of student work that cannot be recorded on paper).</p>	<p>Online Resources Computer Software Introducing the software: The Shapes software is introduced to students in this unit. If you are planning to use the software, you will need to familiarize yourself with it. For information about Shapes software, refer to the Software Support Reference Guide found on the CD. To prepare to integrate this work into your classroom and to manage the computer environment, see Teacher Note: Introducing and Managing the Shapes software and Teacher Note: About the Mathematics in the Shapes software for further support and information.</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 5: Make A Shape, Build A Block

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.G.2.</b> Describe attributes of two-dimensional shapes, e.g., number of sides, number of corners.</p> <p><b>K.G.3.</b> Name and compare three-dimensional shapes.</p> <p><b>K.G.1.</b> Name, describe, sort, and draw simple two-dimensional shapes.</p> <p><b>K.G.2.</b> Describe attributes of two-dimensional shapes, e.g., number of sides, number of corners.</p>		<p><b>2.</b> Construct 2-D and 3-D shapes.</p> <p><b>3.</b> Make 2-D and 3-D shapes by combining shapes.</p>	<p><b>Observation:</b> Session 1.4, p. 41; Session 1.5, p. 47; Session 2.1, p. 61; Session 2.2, pp. 66-67; Session 3.4, p. 113; Session 3.5, p. 119; Session 3.6, p. 123.</p> <p><b>Writing:</b> Session 1.5, p. 46(Paper for students' Pattern Block Pictures); Session 2.2, p. 66 (optional) (Saved or printed work done on Shapes software: Solving</p> <p><b>Portfolio:</b> Inv. 1 (Shape Pictures); Inv. 1 (Pattern Block Pictures); Inv. 1 &amp; 2 (optional) (Saved or printed work done with Shapes software-Free Explore in Inv. 1 and Solving Puzzles in Inv. 2); Inv. 2 &amp; 3 (Sketched pictures, notes, and/ or photos of student work that cannot be recorded on paper).</p> <p><b>Observation:</b> Session 2.2, pp. 66-67; Session 2.3, p. 71; Session 2.4, p. 74; Session 2.6, p. 82; Session 3.6, p. 123.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 2.2, p. 67(M30), Assessment Checklist: Constructing (and Decomposing) 2-D &amp; 3-D Shapes); Investigation 2(optional)(Saved or printed work done with Shapes software - Solving Puzzles in Inv. 2); Inv. 2 &amp; 3(Counting Jar) Inv. 1, 2, &amp; 3 Sketched pictures, notes and/ or photos of student work that cannot be recorded on paper).</p>	<p>Online Resources</p> <p>Computer Software</p> <p>Introducing the software: The Shapes software is introduced to students in this unit. If you are planning to use the software, you will need to familiarize yourself with it. For information about Shapes software, refer to the Software Support Reference Guide found on the CD. To prepare to integrate this work into your classroom and to manage the computer environment, see Teacher Note: Introducing and Managing the Shapes software and Teacher Note: About the Mathematics in the Shapes software for further support and information.</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 6: How Many Do You Have?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.N.7.</b> Use objects and drawings to model and solve related addition and subtraction problems to ten.</p>	<p><b>Unit 6:</b> How Many Do You Have? p. 113 Discussion 3(addition only), p. 116 Activity 1(subtraction only), p. 147 Activity 1(related addition only) p. 153 (related addition only)</p>	<p>1. Write the numbers to 10.</p>	<p><b>Observation:</b> Session 1.1, p. 32; Session 1.2, p. 37; Session 1.3, p. 43; Session 1.4, p. 48; Session 3.1, p. 102; Session 3.2, p. 107; Session 3.4, p. 117; Session 3.5, p. 121; Session 3.6, p. 125; Session 3.7, p. 130; Session 4.1, p. 139; Session 4.3, p. 149; <b>Writing:</b> Session 3.5, p. 120(Student Activity Book p. 63); Session 3.6, p. 124 (Student Activity Book p. 64); Session 4.1, pp. 139-140(Student Activity Book p. 66); Session 4.4, p. 152(Student Activity Book p. 68) <b>Portfolio:</b> Session 1.3, p. 43(M5 Assessment Checklist: Writing Numbers to 10); Session 1.3, p. 43(Arrangements of Five Through Ten Miles); Session 1.4, p. 47(Counting Jar); Session 1.4, p. 7(M6 Assessment Checklist: Counting); Session 3.1, p. 101 (Student Activity Book p. 59); Session 3.6, p. 124(Student Activity Book p. 64); Session 3.7, p. 129 (Student Activity Book p. 65); Session 4.1, pp. 139-140(Student Activity Book p. 66); Session 4.4, p. 152(Student Activity Book p. 68).</p>	<p>Computer Software Online Resources</p>

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GRADE KINDERGARTEN INVESTIGATIONS  
Unit 6: How Many Do You Have?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>K.N.1.</b> Count by ones up to at least 20.</p> <p><b>K.M.3.</b> Use nonstandard units to measure length, area, weight, and capacity.</p> <p><b>K.N.7.</b> Use objects and drawings to model and solve related addition and subtraction problems to ten.</p>	<p><b>Unit 6:</b> How Many Do You Have? p. 80 Activity 1, p. 80 Math Workshop 2A.</p>	<p><b>2.</b> Count a set of up to 20 objects.</p> <p><b>3.</b> Combine two small quantities.</p>	<p><b>Observation:</b> Session 1.4, p. 48; Session 1.5, p. 53; Session 2.1, p. 70; Session 2.2, p. 76; Session 2.3, p. 81; Session 2.4, p. 85; Session 2.6, p. 92. <b>Writing:</b> Session 2.2-2.6, pp. 75-94 (Student Activity Book p. 56); <b>Portfolio:</b> Session 1.4, p. 47(Counting Jar); Session 2.2, p. 75(Student Activity Book p. 56); Session 2.6, p. 92(Counting Jar); Session 2.6, p. 93(M12, Assessment Checklist: Addition).</p> <p><b>Observation:</b> Session 2.6, p. 92; Session 3.1, p. 102; Session 3.2, p. 107; Session 3.4, p. 117; Session 3.5, p. 121; Session 3.6, p. 125; Session 3.7, p. 130; Session 4.4, p. 139; Session 4.3, p. 149; <b>Writing:</b> Session 4.1, pp. 139-140 (Student Activity Book p. 66); Session 4.4, p. 152(Student Activity Book p. 68). <b>Portfolio:</b> Session 2.6, p. 92(Counting Jar); Session 2.6, p. 93(M12, Assessment Checklist: Addition); Session 3.1, p. 101 (Student Activity Book p. 59); Session 3.6, p. 124(Student Activity Book p. 64); Session 3.7, p. 129(Student Activity Book p. 65); Session 4.1, pp. 139-140(Student Activity Book p. 66); Session 4.4, p. 152 (Student Activity Book p. 68).</p>	<p>Computer Software Online Resources</p>



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GRADE ONE INVESTIGATIONS  
Unit 1: How Many Of Each?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.N.2</b> Identify and distinguish among multiple uses of numbers including cardinal (to tell how many) and ordinal (to tell which one in an ordered list, and as many labels and as measurements.</p> <p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.M.1.</b> Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar.</p>	<p><b>Unit 1:</b> How Many of Each? p. 89 Activity 1, p. 90 Activity 2.</p> <p><b>Unit 1:</b> How Many of Each? p.27 Activity a, p. 33 Activity 1.</p> <p><b>Unit 1:</b> How Many of Each? p. 108 Activity 1, p. 116 Discussion 3, p. 129 Discussion 3, p. 135 Discussion 3.</p> <p><b>Unit 1:</b> How Many of Each? p. 33 Activity 1 <b>Units 1-9:</b> Classroom Routines.</p>	<p><b>1.</b> Count a set of up to 20 objects.</p>	<p><b>Observation:</b> Session 1.1, p. 31; Session 1.2, p. 35; Session 1.3, p. 40; Session 1.4, pp. 45-46; Session 2.1, pp. 56-57; Session 2.2, pp. 62-63; Session 2.6, p. 85.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 2.6, p. 85 (M23, Assessment: Counting 20); Session 3.6, p. 132 (M32, Assessment: Double Compare); Session 4.7, pp. 181-182 (M39-40, End of Unit Assessment: How Many Cookies?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 1: How Many Of Each?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.N.4.</b> Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than (&lt;,=,&gt;).</p> <p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p>	<p><b>Unit 1:</b> How Many of Each? p. 89 Activity 1, p. 90 Activity 2.</p> <p><b>Unit 1:</b> How Many of Each? p. 91 Discussion 3.</p> <p><b>Unit 1:</b> How Many of Each? p. 108 Activity 1, p. 116 Discussion 3, p. 129 Discussion 3, p. 135 Discussion 3.</p>	<p><b>2.</b> Compare and order quantities to 12.</p> <p><b>3.</b> Combine two small quantities.</p>	<p><b>Observation:</b> Session 2.2, pp. 62-63; Session 2.3, p. 68; Session 2.4, p. 74; Session 2.6, p. 85; Session 2.7, p. 91.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.6, p. 132 (M32, Assessment: Double Compare).</p> <p><b>Observation:</b> Session 3.1, pp. 103-104; Session 3.2, p. 109; Session 3.3, p. 114; Session 3.4, p. 122; Session 3.5, p. 127; Session 3.6, p. 132; Session 3.7, p. 140.</p> <p><b>Writing:</b> Session 3.3, p. 118 (Student Activity Book p. 22); Session 3.5, p. 127 (Student Activity Book p. 27).</p> <p><b>Portfolio:</b> Session 3.3, pp. 113, 118 (Student Activity Book pp. 21-22); Session 3.6, p. 132 (M32, Assessment: Double Compare); Session 4.7, pp. 181-182 (M39-40, End of Unit Assessment: How Many Cookies?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE ONE INVESTIGATIONS  
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Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.6.</b> Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., \$0.69, \$1.35.</p> <p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p>	<p><b>Unit 1:</b> How Many or Each? P. 89 Activity 1, p. 90 Activity 2.</p>	<p><b>4.</b> Interpret (retell the action and sequence) and solve addition story problems.</p> <p><b>5.</b> Find more than one combination of two addends for a number up to 10 (e.g., 7 is 4 and 3 and is also 5 and 2).</p>	<p><b>Observation:</b> Session 3.1, pp. 103-104; Session 3.2, p. 109; Session 3.3, p. 114; Session 3.4, p. 122; Session 3.5, p. 127; Session 3.6, p. 132; Session 3.7, p. 140. <b>Writing:</b> Session 3.3, p. 118 (Student Activity Book p. 22); Session 3.5, p. 127 (Student Activity Book p. 27). <b>Portfolio:</b> Session 3.3, pp. 113, 118 (Student Activity Book pp. 21-22); Session 4.7, pp. 181-182 (M39-40, End of Unit Assessment: How Many Cookies?).</p> <p><b>Observation:</b> Session 4.1, p. 151; Session 4.2, p. 157; Session 4.3, pp. 164-165; Session 4.4, p. 169; Session 4.5, p. 173. <b>Writing:</b> Session 4.1, p. 149 (Student Activity Book p. 33); Session 4.5, p. 173 (Student Activity Book p. 43). <b>Portfolio:</b> Session 4.7, pp. 181-182 (M39-40, End of Unit Assessment: Eight Fruits).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 2: Making Shapes And Designing Quilts



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.2.</b> Identify, describe, draw, and compare two-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p> <p><b>2.G.4.</b> Identify shapes that have been rotated (turned), reflected (flipped), translated (slid), and enlarged. Describe Direction of translations, e.g., left, right, up, down.</p> <p><b>2.G.6.</b> Predict the results of putting shapes together and taking them apart.</p> <p><b>2.G.7.</b> Relate geometric ideas to numbers, e.g., seeing rows in an array as a model of repeated addition.</p>	<p><b>Unit 2:</b> Making Shapes &amp; Designing Quilts p. 25 Activity 1, 31 Activity 1, p. 71 Activity 1, p. 78 Activity 1, p. 86 Activity 1, p. 96 Math Workshop 2.</p> <p><b>Unit 2:</b> Making Shapes &amp; Designing Quilts p. 37 Activity 1, p. 71 Activity 1, p. 74 Activity 3, p. 89 Discussion 3, p. 92 Activity 2.</p> <p>Can be developed from: <b>Unit 2:</b> Making Shapes &amp; Designing Quilts p. 39 Activity 2, p. 55 Activity 2.</p> <p><b>Unit 2:</b> Making Shapes &amp; Designing Quilts p. 27 Activity 2, p. 33 Math Workshop 3, p. 45 Discussion 1, p. 49 Activity 1, p. 51 Discussion 2, p. 56 Math Workshop 3A, p. 63 Discussion 3.</p> <p><b>Unit 2:</b> Making Shapes &amp; Designing Quilts p. 42 Discussion 4, p. 49 Activity 1 p. 51 Discussion 2.</p>	<p><b>1.</b> Fill a given region in different ways with a variety of shapes.</p>	<p><b>Observation:</b> Session 1.1, pp. 27, 29; Session 1.2, pp. 32, 34-35; Session 1.3, pp. 38, 41; Session 1.5, p. 51; Session 1.6, pp. 58-60; Session 1.7, p. 62; Session 3.4, pp. 118-119.</p> <p><b>Writing:</b> Session 1.3, p. 43 (Student Activity Book p. 13); Session 1.7, p. 64 (Student Activity Book p. 25).</p> <p><b>Portfolio:</b> Session 1.2, p. 33 (Student Activity Book p. 4); Session 1.5, p. 49 (M24, Different Ways to Fill a Shape); Session 1.6, pp. 57-58 (Student Activity Book pp. 21-23); Session 1.7, p. 62 (M28, Assessment: Many Ways to Fill a Hexagon); Session 3.4, pp. 118-119 (M43-45, End of Unit Assessment, Problem 1).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Introducing the Software</b> The Shapes software is introduced to students in this unit. If you are planning to use the software, you will need to familiarize yourself with it. For information about Shapes software, refer to the Software Support Reference Guide found on the CD. To prepare to integrate this work into your classroom and to manage the computer environment, see Teacher Note: Introducing &amp; Managing the Shapes software, page 154, and Teacher Note: About the Math in Shapes software, page 157.</p>

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GRADE ONE INVESTIGATIONS  
Unit 2: Making Shapes And Designing Quilts



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.2.</b> Identify, describe, draw, and compare two-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p> <p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.2.</b> Identify, describe, draw, and compare two-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p>		<p><b>2.</b> Use geometric language to describe &amp; identify important features of familiar 2-D shapes.</p> <p><b>3.</b> Identify and describe triangles.</p> <p><b>4.</b> Describe and sort 2-D shapes.</p>	<p><b>Observation:</b> Session 2.1, pp. 73-74, 76; Session 2.2, pp. 79, 82-83; Session 2.3, p. 87; Session 2.4, p. 92.</p> <p><b>Writing:</b> Session 2.1, p. 76 (Student Activity Book p. 28).</p> <p><b>Portfolio:</b> Session 2.5, p.98-99 (M35, Assessment Checklist: What Is a Triangle?)</p> <p><b>Observation:</b> Session 2.2, pp. 79, 82-83; Session 2.4, p. 92;</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 2.5, p.98-99 (M35, Assessment Checklist: What Is a Triangle?)</p> <p><b>Observation:</b> Session 2.1, pp. 73-74, 76; Session 2.4, p. 92.</p> <p><b>Writing:</b> Session 2.1, p. 76 (Student Activity Book p. 28).</p> <p><b>Portfolio:</b> Session 3.4, pp. 118-119 (M43-45, End of Unit Assessment, Problem 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 2: Making Shapes And Designing Quilts



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.4.</b> Identify shapes that have been rotated (turned), reflected (flipped), translated (slid), and enlarged. Describe Direction of translations, e.g., left, right, up, down.</p> <p><b>2.G.6.</b> Predict the results of putting shapes together and taking them apart.</p> <p><b>2.G.7.</b> Relate geometric ideas to numbers, e.g., seeing rows in an array as a model of repeated addition.</p> <p><b>2.G.3.</b> Recognize congruent Shapes. +</p> <p><b>2.G.5.</b> Identify symmetry in two-dimensional shapes.</p>	<p>See Grade 2</p> <p>See Grade 2, Unit 2.</p>	<p><b>5.</b> Compose and decompose shapes.</p>	<p><b>Observation:</b> 1.2, pp. 32, 34-35; Session 1.3, pp. 38, 41; Session 1.5, p. 51; Session 3.1, pp. 106-107; Session 3.2, p. 111; Session 3.4, pp. 118-119.</p> <p><b>Writing:</b> Session 1.3, p. 43 (Student Activity Book p. 13).</p> <p><b>Portfolio:</b> Session 1.2, p. 33 (Student Activity Book p. 4); Session 1.5, p. 49 (M24, Different Ways to Fill a Shape); Session 1.7, p. 62 (M28, Assessment: Many Ways to Fill a Hexagon); Session 3.4, pp. 118-119 (M43-45, End of Unit Assessment, Problem 1).</p>	<p>Calculators</p> <p>Computer Software</p> <p>Online Resources</p> <p>Exam View</p> <p>Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 3: Solving Story Problems



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.8.</b> Understand and use the inverse relationship between addition and subtraction (e.g., <math>8 + 6 = 14</math> is equivalent to <math>14 - 6 = 8</math> and <math>14 - 8 = 6</math>) to solve</p>	<p><b>Unit 3:</b> Solving Story Problems p. 53 Discussion 3, p. 67 Activity 2, p. 114 Activity 2, p. 119 Math Workshop 2C.</p> <p><b>Unit 3:</b> Solving Story Problems p. 82, Activity 2, p. 90 Discussion 3, p. 98 Discussion 3.</p> <p><b>Unit 3:</b> Solving Story Problems p. 90 Discussion 3.</p>	<p><b>1.</b> Find at least five combinations of two addends for a number up to 15.</p> <p><b>2.</b> Combine two small quantities.</p> <p><b>3.</b> Interpret (retell the action and sequence) and solve addition and subtraction story problems.</p> <p><b>4.</b> Subtract one small quantity from another.</p>	<p><b>Observation:</b> Session 1.1, p. 31; Session 1.2, pp. 38-39; Session 1.3, pp. 43-44; Session 1.5, p. 52; Session 1.6, pp. 58-59; Session 1.8, p. 68; Session 1.9, p. 72.</p> <p><b>Writing:</b> Session 1.1, p. 30(Student Activity Book p. 1); Session 1.8. pp. 67, 69 (Student Activity Book pp. 15-16)</p> <p><b>Portfolio:</b> Session 1.9, p. 72 (M25, Assessment: Eleven Fruits: How Many of Each?);</p> <p><b>Observation:</b> Session 2.1, p. 83-84; Session 2.2, pp. 87-88; Session 2.3, p. 95; Session 3.1, p. 108.</p> <p><b>Writing:</b> Session 2.2, pp. 87, 90(Student Activity Book pp. 21-22).</p> <p><b>Portfolio:</b> Session 3.5, p. 128 (M38, Assessment: How Many Books?); Session 4.8, p. 172 (M46-47, End of Unit Assessment, Problem 1).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 3: Solving Story Problems



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.4.</b> Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than (&lt;,&lt;=,&gt;).</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p>	<p><b>Unit 3:</b> Solving Story Problems p. 111 Activity 1, p. 118 Activity 1.</p> <p><b>Unit 3:</b> Solving Story Problems p. 53 Discussion 3, p. 67 Activity 2, p. 114 Activity 2, p. 119 Math Workshop 2C.</p> <p><b>Unit 3:</b> Solving Story Problems p. 149 Activity 1, p. 151 Discussion 2, p. 158 Activity 1.</p> <p><b>Unit 3:</b> Solving Story Problems p. 158 Activity 1, p. 162 Activity 1, p. 163 Math Workshop 2A, p. 169 Activity 4.</p> <p><b>Unit 3:</b> Solving Story Problems p. 149 Activity 1, p. 151 Discussion 2, p. 158 Activity 1.</p> <p><b>Unit 3:</b> Solving Story Problems p. 158 Activity 1, p. 162 Activity 162 Activity 1, p. 163 Math Workshop 2A, p. 169 Activity 4.</p>	<p><b>5.</b> Represent numbers by using equivalent expressions.</p> <p><b>6.</b> Count a set of 40-50 objects.</p> <p><b>7.</b> Rote Count, read, and write numbers to 65.</p>	<p><b>Observation:</b> Session 3.2, p. 114; Session 3.3, p. 119; Session 3.4, p. 124.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 4.8, p. 172(M46-47, End of Unit Assessment, Problem 2).</p> <p><b>Observation:</b> Session 4.1, p. 140; Session 4.2, p. 145; Session 4.3, p. 150; Session 4.5, pp. 159-160; Session 4.6, p. 163; Session 4.7, pp. 167, 170.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Sessions 4.2-4.5, p. 145-146 (M39, Assessment: Covering &amp; Counting).</p> <p><b>Observation:</b> Session 4.1, p. 140; Session 4.2, p. 145; Session 4.3, p. 150; Session 4.5, pp. 159-160; Session 4.6, p. 163; Session 4.7, pp. 167, 170.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 4.7, p. 167 (M45, Assessment: Counting Strips).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 4: What Would You Rather Be?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.D.1.</b> Use interviews, surveys, and observations to gather data about themselves and their surroundings.</p> <p><b>2.D.2.</b> Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, &amp; Venn diagrams; interpret the representations.</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) &amp; make educated guesses (conjectures) about a situation based on information gained from data.</p>	<p><b>Unit 4:</b> What Would You Rather Be? p. 23 Activity 1, p. 32 Activity 3, p. 44 Discussion 3, p. 57 Activity 4, p. 61 Activity 1, p. 68 Activity 1, p. 69 Activity 2, p. 72 Activity 3, p. 76 Discussion 1, p. 76 Activity 2.</p> <p><b>Unit 4:</b> What Would You Rather Be? p. 25 Discussion 3, p. 29 Discussion 1, p. 61 Activity 1, p. 91 Activity 1, p. 92 Activity 2, p. 94 Activity 3, p. 99 Activity 1, p. 107 Activity 3, p. 111 Activity 1.</p> <p><b>Unit 4:</b> What Would You Rather Be? p. 35 Activity 1, p. 37 Math Workshop 2, p. 39 Discussion 3, p. 42 Activity 2.</p>	<p><b>1.</b> Sort a group of objects according to a given attribute.</p> <p><b>2.</b> Represent a set of data with two categories.</p>	<p><b>Observation:</b> Session 1.1, pp. 24, 25, 27; Session 1.2, pp. 31, 33; Session 1.3, p. 38; Session 1.4, p. 43.</p> <p><b>Writing:</b> Session 1.1, p. 24 (Student Activity Book p. 1); Session 1.1, p. 27 (Student Activity Book p. 3).</p> <p><b>Portfolio:</b> Session 1.3, pp. 38-39 and 1.4, pp. 40-41 (M8, Assessment Checklist: Sorting); Session 3.4, p. 113 (M13-15, End of Unit Assessment, Problem 1).</p> <p><b>Observation:</b> Session 2.1, pp. 57, 59; Session 2.2, pp. 62, 67; Session 2.4, p. 78; Session 2.5, p. 83; Session 3.1, pp. 92, 96; Session 3.2, pp. 99, 102;</p> <p><b>Writing:</b> Session 2.4, p. 78 (Student Activity Book p. 12)</p> <p><b>Portfolio:</b> Session 2.5, p. 82 (M11, Assessment: Deep Sea or Outer Space?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 4: What Would You Rather Be?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.D.4.</b> Decide which outcomes of experiments are most likely.</p>	<p>See Grade 4.</p>	<p><b>3.</b> Interpret a variety of data representations with two categories.</p> <p><b>4.</b> Describe a set of data, including how many are in each group, which group is greater, and how many people responded to the survey.</p>	<p><b>Observation:</b> Session 1.1, pp. 24, 25, 27; Session 1.2, pp. 31, 33; Session 2.1, pp. 57, 59; Session 2.2, pp. 62, 67; Session 2.3, pp. 72-73; Session 3.1, pp. 92, 96; Session 3.2, pp. 99, 102; Session 3.3, p. 106; Session 3.4, p. 106;  <b>Writing:</b> Session 2.3, p. 69 (Student Activity Book p. 10); Session 3.3, p. 106 (Student Activity Book p. 19).  <b>Portfolio:</b> Session 2.5, p. 82 (M11, Assessment: Deep Sea or Outer Space?); Session 3.4, p. 113 (M13-15, End of Unit Assessment, Problems 2 &amp; 3).</p> <p><b>Observation:</b> Session 2.4, p. 78; Session 2.5, p. 83; Session 3.1, pp. 92, 96; Session 3.3, p. 106.  <b>Writing:</b> Session 2.4, p. 78 (Student Activity Book p. 12); Session 3.3, p. 106 (Student Activity Book p. 19).  <b>Portfolio:</b> Session 3.4, p. 113 (M13-15, End of Unit Assessment, Problems 2 &amp; 3).</p>	<p>Calculators            Computer Software            Online Resources</p> <p>Exam View            Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 5: Fish Lengths And Animal Jumps



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.M.1.</b> Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar.</p> <p><b>2.M.3</b> Compare the length, weight, area, and volume of two or more objects by using direct comparison.</p> <p><b>2.M.4.</b> Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.</p> <p><b>2.M.5.</b> Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.</p>	<p><b>Unit 1-9:</b> Classroom Routines</p> <p><b>Unit 5:</b> Fish Lengths &amp; Animal Jumps p. 23 Activity 1, p. 25 Activity 2, p.26 Discussion 3, p. 29 Activity 1, p. 49 Activity1.</p> <p><b>Unit 5:</b> Fish Lengths &amp; Animal Jumps p. 35 Discussion 1, p. 36 Activity 2, p. 39 Activity 3, p. 42 Activity 1, p. 44 Math Workshop 2A.</p> <p><b>Unit 5:</b> Fish Lengths &amp; Animal Jumps p. 66 Discussion 2 (Linear Only).</p>	<p><b>1.</b> Demonstrate accurate measuring techniques when measuring a distance with nonstandard or standard units. These techniques include starting at the beginning, ending at the end, &amp; leaving no gaps or overlaps, measuring in a straight line, and keeping track of the number of units.</p>	<p><b>Observation:</b> Session 1.1, p. 26; Session 1.2, p. 31; Session 1.3, pp. 38, 40; Session 1.4, pp. 45-46; Session 1.5, p. 49; Session 1.6, p. 54; Session 2.1, p. 69; Session 2.4, p. 80.</p> <p><b>Writing:</b> Session 1.4, pp. 44-45 (Student Activity Book pp. 11-12); Session 2.4, p. 80 (Student Activity Book pp. 26-27).</p> <p><b>Portfolio:</b> Session 1.6, p. 53 (M28, Assessment: How Long Is This Fish?); Session 2.2 (Student Activity Book p. 21); Session 2.3, p. 74 (Student Activity Book pp. 21, 23 and M29, Assessment Checklist: Measurement Techniques); Session 2.4, p. 78 and Session 2.5, p. 83 (Student Activity Book p. 25, &amp; M29, Assessment Checklist: Measurement Techniques).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 5: Fish Lengths And Animal Jumps



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
		<p><b>2.</b> Know at least one way of describing a measurement that falls between two whole numbers.</p> <p><b>3.</b> Understand that the same result should be obtained when the same object is measured twice or when two different people measure the same object (using the same unit).</p> <p><b>4.</b> Understand that measuring with different-sized units will result in different numbers.</p>	<p><b>Observation:</b> Session 1.1, p. 26; Session 2.3, pp. 74, 76.  <b>Writing:</b> Session 2.3, p. 75 (Student Activity Book p. 23).  <b>Portfolio:</b> Session 1.6, p. 53 (M28, Assessment: How Long Is This Fish?); Session 2.2 (Student Activity Book p. 21); Session 2.3, p. 74 (Student Activity Book pp. 21, 23, and M29, Assessment Checklist: Measurement Techniques); Session 2.4, p. 78 and Session 2.5, p. 83 (Student Activity Book p. 25, and M29, Assessment Checklist: Measurement Techniques).</p> <p><b>Observation:</b> Session 1.1, p. 26; Session 1.2, p. 31; Session 1.6, p. 54.  <b>Writing:</b>  <b>Portfolio:</b> Session 1.6, p. 53 (M28, Assessment: How Long Is This Fish?);</p> <p><b>Observation:</b> Session 1.2, p. 31; Session 2.1, p. 65; Session 2.2, p. 72; Session 2.3, pp. 74, 76; Session 2.5, p. 83.  <b>Writing:</b> Session 2.3, p. 75 (Student Activity Book p. 23).  <b>Portfolio:</b> Session 2.5, p. 83 (M34, End of Unit Assessment).</p>	<p>Calculators            Computer Software            Online Resources</p> <p>Exam View            Success Net</p>

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GRADE ONE INVESTIGATIONS  
Unit 5: Fish Lengths And Animal Jumps



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.M.5.</b> Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.</p> <p><b>2.M.2.</b> Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m. (classroom routines)</p> <p><b>2.M.6.</b> Make and use estimates of measurement, including time, volume, weight, and area.</p>	<p><b>Unit 5:</b> Fish Lengths &amp; Animal Jumps p. 66 Discussion 2 (Linear only).</p> <p><b>See Grade 2.</b></p> <p><b>See Grade 2.</b></p>			<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 6: Numbers Games And Crayon Puzzles



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.8.</b> Understand and use the inverse relationship between addition and subtraction (e.g., <math>8 + 6 = 14</math> is equivalent to <math>14 - 6 = 8</math> and <math>14 - 8 = 6</math>) to solve.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.P.5.</b> Construct and solve open sentences that have variables, e.g., <math>n + 7 = 10</math>.</p> <p><b>2.P.6.</b> Write number sentences using <math>+</math>, <math>-</math>, <math>&lt;</math>, <math>=</math>, and/or <math>&gt;</math> to represent mathematical relationships in everyday situations.</p> <p><b>2.P.6.</b> Write number sentences using <math>+</math>, <math>-</math>, <math>&lt;</math>, <math>=</math>, and/or <math>&gt;</math> to represent mathematical relationships in everyday situations.</p>	<p><b>Unit 6:</b> Number Games &amp; Crayon Puzzles p. 37 Activity 3, p. 48 Activity 3.</p> <p><b>Unit 6:</b> Number Games &amp; Crayon Puzzles p. 51 Activity 1 (missing parts), p. 53 Discussion 3, p. 58 Discussion 3.</p>	<p>1. Find at least five 2-addend combinations of 10.</p> <p>2. Combine two small quantities by at least counting on.</p>	<p><b>Observation:</b> Session 1.1, p. 30; Session 1.2, p. 36; Session 1.3, p. 42; Session 1.5, p. 53; Session 1.6, p. 58; Session 1.7, p. 63; Session 2.1, p. 71; Session 2.2, p. 78; Session 2.3, p. 84; Session 2.4, p. 89; Session 2.5, p. 94.</p> <p><b>Writing:</b> Session 1.4, p. 49 (Student Activity Book p. 7); Session 2.1, p. 71 (Student Activity Book p. 15); Session 2.2, p. 80 (Student Activity Book p. 20).</p> <p><b>Portfolio:</b> Session 1.1, p. 29 Activity Book p. 1); Session 2.1, p. 71 (Student Activity Book p. 15); Session 2.2, pp. 78-79 (Student Activity Book pp. 17-18); Session 2.5, p. 94 (M39, (Student Assessment: Ten Crayons in All)).</p> <p><b>Observation:</b></p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.3, p. 113 (M48, Assessment Checklist: Counting On).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 6: Numbers Games And Crayon Puzzles



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.8.</b> Understand and use the inverse relationship between addition and subtraction (e.g., <math>8 + 6 = 14</math> is equivalent to <math>14 - 6 = 8</math> and <math>14 - 8 = 6</math>) to solve.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.P.6.</b> Write number sentences using +, -, &lt;, =, and/or &gt; to represent mathematical relationships in everyday situations.</p>	<p><b>Unit 6:</b> Number Games &amp; Crayon Puzzles p. 121 Discussion 1.</p> <p><b>Unit 6:</b> Number Games &amp; Crayon Puzzles p. 37 Activity 3, p. 48 Activity 3.</p> <p><b>Unit 6:</b> Number Games &amp; Crayon Puzzles p. 28 Activity 2, p. 37 Activity 3, p. 43 Activity 3, p. 46 Activity 1.</p> <p><b>Unit 6:</b> Number Games &amp; Crayon Puzzles p. 31 Discussion 3, p. 37 Activity 3, p. 58 Activity 3, p. 114 Activity 2, p. 121 Discussion 1, p. 125 Discussion 3.</p>	<p><b>3.</b> Interpret (retell the action &amp; sequence) and solve addition and subtraction story problems.</p> <p><b>4.</b> Subtract one small quantity from another.</p>	<p><b>Observation:</b> Session 1.2, p. 36; Session 1.3, p. 42; Session 3.1, p. 105; Session 3.2, pp. 109-110; Session 3.4, p. 119; Session 3.8, p. 136.</p> <p><b>Writing:</b> Session 1.4, p. 49 (Student Activity Book p. 7);</p> <p><b>Portfolio:</b> Session 3.4, p. 118 (Student Activity Book pp. 34-37); Session 3.8, p. 135 (M55, End of Unit Assessment, Problem 1).</p> <p><b>Observation:</b> Session 3.2, pp. 109-110;</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.8, p. 135 (M55, End of Unit Assessment, Problem 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 7: Color, Shape, And Number Patterns



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.P.1.</b> Identify, reproduce, describe extend, and create simple rhythmic, , shape, size, number, color, and letter repeating patterns.</p>	<p><b>Unit 7:</b> Color, Shape, &amp; Number Patterns p. 27 Activity 1, p. 35 Math Workshop 2, p. 40 Activity q, p. 47 Activity 2, p. 54 Math Workshop 2, p. 58 Discussion 1, p. 93 Activity 1, p. 98 Discussion 1.</p>	<p><b>1.</b> Construct, describe, and extend a repeating pattern with the structure AB, ABC, AAB, or ABB.</p> <p><b>2.</b> Identify the unit of a repeating pattern for patterns with the structure AB or ABC.</p> <p><b>3.</b> Describe how various AB or ABC patterns are alike (e.g., how is a red-blue pattern like a yellow-green pattern?).</p>	<p><b>Observation:</b> Session 1.1, pp. 28-29; Session 1.2, pp. 36-37; Session 1.5, p. 54; <b>Writing:</b> Session 1.5, p. 56 (Student Activity Book p. 11); <b>Portfolio:</b> Session 1.2, p. 35 (M4, Body Movement Patterns); Session 1.8, p. 67 (M17, Assessment: Make a Repeating Pattern); Session 2.7, p. 110 (M31-34, End of Unit Assessment: Problems 1 &amp; 2).</p> <p><b>Observation:</b> Session 1.4, pp. 47, 50; Session 1.5, p. 54; <b>Writing:</b> Session 1.5, p. 56 (Student Activity Book p. 11); <b>Portfolio:</b> Session 1.8, p. 67 (M17, Assessment: Make a Repeating Pattern); Session 2.7, p. 110 (M31-34, End of Unit Assessment: Problem 2).</p> <p><b>Observation:</b> Session 1.2, pp. 36-37; Session 1.3, p. 42; <b>Writing:</b> Session 1.3, p. 41 (Student Activity Book p. 5); <b>Portfolio:</b> Session 1.2, p. 35 (M4, Body Movement Patterns); Session 1.7, p. 62 (M16, Assessment Checklist: Comparing Repeating Patterns); Session 1.8, p. 66 (M16, cont'd.).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 7: Color, Shape, And Number Patterns



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.5.</b> Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p> <p><b>2.P.1.</b> Identify, reproduce, describe extend, and create simple rhythmic, shape, size, number, color, and letter repeating patterns.</p> <p><b>2.P.3.</b> Describe &amp; create addition and subtraction number patterns, e.g., 1, 4, 7, 10...; or 25, 23, 21...</p> <p><b>2.P.4.</b> Skip count by twos, fives, &amp; tens up to at least 50, starting at any number.</p> <p><b>2.P.7.</b> Describe functions related to trading, including coin trades and measurement trades, e.g., five pennies make one nickel, or four cups make one quart.</p>	<p><b>Unit 7:</b> Color, Shape, &amp; Number Patterns p. 78 Discussion 3, p. 93 Activity 1 (concept of odd numbers only).</p> <p><b>Unit 7:</b> Color, Shape, &amp; Number Patterns p. 27 Activity 1, p. 35 Math Workshop 2, p. 40 Activity 1, p. 47 Activity 2, p. 54 Math Workshop 2. p. 58 Discussion 1, p. 93 Activity 1, p. 98 Discussion 1.</p> <p><b>Unit 7:</b> Color, Shape, &amp; Number Patterns p. 75 Activity 1, p. 76 Activity 2, p. 78 Discussion 3, p. 105 Discussion 2.</p> <p><b>Unit 7:</b> Color, Shape, &amp; Number Patterns p. 79 Discussion 3, p. 89 Discussion 2.</p> <p><b>See Grade2.</b></p>	<p><b>4.</b> Determine what comes several steps beyond the visible part of an AB, ABC, AAB, or ABB repeating pattern.</p> <p><b>5.</b> Construct, extend, and describe a pattern that has a constant increase for the sequence 1, 3, 5...; 2, 4, 6...; 1, 4, 7...; 2, 5, 8...; and 3, 6, 9...through counting and building.</p>	<p><b>Observation:</b> Session 1.3, p. 42; Session 1.5, p. 54; <b>Writing:</b> Session 1.5, p. 56 (Student Activity Book p. 11); <b>Portfolio:</b> Session 1.8, p. 67 (M17, Assessment: Make a Repeating Pattern); Session 2.7, p. 110 (M31-34, End of Unit Assessment: Problems 1 and 3).</p> <p><b>Observation:</b> Session 2.1, p. 77; Session 2.2, pp. 83, 85; Session 2.3, pp. 87, 89; Session 2.4, p. 96, Session 2.5, p. 100. <b>Writing:</b> Session 2.4, p. 94 (Student Activity Book p. 31); Session 2.5, p. 100 (Student Activity Book p. 36); Session 2.6, pp. 107, 109 (Student Activity Book pp. 38-39). <b>Portfolio:</b> Session 2.7, p. 110 (M31-34, End of Unit Assessment: Problems 3 &amp; 4).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
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GRADE ONE INVESTIGATIONS  
Unit 8: Twos, Fives, And Tens



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.P.4.</b> Skip count by twos, fives, and tens up to at least 50, starting at any number.</p>	<p><b>Unit 8:</b> Twos, Fives, &amp; Tens p. 35 Math Workshop 3A, p. 118 Discussion 2.</p> <p><b>Unit 8:</b> Twos, Fives, &amp; Tens p. 33 Activity 1, p. 33 Activity 2, p. 39 Math Workshop 2, p. 41 Activity 3.</p>	<p><b>1.</b> Identify, read, write, and sequence numbers to 105.</p> <p><b>2.</b> Begin to count by groups in meaningful ways.</p>	<p><b>Observation:</b> Session 1.1, pp. 28-29; Session 1.2, p. 35; Session 1.3, pp. 39-40; Session 1.4, p. 46.</p> <p><b>Writing:</b> <b>Portfolio:</b> Session 1.4, p. 46 (M20, Assessment: Counting Strips to 105).</p> <p><b>Observation:</b> Session 2.1, p. 56; Session 2.2, pp. 62-63; Session 2.3, p. 67; Session 2.4, p. 72; Session 2.5, pp. 78-79; Session 2.8, p. 88.</p> <p><b>Writing:</b> Session 2.5 – 2.7, pp. 78, 81, 85 (Student Activity Book pp. 28-29); Sessions 2.5 – 2.7, pp. 78, 82, 86 (Student Activity Book pp. 30-33).</p> <p><b>Portfolio:</b> Session 2.1, p. 55 (Student Activity Book p. 14); Session 2.2, pp. 63-64 (Student Activity Book pp. 17-20); Session 2.4, pp. 72-73 (Student Activity Book pp. 25-26); Session 2.5, p. 78 (Student Activity Book pp. 28-29); Session 2.8, p. 89 (M29, Assessment: How Many Squares?); Session 3.6, p. 127 (M49, End of Unit Assessment: Problem 1, How Many Legs? &amp; Problem 2, How Many Pennies?)</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE ONE INVESTIGATIONS  
Unit 8: Twos, Fives, And Tens



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.P.4.</b> Skip count by twos, fives, and tens up to at least 50, starting at any number.</p> <p><b>2.P.6.</b> Write number sentences using +, -, &lt;, =, and/or &gt; to represent mathematical relationships in everyday situations.</p>	<p><b>Unit 8:</b> Twos, Fives, &amp; Tens p. 57 Discussion 3, p. 61 Discussion 1, p. 66 Activity 1, p. 73 Discussion 2, p. 74 Activity 3, p. 106 Discussion 3.</p> <p><b>Unit 8:</b> Twos, Fives, &amp; Tens p. 122 Discussion 2.</p>	<p><b>3.</b> Gain fluency with the 2-addend combinations of 10.</p>	<p><b>Observation:</b> Session 3.1, pp. 99-100; Session 3.2, p. 106; Session 3.3, p. 112.</p> <p><b>Writing:</b> <b>Portfolio:</b> Session 3.3, p. 110 (M42, Ten Plus Recording Sheet 1); Session 3.6, p. 127 (M49, End of Unit Assessment: Tens Go Fish).</p>	

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GRADE ONE INVESTIGATIONS  
Unit 9: Blocks & Boxes



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p>	<p><b>Unit 9:</b> Blocks &amp; Boxes p. 23 Activity 1, p. 35 Activity 2.</p>	<p><b>1.</b> Attend to features of 3-D shapes, such as overall size and shape, the number and shape of faces, and the number of corners.</p> <p><b>2.</b> Match a 2-D representation to a 3-D shape or structure.</p>	<p><b>Observation:</b> Session 1.1, pp. 24, 26-27; Session 1.2, p. 31; Session 1.3, p. 36; Session 1.4, p. 42; Session 1.5, p. 45; Session 2.4, pp. 86-87;  <b>Writing:</b> Session 1.5, p. 48 (Student Activity Book p. 10); Session 2.4, p. 85 (M24, Describing My Building);  <b>Portfolio:</b> Session 1.4, p. 41 (M14, Assessment Checklist: Observing Blocks in a Sock); Session 1.5, p. 45 (M19, Assessment: Matching Blocks to Outlines); Session 2.4, p. 85 (M24, Describing My Building).</p> <p><b>Observation:</b> Session 1.1, p. 26; Session 1.2, p. 31; Session 1.3, p. 36; Session 1.4, p. 42; Session 1.5, p. 45; Session 1.6, p. 54; Session 2.1, pp. 70, 72; Session 2.2, p. 76; Session 2.3, p. 82; Session 2.4, pp. 86-87; Session 2.8, p. 105.  <b>Writing:</b> Session 1.5, p. 48 (Student Activity Book p. 10); Session 2.1, p. 85 (Student Activity Book p. 15); Session 2.4, p. 85 (M24, Describing My Building);  <b>Portfolio:</b> Session 1.5, p. 45 (M19, Assessment: Matching Blocks to Outlines); Session 2.8, p. 104 (M26, End of Unit Assessment, Matching Plans to Buildings).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 1: Counting, Coins, And Combinations

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.N.4.</b> Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than(&lt;, +, &gt;).</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.P.7.</b> Describe functions related to trading including coin trades and measurement trades, e.g., five pennies make one nickel, or four cups make one quart.</p> <p><b>2.G.6.</b> Predict the results of putting shapes together and taking them apart.</p> <p><b>2.N.6.</b> Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., \$0.69, \$1.35.</p>	<p><b>Unit 1:</b> Counting, Coins, and Combinations p. 42 Activity 1, p. 47 Activity 1.</p> <p><b>Unit 1:</b> Counting, Coins, and Combinations p. 42 Activity 1.</p> <p><b>Unit 1:</b> Counting, Coins, and Combinations p. 48 Activity 3.</p> <p><b>Unit 1:</b> Counting, Coins, and Combinations p. 85 Activity 1, p. 86 Activity 2, p. 87 Discussion 3.</p> <p><b>Unit 1:</b> Counting, Coins, and Combinations p. 36 Activity 1, p. 37 Math Workshop 2.</p> <p><b>Unit 1:</b> Counting, Coins, and Combinations p. 69 Activity 1, p. 70 Math Workshop 2A &amp; 2B, p. 74 Discussion 3, p. 77 Discussion 1, p. 81 Discussion 4.</p>	<p><b>1.</b> Count a set of objects up to 60 in at Least one way.</p> <p><b>2.</b> Determine the difference between two numbers (up to 45).</p>	<p><b>Observation:</b> Session 1.1, p. 31; Session 1.2, pp.38-39; Session 1.3, p. 44; Session 1.4, p.47; Session 1.5, p. 54; Session 2.2, pp. 70, 72, 73; Session 2.4, p. 86; Session 2.5, p. 93(Student Activity Book p. 21);</p> <p><b>Writing:</b> Session 1.1, p. 30(Student Activity Book p. 1); Session 2.5, p. 93 Student Activity Book p. 21).</p> <p><b>Portfolio:</b> Session 1.2, p. 36-39(Student Activity Book pp. 3-8); Session 1.5, pp. 53-54(Student Activity Book p. 13); Session 2.2, p. 72(M12, Assessment Checklist:Counting Pennies); Session 2.5, p. 93(Student Activity Book p. 21).</p> <p><b>Observation:</b> Session 2.1, p. 65; Session 2.2, pp. 70, 72, 73; Session 2.3, p. 79; Session 2.8, p. 104;</p> <p><b>Writing:</b> Session 2.1, p. 65(Student Activity Book p. 15);</p> <p><b>Portfolio:</b> Session 2.8, p. 104(M23, Assessment: Enough for the Class?)</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 1: Counting, Coins, And Combinations

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.12.</b> Estimate, calculate, and solve problems involving addition &amp; subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p> <p><b>2.P.6.</b> Write number sentences using +, -, &lt;, =, and/or &gt; to represent mathematical relationships in everyday situations.</p> <p><b>2.N.2</b> Identify and distinguish among multiple uses of numbers including cardinal (to tell how many) and ordinal (to tell which one in an ordered list, and as many labels and as measurements.</p>	<p><b>Unit 1:</b> Counting, Coins, and Combinations p. 111 Activity 1, p. 112 Activity 2, p. 116 Activity 1, p. 117 Math Workshop 2, p. 121 Discussion 1, p. 125 Discussion 2, p. 130 Discussion 1, p. 152 Discussion 2.</p> <p><b>See Grade 1.</b></p>	<p><b>3.</b> Interpret addition &amp; subtraction story problems (read a story problem and determine what needs to be figured out.</p>	<p><b>Observation:</b> Session 4.1, p. 139; Session 4.3, p. 150; Session 4.4, p. 156; Session 4.5, p. 160.</p> <p><b>Writing:</b> Session 4.1, p. 139(Student Activity Book p. 34); Session 4.3, p. 151 (Student Activity Book p. 42)</p> <p><b>Portfolio:</b> Session 4.3, p. 150(Student Activity Book p. 41); Session 4.8, p. 176 (M42-43, End of Unit Assessment: How Many Students?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 1: Counting, Coins, And Combinations

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.12.</b> Estimate, calculate, and solve problems involving addition &amp; subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p> <p><b>2.P.6.</b> Write number sentences using +, -, &lt;, =, and/or &gt; to represent mathematical relationships in everyday situations.</p>	<p>Solving addition &amp; subtraction problems only: <b>Unit 1:</b> Counting, Coins, and Combinations p. 156 Activity 1, p. 157 Discussion 2</p> <p><b>Unit 1:</b> Counting, Coins, and Combinations p. 139 Activity 1, p. 141 Discussion 2, p. 150 Activity, p. 157 Discussion, p. 160 Activity 1, Discussion 2, p. 161 Session Follow-Up 3</p>	<p><b>4.</b> Have at least one strategy for solving addition and subtraction (as removal) story problems.</p>	<p><b>Observation:</b> Session 4.1, p. 139; Session 4.3, p. 150; Session 4.4, p. 156; Session 4.5, p. 160; Session 4.8, p. 176; <b>Writing:</b> Session 4.1, p. 139(Student Activity Book p. 34); Session 4.3, p. 151 (Student Activity Book p. 42) <b>Portfolio:</b> Session 4.3, p. 150(Student Activity Book p. 41); Session 4.8, p. 176 (M41, Assessment: How Many Cans?); Session 4.9, p. 179(M42-43, End of Unit Assessment: How Many Students?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>
<p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p>		<p><b>5.</b> Demonstrate fluency with the Plus1, Plus 2, and Make 10 addition combinations.</p>	<p><b>Observation:</b> Session 2.6, p. 98; Session 2.8, p. 104; Session 3.1, pp. 112, 114; Session 3.2, p. 117; Session 3.4, p. 124; Session 3.5, p. 132; Session 4.2, p. 146; <b>Writing:</b> <b>Portfolio:</b> Session 2.8, p. 104(M23, Assessment: Enough for the Class?); Session 4.9, p. 179(M42-43, End of Unit Assessment: Addition Combinations, set 1).</p>	

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GRADE TWO INVESTIGATIONS  
Unit 1: Counting, Coins, And Combinations



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p>	<p><b>Unit 1:</b> Counting, Coins, and Combinations p. 125 Discussion 2, p. 131 Activity 2, p. 131 Activity 3, p. 171 Math Workshop 2</p>	<p><b>6.</b> Understand what it means to double a quantity.</p>	<p><b>Observation:</b> Session 4.6, p. 166; Session 4.7, p. 172; Session 4.8, p. 176.  <b>Writing:</b> Session 4.6, p. 168(Student Activity Book pp. 53-54).  <b>Portfolio:</b> Session 4.8, p. 176(M41, Assessment: How Many Cans?); Session 4.9, p. 179(M42-43, End of Unit Assessment: Our Class and the Magic Pot).</p>	<p>Calculators            Computer Software            Online Resources              Exam View            Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 2: Shapes, Blocks And Symmetry

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.2.</b> Describe attributes and part of two-and three-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p> <p><b>2.G.2.</b> Describe attributes and part of two-and three-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p> <p><b>2.G.3.</b> Recognize congruent shapes.</p> <p><b>2.G.7.</b> Relate geometric ideas to numbers, e.g., seeing rows in an array as a model of repeated addition.</p> <p><b>2.M.3</b> Compare the length, weight, area, and volume of two or more objects by using direct comparison.</p>	<p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 27 Activity 2, p. 32 Activity 1, p. 41 Activity 1, p. 42 Activity 2, p. 65 Discussion 2, p. 66 Activity 3, p. 70 Discussion 1, p. 107 Activity 1.</p> <p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 63 Activity 1, p. 65 Discussion 2, p. 70 Discussion 1, p. 72 Activity 2, p. 74 Discussion 3, p. 85 Activity 1, p. 88 Math Workshop 3, p. 93 Activity 1.</p> <p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 85 Activity 1.</p> <p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 80 Activity 3, p. 81 Discussion 4, p. 85 Activity 1, p. 87 Activity 2, p. 88 Math Workshop.</p> <p>(Length only)</p> <p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 78 Activity 1, p. 79 Discussion 2, p. 81 Discussion 4</p>	<p>1. Identify the number of sides of a polygon.</p> <p>2. Identify the number of rows and the number of squares in each row in an array.</p>	<p><b>Observation:</b> Session 2.1, pp. 64, 68; Session 2.2, p. 73.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 2.1, p. 66(M22, Assessment Checklist: Sorting Shapes by the Number of Sides).</p> <p><b>Observation:</b> Session 2.3, pp. 78-79, 81; Session 2.4, pp. 87, 89-90; Session 2.5, p. 95; Session 2.6, pp. 98, 100; Session 2.7, pp. 104-105; Session 3.5, p. 143.</p> <p><b>Writing:</b> Session 2.3, p. 81(Student Activity Book p. 17); Session 2.4, p. 89 (Student Activity Book pp. 19-20).</p> <p><b>Portfolio:</b> Session 3.5, p. 143(M42-42; End of Unit Assessment: Make a Rectangle).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p>Introducing the software: The Shapes software is introduced to students in this unit. If you are planning to use the software, you will need to familiarize your self with it. For information about Shapes software, refer to the Software Support Reference Guide found on the CD. To prepare to integrate this work into your classroom and to manage the computer environment, see Teacher Note: Introducing and Managing the Shapes software, p. 125, and Teacher Note: About Mathematics in the Shapes software, page 128, for further support and information.</p>

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GRADE TWO INVESTIGATIONS  
Unit 2: Shapes, Blocks And Symmetry

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.2.</b> Describe attributes and part of two-and three-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p> <p><b>2.M.3</b> Compare the length, weight, area, and volume of two or more objects by using direct comparison.</p> <p><b>2.G.1.</b> Describe attributes and parts of two-and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p><b>2.G.4.</b> Identify shapes that have been rotated (turned), reflected (flipped), translated (slid), and enlarged. Describe Direction of translations, e.g., left, right, up, down.</p> <p><b>2.G.6.</b> Predict the results of putting shapes together and taking them apart.</p>	<p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 38 Math Workshop 3D.</p> <p><b>Unit 2:</b> Shapes, Blocks, &amp; Symmetry p. 47 Activity 2, p. 48 Discussion 3, p. 51 Activity 1, p. 53 Math Workshop 3B.</p>	<p><b>3.</b> Identify rectangles as four-sided shapes with four right angles.</p> <p><b>4.</b> Identify the number of faces on a rectangular prism and show which faces are congruent.</p>	<p><b>Observation:</b> Session 2.2, p. 73; Session 2.3, pp. 78-79, 81; Session 2.5, p. 95; Session 2.6, pp. 98, 100; Session 2.7, pp. 104-105.</p> <p><b>Writing:</b> Session 2.3. p. 81(Student Activity Book p. 17).</p> <p><b>Portfolio:</b> Session 2.7, p. 104(M30, Assessment: Is It a Rectangle?).</p> <p><b>Observation:</b> Session 1.1, pp. 29-30; Session 1.2, pp. 35, 37-39; Session 1.3, pp. 42, 44; Session 1.5, pp. 53-55; Session 2.9, pp. 111, 113; Session 2.8, pp. 107, 109; Session 2.9, pp. 111, 113.</p> <p><b>Writing:</b> Session 1.5, p. 54(Student Activity Book pp. 9-10).</p> <p><b>Portfolio:</b> Session 2.9, p. 113(M31, Assessment: Faces of a Geoblock).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 2: Shapes, Blocks And Symmetry



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.G.5.</b> Identify symmetry in two-dimensional shapes.</p> <p><b>2.G.6.</b> Predict the results of putting shapes together and taking them apart.</p>	<p><b>Unit 2:</b> Shapes, Blocks, and Symmetry p. 121 Activity 1, p. 124 Math Workshop 3A, p. 128 Activity 1, p. 129 Math Workshop 3, p. 133 Activity 1, p. 134 Math Workshop 3, p. 138 Discussion 1.</p>	<p><b>5.</b> Make a symmetrical picture based on an image provided.</p> <p><b>6.</b> Demonstrate fluency with addition combinations: doubles combinations to 10 + 10.</p>	<p><b>Observation:</b> Session 3.1, pp. 123, 125-126; Session 3.2, pp. 130-131; Session 3.3, pp. 135-136; Session 3.4, p. 141.</p> <p><b>Writing:</b> Session 3.4, p. 140(Student Activity Book pp. 38-39).</p> <p><b>Portfolio:</b> Session 3.5, p. 143(M42-43, End of Unit Assessment: Complete the Shape).</p> <p><b>Observation:</b> Session 1.4, pp. 46, 48; Session 1.5, pp. 53-55; Session 3.4, p. 141.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.5, p. 144(M45, Assessment Checklist: Doubles Combinations).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 3: Stickers, Number Strings, And Story Problems

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.4.</b> Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than (&lt;,,=,&gt;).</p> <p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.8.</b> Understand and use the inverse relationship between addition and subtraction (e.g., <math>8 + 6 = 14</math> is equivalent to <math>14 - 6 = 8</math> and <math>14 - 8 = 6</math>) to solve problems and check solutions.</p>	<p><b>Unit 3:</b> Stickers, Number Strings, and Story Problems p. 90 Activity 2, p. 92 Discussion 2, p. 112 Discussion 3.</p>	<p><b>1.</b> Use known combinations to add several numbers in any order.</p> <p><b>2.</b> Interpret and solve subtraction (removal) and unknown change story problems with totals to 45.</p>	<p><b>Observation:</b> Session 1.1, p. 34; Session 1.2, p.41; Session 1.3, pp. 48-49; Session 1.4, p. 54; Session 1.5, p. 59; Session 1.6, p. 63.  <b>Writing:</b> Session 1.1, p. 33(Student Activity Book p. 2).  <b>Portfolio:</b> Session 1.6, p. 63(M17, Assessment: Number Strings).</p> <p><b>Observation:</b> Session 2.1, pp. 74, 79; Session 2.2, p. 85; Session 2.3, p. 91; Session 2.4, p. 99; Session 2.5, p. 106; Session 2.7, p. 117.  <b>Writing:</b> Session 2.4, pp. 98-99(Student Activity Book Pp. 29-30); Session 2.5, p. 108(Student Activity Book p. 34); Session 2.7, p. 118 (Student Activity Book p. 41).  <b>Portfolio:</b> Session 2.7, p. 117(M20, Assessment: Story Problems).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 3: Stickers, Number Strings, And Story Problems

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.N.5.</b> Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p> <p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.P.4.</b> Skip count by twos, fives, and tens up to at least 50, starting at any number.</p>	<p><b>Unit 3:</b> Stickers, Number Strings, &amp; Story Problems p. 127 Activity 2, p. 128 Discussion 3, p. 134 Activity 2, p. 135 Discussion 3, p. 138 Assessment Activity 1 &amp; 2.</p> <p><b>Unit 3:</b> Stickers, Number Stories, &amp; Story Problems p. 174 Discussion 1, p. 176 Activity 2, p. 188 Activity 1, p. 192 Discussion 3, p. 197 Discussion 2.</p> <p><b>Unit 3:</b> Stickers, Number Strips, &amp; Story Problems p. 125 Activity 1, p. 127 Activity 2, p. 128 Activity 3, p. 144 Activity 1, p. 145 Activity 2, p. 146 Discussion 3, p. 162 Discussion 2.</p>	<p><b>3.</b> Define even and odd numbers in terms of groups of two or two equal groups.</p> <p><b>4.</b> Recognize and identify coins and their value.</p>	<p><b>Observation:</b> Session 3.1, p. 127; Session 3.2, p. 134; Session 3.3, p. 138-139.</p> <p><b>Writing:</b> Session 3.2, pp. 134-135 (Student Activity Book pp. 47-48); Session 3.2, p. 136 (Student Activity Book p. 50).</p> <p><b>Portfolio:</b> Session 3.5, p. 138 (M23, Assessment: Even or Odd?).</p> <p><b>Observation:</b> Session 3.5, p. 151; Session 3.6, pp. 156-157, 159; Session 3.7, p. 162.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.5, p. 150 (M26, Assessment Checklist: Identifying Coins and Values).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 3: Stickers, Number Strings, And Story Problems

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.P.5.</b> Construct and solve open sentences that have variables, e.g., <math>n + 7 = 10</math>.</p> <p><b>2.N.4.</b> Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than (&lt;,,=,&gt;).</p> <p><b>2.N.7.</b> Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p> <p><b>2.N.8.</b> Understand and use the inverse relationship between addition and subtraction (e.g., <math>8 + 6 = 14</math> is equivalent to <math>14 - 6 = 8</math> and <math>14 - 8 = 6</math>) to solve problems and check solutions.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p>	<p><b>Unit 3:</b> Stickers, Number Strips, &amp; Story Problems p. 96 Activity 1.</p>	<p><b>5.</b> Count on or break apart numbers to add two or more numbers up to a total of 45.</p>	<p><b>Observation:</b> Session 2.1, pp. 74, 79; Session 2.2, p. 85; Session 2.3, p. 91; Session 2.4, p. 99; Session 2.5, p. 106.</p> <p><b>Writing:</b> Session 2.4, pp. 98-99(Student Activity Book pp. 29-30); Session 2.5, p. 108(Student Activity Book p. 34); Session 2.7, p. 118(Student Activity Book p. 41).</p> <p><b>Portfolio:</b> Session 4.6, pp. 201-202(M39-41, End of Unit Assessment: How Many People?)</p>	

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GRADE TWO INVESTIGATIONS  
Unit 3: Stickers, Number Strings, And Story Problems

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.1.</b> Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.6.</b> Identify the value of all U.S. coins, and \$1, \$5, \$10, &amp; \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., 69 , \$1.35 +</p> <p><b>2.P.7.</b> Describe functions related to trading including coin trades and measurement trades, e.g., five pennies make one nickel, or four cups make one quart.</p>	<p><b>Unit 3:</b> Stickers, Number Strips, &amp; Story Problems p. 180 Discussion 1.</p> <p><b>Unit 3:</b> Stickers, Number Strings, &amp; Story Problems p. 149 Activity 1.</p> <p><b>Unit 3:</b> Stickers, Number Strips, &amp; Story Problems p. 149 Activity 1, p. 151 Discussion 3.</p>	<p><b>6.</b> Interpret and solve problems about the number of tens and ones in a quantity.</p> <p><b>7.</b> Demonstrate fluency with addition combinations: near-doubles.</p>	<p><b>Observation:</b> Session 4.1, p. 171; Session 4.2, p. 176; Session 4.3, pp. 182-183; Session 4.4, p. 190; Session 4.5, p. 196.</p> <p><b>Writing:</b> Session 4.2, p. 176(Student Activity Book p. 65); Session 4.5, p. 196 (Student Activity Book p. 75).</p> <p><b>Portfolio:</b> Session 4.6, pp. 201-202(M39-41, End of Unit Assessment: How Many Boxes of Pencils?).</p> <p><b>Observation:</b> Session 1.5, p.59; Session 1.6, p. 63.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 4.6, pp. 201-202(M39-41, End of Unit Assessment: Near-Doubles Combinations).</p>	

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GRADE TWO INVESTIGATIONS  
Unit 4: Pockets, Teeth, & Favorite Things

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.D.1.</b> Use interviews, surveys, and observations to gather data about themselves and their surroundings.</p> <p><b>2.D.2.</b> Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams; interpret the representations.</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p> <p><b>2.D.1.</b> Use interviews, surveys, and observations to gather data about themselves and their surroundings.</p> <p><b>2.D.2.</b> Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams; interpret the representations.</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p>	<p><b>Unit 4:</b> Pockets, Teeth, &amp; Favorite Things p. 38 Activity 3, p. 46 Activity 3, p. 49 Discussion 1, p. 51 Activity 2.</p> <p><b>Unit 4:</b> Pockets, Teeth, &amp; Favorite Things p. 27 Activity 2, p. 42 Activity 1, p. 55 Activity 2, p. 57 Activity 3, p. 82 Activity 3, p. 85 Discussion 1, p. 93 Activity 1, p. 99 Discussion 2.</p> <p><b>Unit 4:</b> Pockets, Teeth, &amp; Favorite Things p. 25 Activity 1, p. 35 Activity 2, p. 44 Activity 2, p. 52 Activity 3, p. 63 Activity 1.</p>	<p>1. Use Venn diagram to sort data by two attributes.</p> <p>2. Identify categories for a set of categorical data and organize the data into chosen categories.</p>	<p><b>Observation:</b> Session 1.3, p. 44; Session 1.7, pp. 64; Session 2.8, p. 110 (Problem 3). <b>Writing:</b> <b>Portfolio:</b> Session 2.8, p. 109 (M57-58, End of Unit Assessment, Problem 3).</p> <p><b>Observation:</b> Session 1.1, pp. 27, 29; Session 1.2, p. 37; Session 1.4, p. 53; Session 1.5, pp. 57-58; <b>Writing:</b> <b>Portfolio:</b> Session 1.7, pp. 64-65 (M47-48, Assessment: What's Your Favorite Food?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 4: Pockets, Teeth, & Favorite Things

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.D.2.</b> Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams; interpret the representations.</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p> <p><b>2.D.2.</b> Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams; interpret the representations.</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p>		<p><b>3.</b> Order and represent a set of numerical data.</p> <p><b>4.</b> Describe a numerical data set, including the highest and lowest values and the mode.</p> <p><b>5.</b> Read and Interpret a variety of representations of numerical and categorical data.</p> <p><b>6.</b> Compare two sets of numerical data.</p> <p><b>7.</b> Demonstrate fluency with Plus 10 combinations.</p>	<p><b>Observation:</b> Session 1.6, p. 60; Session 2.1, p. 75; Session 2.2, pp. 81-82; Session 2.3, p. 88; Session 2.5, pp. 95-96; Session 2.7, pp. 104, 106 (Benchmark 4 only); Session 2.8, p. 110 (Problem 1).</p> <p><b>Writing:</b> Session 1.6, p. 60 (Student Activity Book p. 8); Session 2.3, p. 87 (Student Activity Book p. 20); Session 2.5, p. 95 (Student Activity Book p. 24); Session 2.7, p. 105 (Student Activity Book p. 32).</p> <p><b>Portfolio:</b> Session 1.7, pp. 64-65 (M47-48, Assessment: What's Your Favorite Food?); Session 2.8, p. 109 (M57-58, End of Unit Assessment, Problem 1, for Benchmark 3 only).</p> <p><b>Observation:</b> Session 2.6, p. 98; Session 2.8, p. 110 (Problem 2).</p> <p><b>Writing:</b> Session 2.6, p. 98 (Student Activity Book p. 18).</p> <p><b>Portfolio:</b> Session 2.8, p. 109 (M57-58, End of Unit Assessment, Problem 2).</p> <p><b>Observation:</b> Session 1.7, pp. 65;</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 1.7, p. 65 (M51, Assessment Checklist: Plus 10 Combinations).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE TWO INVESTIGATIONS  
Unit 4: Pockets, Teeth, & Favorite Things



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
2.D.4. Decide outcomes of experiments are most likely.	See Grade 4			

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GRADE TWO INVESTIGATIONS  
Unit 5: How Many Floors? How Many Rooms?

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.P.1.</b> Identify, reproduce, describe extend, and create simple rhythmic, , shape, size, number, color, and letter repeating patterns.</p> <p><b>2.M.2.</b> Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m. (classroom routines)</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p> <p><b>2.P.1.</b> Identify, reproduce, describe extend, and create simple rhythmic, , shape, size, number, color, and letter repeating patterns.</p> <p><b>2.M.2.</b> Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m. (classroom routines)</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p>	<p><b>Unit 5:</b> How Many Floors? How Many Rooms? p. 46 Discussion 2, p. 77 Discussion 1, p. 79 Activity 2, p. 80 Activity 3, p. 85 Activity 2, p. 90 Discussion 1, p. 92 Activity 2, p. 97 Activity 2, p. 98 Discussion 3.</p> <p><b>Unit 5:</b> How Many Floors? How Many Rooms? p. 65 Math Workshop 3.</p>	<p><b>1.</b> Explain what the numbers in a table represent in a constant ratio situation (involving ratios of 1:2, 1:3, 1:4, 1:5, and 1:6).</p> <p><b>2.</b> Complete and extend a table to match a situation involving a constant ratio.</p>	<p><b>Observation:</b> Session 1.1 p. 32; Session 1.3, pp. 45-46, 51; Session 1.4, pp. 54, 57-58; Session 1.5, pp. 63, 66. <b>Writing:</b> Session 1.5, p. 67 (Student Activity Book pp. 31-32). <b>Portfolio:</b> Session 1.4, p. 57 (M7, Assessment: Understanding Tables); Session 2.5, pp. 102-103 (M14-17, End of Unit Assessment: The Nickel Jar (Problem 1)).</p> <p><b>Observation:</b> Session 1.2, p. 41; Session 1.3, pp. 45-46, 51; Session 1.5, pp. 63, 66. <b>Writing:</b> Session 1.5, p. 67 (Student Activity Book pp. 31-32). <b>Portfolio:</b> Session 2.5, pp. 102-103 (M14-17, End of Unit Assessment: The Nickel Jar (Problem 1)).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 5: How Many Floors? How Many Rooms?

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.5.</b> Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p> <p><b>2.P.1.</b> Identify, reproduce, describe extend, and create simple rhythmic, , shape, size, number, color, and letter repeating patterns.</p> <p><b>2.P.4.</b> Skip count by twos, fives, &amp; tens up to at least 50, starting at any number.</p> <p><b>2.M.2.</b> Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m. (classroom routines)</p> <p><b>2.P.3.</b> Describe &amp; create addition and subtraction number patterns, e.g., 1, 4, 7, 10...; or 25, 23, 21...+</p>	<p><b>Unit 5:</b> How Many Floors? How Many Rooms? p. 83 Discussion 1.</p> <p><b>Unit 5:</b> How Many Floors? How Many Rooms? p. 83 Discussion 1, p. 96 Discussion 1.</p> <p><b>Unit 5:</b> How Many Floors? How Many Rooms? p. 44, Classroom Routines, p. 76 Classroom Routines, p. 95 Classroom Routines.</p> <p><b>Unit 5:</b> How Many Floors? How Many Rooms?</p>	<p><b>3.</b> Extend a repeating pattern and determine what element of the pattern will be in a particular position (e.g., the 16th position) if the pattern keeps going.</p>	<p><b>Observation:</b> Session 2.1, pp. 79, 81; Session 2.2, p. 87; Session 2.3, p. 93; Session 2.4, p. 98.</p> <p><b>Writing:</b> Session 2.2, p. 85 (Student Activity Book pp. 40-41); Session 2.3, p. 93 (Student Activity Book p. 45); Session 2.4, p. 98 (Student Activity Book p. 49).</p> <p><b>Portfolio:</b> Session 2.5, pp. 102-103 (M 14-17, End of Unit Assessment: Shape Patterns (Problem 2)).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 6: How Many Tens? How Many Ones?

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.12.</b> Estimate, calculate, and solve problems involving addition &amp; subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p> <p><b>2.P.2.</b> Identify different patterns on the hundreds chart.</p> <p><b>2.D.3.</b> Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p>	<p><b>Unit 6:</b> How Many Tens? How Many Ones? p. 38 Activity 1, p. 38 Discussion 2, p. 44 Activity 1, p. 44 Discussion 2.</p> <p><b>Unit 6:</b> How Many Tens? How Many Ones? p. 31 Discussion 1.</p> <p><b>Unit 6:</b> How Many Tens? How Many Ones? p. 56 Activity 2, p. 57 Activity 3, p. 58 Discussion 4.</p>	<p><b>1.</b> Write an equation that represents addition or subtraction situation.</p> <p><b>2.</b> Determine the difference between a number and any multiple of 10 up to 100.</p>	<p><b>Observation:</b> Session 1.1, p. 26; Session 1.2, p. 34; Session 1.3, p. 38; Session 2.5, p. 83.</p> <p><b>Writing:</b> Session 1.1, p. 26 (Student Activity Book pp. 1-2).</p> <p><b>Portfolio:</b> Session 1.2, p. 34 (Student Activity Book pp. 4-5); Session 1.3, p. 38 (Student Activity Book pp. 7-8); Session 1.4, pp. 44-45 (Student Activity Book pp. 13-14); Session 2.6, p. 91 (M20-21, Assessment: How Many More?).</p> <p><b>Observation:</b> Session 2.1, pp. 56, 58; Session 2.2, p. 65; Session 2.3, pp. 70, 72, 74; Session 2.4, p. 77; Session 2.5, p. 83; Session 2.6, p. 92.</p> <p><b>Writing:</b> Session 2.2, p. 68 (Student Activity Book p. 21); Session 2.3, p. 71 (Student Activity Book pp. 22-23) Session 2.5, p. 83 (Student Activity Book pp. 32-33).</p> <p><b>Portfolio:</b> Session 2.4, pp. 76-78 (Student Activity Book pp. 27-30); Session 2.6, p. 91 (M20-21, Assessment: How Many More?); Session 4.4, pp. 149-150 (M40-42, End of Unit Assessment, Spending a Dollar).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 6: How Many Tens? How Many Ones?

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.P.7.</b> Describe functions related to trading, including coin trades and measurement trades, e.g., five pennies make one nickel, or four cups make one quart.</p> <p><b>2.N.6.</b> Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., \$0.69, \$1.35.</p> <p><b>2.N.6.</b> Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., \$0.69, \$1.35.</p>	<p><b>Unit 6:</b> How Many Tens? How Many Ones? p. 134 Discussion 4.</p> <p><b>Unit 6:</b> How Many Tens? How Many Ones? p. 106 Activity 1, p. 120 Activity 1.</p>	<p><b>3.</b> Count by 2s, 5s, and 10s up to 110.</p> <p><b>4.</b> Add multiples of 5 up to 100.</p> <p><b>5.</b> Know coin equivalencies for nickel, dime, and quarter.</p>	<p><b>Observation:</b> Session 4.1, pp. 132, 134; Session 4.2, pp. 139-140; Session 4.3, p. 147; Session 4.4, p. 150.</p> <p><b>Writing:</b> Session 4.1, p. 131 (Student Activity Book p. 58); Session 4.2, pp. 138-139 (Student Activity Book pp. 62-63).</p> <p><b>Portfolio:</b> Session 4.3, p. 147 (M39, Assessment: Skip Counting Strips); Session 4.4, pp. 149-150 (M40-42, End of Unit Assessment).</p> <p><b>Observation:</b> Session 3.1, pp. 103-104; Session 3.2, p. 108; Session 3.5, p. 121;</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.1, p. 101 (Student Activity Book p. 39); Session 4.4, pp. 149-150 (M40-42, End of Unit Assessment, Spending a Dollar).</p> <p><b>Observation:</b> Session 3.2, p. 108; Session 3.3, p. 112; Session 3.4, p. 117.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.2, p. 108 (M29, Assessment Checklist: Coin Equivalencies).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 7: Parts of a Whole, Parts of a Group

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.3.</b> Identify and represent common fractions (<math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>) as parts of wholes, parts of groups, and numbers on the number line.</p>	<p><b>Unit 7:</b> Part of a Whole, Parts of a Group p. 23 Discussion 2, p. 32 Activity 1, p. 47 Activity 1, p. 54 Activity 1, p. 56 Activity 2, p. 59 Discussion 1, p. 62 Activity 2, p. 69 Discussion 1.</p>	<p>1. Identify <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, and <math>\frac{1}{4}</math> of a region.</p> <p>2. Find <math>\frac{1}{2}</math> of a set of objects.</p>	<p><b>Observation:</b> Session 1.1, p. 22; Session 1.2, pp. 28-29; Session 1.3, p. 33; Session 1.4, p. 38; Session 2.1, pp. 50-51; Session 2.2, p. 56. <b>Writing:</b> Session 1.3, p. 35 (Student Activity Book p. 16); Session 1.4, p. 40 (Student Activity Book p. 19); <b>Portfolio:</b> Session 1.1, pp. 21-22 (Student Activity Book pp. 1-5); Session 1.4, p. 38 (Student Activity Book pp. 17-18); Session 2.6, pp. 74-75 (M24-25, End of Unit Assessment, Problem 1).</p> <p><b>Observation:</b> Session 1.2, pp. 28-29; Session 1.3, p. 33; Session 1.4, p. 38; <b>Writing:</b> Session 1.3, p. 35 (Student Activity Book p. 16); Session 1.4, p. 40 (Student Activity Book p. 19); <b>Portfolio:</b> Session 1.4, p. 38 (Student Activity Book pp. 17-18); Session 2.6, pp. 74-75 (M24-25, End of Unit Assessment, Problem 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 7: Parts of a Whole, Parts of a Group



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
		<p>3. Recognize that a fraction divides the whole into equal parts.</p>	<p><b>Observation:</b> Session 1.1, p. 22; Session 1.3, p. 33; Session 1.4, p. 38; Session 2.1, pp. 50-51; Session 2.2, p. 56; Session 2.3, p. 63; Session 2.4, p. 65; Session 2.5, p. 71.  <b>Writing:</b> Session 1.4, p. 40 (Student Activity Book p. 19); Session 2.5, pp. 71-72 (Student Activity Book pp. 33-35).  <b>Portfolio:</b> Session 2.3, pp. 61-62 (Student Activity Book pp. 27-30); Session 2.5, pp. 71-72 (Student Activity Book, pp. 33-35); Session 2.6, pp. 74-75 (M24-25, End of Unit Assessment, Problem 3).</p>	<p>Calculators Computer Software Online Resources  Exam View Success Net</p>

Agawam Public Schools  
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GRADE TWO INVESTIGATIONS  
Unit 8: Partners, Teams, And Paper Clips

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.8.</b> Understand and use the inverse relationship between addition and subtraction (e.g., <math>8 + 6 = 14</math> is equivalent to <math>14 - 6 = 8</math> and is also equivalent to <math>14 - 8 = 6</math>) to solve problems and check solutions.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.12.</b> Estimate, calculate, and solve problems involving addition &amp; subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p> <p><b>2.N.5.</b> Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p>	<p><b>Unit 8:</b> Partners, Teams, &amp; Paper Clips pp. 88 - 91 Discussion 1.</p> <p><b>Unit 8:</b> Partners, Teams, &amp; Paper Clips p. 53 Discussion 1, p. 60 Activity 1, p. 62 Discussion 3.</p> <p><b>Unit 8:</b> Partners, Teams, &amp; Paper Clips p. 25 Discussion 1</p>	<p><b>1.</b> Subtract 2-digit numbers.</p> <p><b>2.</b> Reason about partners, teams, and leftovers to make and justify generalizations about what happens when even and odd numbers are added.</p>	<p><b>Observation:</b> Session 3.1, pp. 73-75; Session 3.2, pp. 79-80, 85-86; Session 3.3, pp. 93-94; Session 3.4, pp. 99-100.  <b>Writing:</b> Session 3.4, p. 99 (Student Activity Book p. 36).  <b>Portfolio:</b> Session 3.5, p. 105 (M24, Assessment: Paper Clips and Cherries).</p> <p><b>Observation:</b> Session 1.1, p. 29; Session 1.3, pp. 39-40.  <b>Writing:</b> Session 1.3, pp. 38-40, 42 (Student Activity Book pp. 7-11, 13-14).  <b>Portfolio:</b> Sessions 1.3-1.4, pp. 39-40 (Student Activity Book pp. 9-1); Session 4.5, pp. 147-148 (M41-45, End of Unit Assessment, Problems 1-3).</p>	<p>Calculators            Computer Software            Online Resources</p> <p>Exam View            Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 8: Partners, Teams, And Paper Clips

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.12.</b> Estimate, calculate, and solve problems involving addition &amp; subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p> <p><b>2.N.9.</b> Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p><b>2.N.12.</b> Estimate, calculate, and solve problems involving addition &amp; subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p>	<p><b>Unit 8:</b> Partners, Teams, &amp; Paper Clips p. 79 Activity 1, p. 85 Activity 3.</p>	<p><b>3.</b> Add two 2-digit numbers accurately and efficiently.</p> <p><b>4.</b> Demonstrate fluency with addition combinations: plus 9 and remaining combinations.</p>	<p><b>Observation:</b> Session 4.1, pp. 113-114, 119-120; Session 4.2, pp. 125-126; Session 4.3, p. 133; Session 4.4, pp. 138-139.</p> <p><b>Writing:</b> Session 4.2, pp. 125, 129 (Student Activity Book pp. 48, 50-51); Session 4.3, p. 133 (Student Activity Book p. 52); Session 4.4, p. 139 (Student Activity Book p. 58).</p> <p><b>Portfolio:</b> Session 4.1, pp. 119-120 (Student Activity Book pp. 42-43); Session 4.2, pp. 123, 125 (M27, Today's Number: 71, and Student Activity Book pp. 47-48); Session 4.4, pp. 147-148 (Student Activity Book pp. 57-58); Session 4.5, pp. 147-148 (M41-45, End of Unit Assessment, Problems 4-5).</p> <p><b>Observation:</b> Session 2.1, pp. 57-58; Session 2.2, p. 61; Session 3.1, pp. 73-75; Session 3.2, pp. 79-80, 85-86; Session 3.3, pp. 93-94; Session 3.4, pp. 99-100; Session 3.5, pp. 105-107.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 4.5, pp. 147-148 (M41-45, End of Unit Assessment, Problems 6A-6M).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 8: Partners, Teams, And Paper Clips



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.N.10.</b> Demonstrate the ability to add and subtract 3-digit numbers accurately and efficiently.</p> <p><b>2.N.11.</b> Demonstrate in the classroom and understanding of and ability to use the conventional algorithms for addition (two 3-digit numbers and three 2-digit number) and subtraction (two 3-digit numbers).</p>	<p><b>See Grade 3.</b></p> <p><b>See Grade 3.</b></p>			<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 9: Measuring Length And Time

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.M.3.</b> Compare the length, weight, areas, &amp; volume of two or more objects by using direct comparison.</p> <p><b>2.M.4.</b> Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.</p> <p><b>2.M.5.</b> Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.</p> <p><b>2.M.6.</b> Make and use estimates of measurement, including time, volume, weight, and area.</p> <p><b>2.M.4.</b> Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.</p> <p><b>2.M.5.</b> Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.</p>	<p><b>Unit 9:</b> Measuring Length &amp; Time p. 30 Math Workshop 2B.</p> <p><b>Unit 9:</b> Measuring Length &amp; Time p. 60 Activity 2, p. 62 Discussion 2, p. 68 Math Workshop 2B, p. 72 Activity 2, p. 88 Math Workshop 3, p. 92 Discussion 1, p. 99 Math Workshop 3, p. 102 Activity 2.</p>	<p>1. Identify sources of measurement error.</p> <p>2. Recognize that the same count of different-sized units yields different lengths.</p>	<p><b>Observation:</b> Session 1.1, p. 26; Session 1.2, p. 32; Session 1.3, p. 39; Session 1.4, p. 45; Session 1.6, pp. 52, 54; Session 2.1, p. 62; Session 2.2, pp. 67-69.</p> <p><b>Writing:</b> Session 1.1, p. 27 (Student Activity Book p. 2); Session 1.2, p. 31 (Student Activity Book p. 5); Session 1.6, p. 52 (Student Activity Book p. 17);</p> <p><b>Portfolio:</b> Session 1.6, p. 52 (M6, Assessment: A Measurement Disagreement).</p> <p><b>Observation:</b> Session 3.1, p. 82.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 3.1, p. 82 (M13, Assessment: The King's Foot).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 9: Measuring Length And Time

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.M.3.</b> Compare the length, weight, areas, &amp; volume of two or more objects by using direct comparison.</p> <p><b>2.M.4.</b> Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.</p> <p><b>2.M.4.</b> Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.</p> <p><b>2.M.5.</b> Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.</p>	<p><b>Unit 9:</b> Measuring Length &amp; Time p. 25 Activity 1, p. 26 Activity 2, p. 27 Discussion 3, p. 30 Activity 1, p. 45 Discussion 2.</p> <p><b>Unit 9:</b> Measuring Length &amp; Time, p. 33 Discussion 3, p. 40 Discussion 3, p. 92 Discussion 1, p. 93 Math Workshop 2 (Linear only)</p>	<p><b>3.</b> Recognize that, when measuring the same length, larger units yield smaller counts.</p> <p><b>4.</b> Measure objects using inches and centimeters.</p> <p><b>5.</b> Use a ruler to measure lengths longer than one foot.</p>	<p><b>Observation:</b> Session 1.4, p. 45; Session 1.5, p. 48; Session 1.6, pp. 52, 54; Session 2.1, p. 62; Session 2.2, pp. 67-69; Session 3.1, p. 82.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 1.6, p. 52 (M6, Assessment: A Measurement Disagreement); Session 3.1, p. 82 (M13, Assessment: The King's Foot); Session 4.7, pp. 144-145 (M32-35, End of Unit Assessment, Problem 1: Inches and Centimeters).</p> <p><b>Observation:</b> Session 2.2, pp. 67-69; Session 2.3, p. 72; Session 3.2, pp. 86, 89-90; Session 3.3, p. 93; Session 3.4, pp. 98, 100; Session 3.5, p. 103.</p> <p><b>Writing:</b> Session 3.2, p. 86 (Student Activity Book p. 32); Session 3.3, p. 93 (Student Activity Book p. 39); Session 3.4, p. 99 (Student Activity Book p. 44); Session 3.5, p. 102 (Student Activity Book p. 47).</p> <p><b>Portfolio:</b> Session 4.7, pp. 144-145 (M32-35, End of Unit Assessment, Problem 1: Inches and Centimeters).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE TWO INVESTIGATIONS  
Unit 9: Measuring Length And Time

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>2.M.1.</b> Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar.</p> <p><b>2.M.1.</b> Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar.</p>	<p><b>Unit 9:</b> Measuring Length &amp; Time p. 112 Activity 2, p. 117 Activity 1, p. 129 Activity 2.</p>	<p><b>6.</b> Solve problems involving the beginning time of an event, ending time of an event, and duration of the event; given two of these, find the third for events beginning and ending on the hour or half-hour.</p> <p><b>7.</b> Use a timeline to record and determine duration to the hour or half hour.</p>	<p><b>Observation:</b> Session 4.4, pp. 128, 130, 132; Session 4.5, pp. 135, 138. <b>Writing:</b> Session 4.4, p. 131 (Student Activity Book p. 63). <b>Portfolio:</b> Session 4.7, pp. 144-145 (M32-35, End of Unit Assessment, Problem 2: Chris' Story Timeline Problems).</p> <p><b>Observation:</b> Session 4.1, p. 115; Session 4.2, pp. 118-119; Session 4.3, p. 123; Session 4.4, pp. 128, 130, 132; Session 4.6, p. 141. <b>Writing:</b> Session 4.4, p. 131 (Student Activity Book p. 63). <b>Portfolio:</b> Session 4.1, p. 111 (M18, Today's Number: 72); Session 4.7, pp. 144-145 (M32-35, End of Unit Assessment, Problem 2: Chris' Story Timeline Problems).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE THREE INVESTIGATIONS  
Unit 1: Trading Stickers Combining Coins



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.1.</b> Exhibit an understanding of the values of the digits in the base ten number system by reading, modeling, writing, comparing, and ordering whole numbers through 9,999.</p> <p><b>3.N.2.</b> Represent, order, and compare numbers through 9,999. Represent numbers using expanded notation (e.g., <math>853 = 8 \times 100 + 5 \times 10 + 3</math>), and written out in words (e.g., eight hundred fifty-three).</p> <p><b>3.N.1.</b> Exhibit an understanding of the values of the digits in the base ten number system by reading, modeling, writing, comparing, and ordering whole numbers through 9,999.</p> <p><b>3.N.8.</b> Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p>	<p><b>Unit 1:</b> Trading Stickers, Combining Coins p. 27 Activity 1, p. 77 Activity 1 p. 78 Activity 2, p. 81 Discussion 3, p. 84 Session Follow-Up, p. 134 Discussion 1.</p> <p><b>Unit 1:</b> Trading Stickers, Combining Coins p. 27 Activity 1, p. 77 Activity 1, p. 78 Activity 2, p. 81 Discussion 3, p. 84 Session Follow-Up, p. 134 Discussion 1.</p> <p><b>Unit 1:</b> Trading Stickers, Combining Coins p. 31 Activity 2, p. 66 Activity 1, p. 70 Math Workshop 2C</p>	<p><b>1.</b> Demonstrate fluency with the addition combinations up to <math>10 + 10</math>.</p> <p><b>2.</b> Add multiples of 10 (up to 100) to and subtract them from 2- and small 3-digit numbers.</p>	<p><b>Observation:</b> Session 2.1, p. 100; <b>Writing:</b> <b>Portfolio:</b> Session 2.5, p. 122 (M44, Assessment: Addition Combinations).</p> <p><b>Observation:</b> Session 1.1, p. 32; Session 1.2: p.42; Session 1.4, p. 55; Session 1.5, p. 63; Session 1.6, p. 69; Session 1.7, p.75; <b>Writing:</b> Session 1.2, p. 43 (Student Activity Book p. 11); Session 1.6, p. 70 (Student Activity Book p. 24); <b>Portfolio:</b> Session 1.4, p. 55 (Student Activity Book pp. 15-16); Sessions 1.6-1.7, pp. 68, 74 (Assessment: Adding &amp; subtracting 10s).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

Agawam Public Schools  
Massachusetts Learning Standards

GRADE THREE INVESTIGATIONS  
Unit 1: Trading Stickers Combining Coins



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.1.</b> Exhibit an understanding of the values of the digits in the base ten number system by reading, modeling, writing, comparing, and ordering whole numbers through 9,999.</p> <p><b>3.N.8.</b> Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p> <p><b>3.N.12.</b> Understand and use the strategies of rounding and regrouping to estimate quantities, measures, &amp; the results of whole-number computations (addition, subtraction, and multiplication) up to two-digit whole numbers and amounts of money to \$100, and to judge the reasonableness of the answer.</p> <p><b>3.P.2.</b> Determine which symbol (&lt;, &gt;, or =) is appropriate for a given number sentence, e.g., <math>7 \times 8 \text{ ? } 49 + 6</math>.</p>	<p><b>Unit 1:</b> Trading Stickers, Combining Coins p. 110 Activity 1, p. 116 Ten-Minute Math, p. 121 Ten-Minute Math, p. 125 Ten-Minute Math, p. 133 Ten Minute Math, p. 139 Ten Minute Math.</p> <p><b>Unit 1:</b> Trading Stickers, Combining Coins p. 110 Activity 1, p. 116 Ten-Minute Math, p. 121 Ten-Minute Math</p>	<p><b>3.</b> Solve addition problems with 2-digit numbers using strategies that involve breaking numbers apart by place or adding one number in parts.</p>	<p><b>Observation:</b> Session 1.2: p.42; Session 1.3, p. 49; Session 1.9, p. 89.</p> <p><b>Writing:</b> Session 2.2, p. 108 (Student Activity Book p 40); Session 2.3, p. 112 (Student Activity Book p. 41-42).</p> <p><b>Portfolio:</b> Session 1.2, p. 40 (Student Activity Book pp. 9-10); Session 1.9, p. 88 (M21-22, Assessment: Hundreds, Tens, and Ones, problem 1, Part A); Session 2.8, p. 140 (M46-48, End of Unit Assessment problem 1).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 1: Trading Stickers Combining Coins



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.1.</b> Exhibit an understanding of the values of the digits in the base ten number system by reading, modeling, writing, comparing, and ordering whole numbers through 9,999.</p> <p><b>3.N.2.</b> Represent, order, and compare numbers through 9,999. Represent numbers using expanded notation (e.g., <math>853 = 8 \times 100 + 5 \times 10 + 3</math>), and written out in words (e.g., eight hundred fifty-three).</p> <p><b>3.N.12.</b> Understand and use the strategies of rounding and regrouping to estimate quantities, measures, &amp; the results of whole-number computations (addition, subtraction, and multiplication) up to two-digit whole numbers and amounts of money to \$100, and to judge the reasonableness of the answer.</p>		<p><b>4.</b> Break up 3-digit numbers (less than 200) into 100s, 10s, and 1s in different ways (e.g., 153 equals 1 hundred, 5 tens, and 3 ones; 15 tens and 3 ones; 14 tens and 13 ones, etc.).</p>	<p><b>Observation:</b> Session 1.8, p. 80; Session 1.9, p. 89; Session 2.6: p. 131;  <b>Writing:</b> Session 2.7, p. 136 (Student Activity Book p. 55).  <b>Portfolio:</b> Session 1.9, p. 88 (M21-22, Assessment: Hundreds, Tens, &amp; Ones, problem 2); Session 2.7, p. 136 (Student Activity Book p. 55); Session 2.8, p. 140 (M46-48, End of Unit Assessment problem 3).</p>	<p>Calculators            Computer Software            Online Resources</p> <p>Exam View            Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 1: Trading Stickers Combining Coins



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.1.</b> Exhibit an understanding of the values of the digits in the base ten number system by reading, modeling, writing, comparing, and ordering whole numbers through 9,999.</p> <p><b>3.N.2.</b> Represent, order, and compare numbers through 9,999. Represent numbers using expanded notation (e.g., <math>853 = 8 \times 100 + 5 \times 10 + 3</math>), and written out in words (e.g., eight hundred fifty-three).</p> <p><b>3.N.8.</b> Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p> <p><b>3.N.12.</b> Understand and use the strategies of rounding and regrouping to estimate quantities, measures, &amp; the results of whole-number computations (addition, subtraction, and multiplication) up to two-digit whole numbers and amounts of money to \$100, and to judge the reasonableness of the answer.</p>		<p><b>5.</b> Find combinations of 2-digit numbers that add to 100 or \$1.00.</p>	<p><b>Observation:</b> Session 1.6, pp. 69-70; Session 1.7, p. 75; Sessions 2.2-2.3 pp. 103-107, 112-113, and 2.5-2.7, pp. 124, 131, 138: Close to 100; Session 2.2, p. 107; Sessions 2.4-2.7, pp. 118-119, 123, 131,137: Make a Dollar.</p> <p><b>Writing:</b> Session 2.2, p. 108 (Student Activity Book p. 40); Session 2.3, p. 112 (Student Activity Book pp. 41-42);</p> <p><b>Portfolio:</b> Session 1.9, p. 88 (M21-22, Assessment: Hundreds, Tens, &amp; Ones, problem 1, Part B); Session 2.3, p. 112 (Student Activity Book pp. 41-42); Session 2.5, p. 122 (M44, Assessment: Addition Combinations); Session 2.8, p. 140 (M46-48, End of Unit Assessment problem 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 1: Trading Stickers Combining Coins



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.P.2.</b> Determine which symbol (&lt;, &gt;, or =) is appropriate for a given number sentence, e.g., <math>7 \times 8</math> .?. <math>49 + 6</math>.</p> <p><b>3.M.2.</b> Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.</p>	<p><b>Unit 1:</b> Trading Stickers, Combining Coins, p. 117 Activity 1, p. 118 Activity 2, p. 119 Activity 3.</p>			<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 2: Surveys and Line Plots



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.M.1.</b> Demonstrate an understanding of the attributes of length, area, &amp; weight, and select the appropriate type of unit for measuring each attribute using both the U.S. Customary (English) and metric systems.</p> <p><b>3.M.2.</b> Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.</p> <p><b>3.M.5.</b> Identify and use appropriate metric and U.S. Customary (English) units and tools (e.g., ruler, scale, thermometer, clock) to estimate, measure, and solve problems involving length, area, weight, temperature, &amp; time.</p> <p><b>3.D.1.</b> Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.</p> <p><b>3.D.2.</b> Match representations of a data set in the forms of tables, line plots, pictographs, tallies, or bar graphs with the actual data set.</p>	<p><b>Unit 2:</b> Surveys &amp; Line Plots p. 125 Activity 1, p. 127 Math Workshop 2A</p> <p><b>Unit 2:</b> Surveys &amp; Line Plots p. 25 Discussion 2, p. 29 Activity 3, p. 34 Discussion 1, p. 35 Activity 2, p. 43 Activity 2, p. 44 Discussion 3, p. 56 Activity 1</p> <p><b>Unit 2:</b> Surveys &amp; Line Plots p. 133 Activity 1, p. 142 Discussion 1, p. 144 Math Workshop 2A, p. 147 Session Follow-Up 4</p>	<p><b>1.</b> Organize, represent, and describe categorical data, choosing categories that help make sense of the data.</p>	<p><b>Observation:</b> Session 1.1, p. 30; Session 1.2, p. 37; Session 1.3, p. 43; Session 1.7, pp. 70, 72; Session 1.8, p. 75; Session 3.1, pp. 127, 128, 130; Session 3.2, pp. 134, 135, 138; Session 3.3, p. 144; Session 3.4, p. 151.</p> <p><b>Writing:</b> Session 1.1, p. 30 (Student Activity Book p. 1).</p> <p><b>Portfolio:</b> Session 3.5, p. 155 (M19-20, End of Unit Assessment, problem 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Getting Started with the LogoPaths Software:</b> Students are formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit Perimeter, Angles, and Area, the fourth unit in the Grade 3 sequence. However, if you plan to use the software this year, we recommend that students have access to the software outside of math time starting with this unit in order to return to Get the Toys, a LogoPath activity from Grade 3, and to spend time with the Free Explore option. For information about the LogoPaths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in Implementing Investigations in Grade 3: Introducing and Managing the LogoPaths software in Grade 3.</p>

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GRADE THREE INVESTIGATIONS  
Unit 2: Surveys and Line Plots



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.D.3.</b> Construct and draw conclusions from representations of data sets in the forms of tables, line plots, pictographs, tallies, and bar graphs.</p> <p><b>3.D.1.</b> Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.</p> <p><b>3.D.2.</b> Match representations of a data set in the forms of tables, line plots, pictographs, tallies, or bar graphs with the actual data set.</p> <p><b>3.D.3.</b> Construct and draw conclusions from representations of data sets in the forms of tables, line plots, pictographs, tallies, and bar graphs.</p> <p><b>3.D.4.</b> List and count the number of possible combinations of objects from two sets, e.g., how many different outfits can one make from a set of two sweaters and a set of three skirts?</p>	<p><b>Unit 2:</b> Surveys &amp; Line Plots p. 35 Activity 2, p. 43 Activity 2, p. 44 Discussion 3, p. 50 Discussion 1, p. 83 Discussion 1, p. 85 Activity 2, p. 108 Discussion 1, p. 85 Activity 2, p. 108</p> <p><b>Unit 2:</b> Surveys &amp; Line Plots p. 44 Discussion 3, p. 50 Discussion 1, p. 51 Activity 2, p. 59 Assessment Activity 3, p. 74 Discussion 1, p. 75 Discussion 3</p>	<p><b>2.</b> Interpret a bar graph.</p>	<p><b>Observation:</b> Session 1.4, p. 54; Session 1.5, p. 60; Session 1.7, pp. 70, 72; Session 2.7, p. 118.</p> <p><b>Writing:</b> Session 1.5, p. 60 (Student Activity Book p. 14).</p> <p><b>Portfolio:</b> Session 1.4, p. 53 (Student Activity Book pp. 8 - 9); Session 1.5, p. 60 (Student Activity Book p. 14); Sessions 1.5-1.6, pp. 59, 64 (M9, Assessment: Interpreting Bar Graphs).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 2: Surveys and Line Plots



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.D.1.</b> Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.</p> <p><b>3.D.2.</b> Match representations of a data set in the forms of tables, line plots, pictographs, tallies, or bar graphs with the actual data set.</p> <p><b>3.D.3.</b> Construct and draw conclusions from representations of data sets in the forms of tables, line plots, pictographs, tallies, and bar graphs.</p>		<p><b>3.</b> Make a line plot for a set of numerical data.</p>	<p><b>Observation:</b> Session 2.1, p. 86; Session 2.2, p. 91; Session 2.3, p. 100; Session 2.4, p. 105.</p> <p><b>Writing:</b> Session 2.2, p. 91 (Student Activity Book p. 27); Session 2.6, p. 115 (Student Activity Book pp. 39–40).</p> <p><b>Portfolio:</b> Session 2.6, p. 114 (M14-15, Assessment: How Many People Live in Your Home?).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 2: Surveys and Line Plots



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.M.2.</b> Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.</p> <p><b>3.M.5.</b> Identify and use appropriate metric and U.S. Customary (English) units and tools (e.g., ruler, scale, thermometer, clock) to estimate, measure, and solve problems involving length, area, weight, temperature, &amp; time.</p> <p><b>3.D.2.</b> Match representations of a data set in the forms of tables, line plots, pictographs, tallies, or bar graphs with the actual data set.</p>		<p><b>4.</b> Describe the shape of the data for a numerical data set, including where the data are concentrated, where there are few data, what the lowest and highest values are, what the mode is, &amp; where there is an outlier.</p>	<p><b>Observation:</b> Session 2.2, p. 91; Session 2.5, p. 111; Session 2.6, pp. 114-115; Session 3.1, pp. 127, 128, 130; Session 3.2, pp. 134, 135, 138; Session 3.3, p. 144; Session 3.4, p. 151.</p> <p><b>Writing:</b> Session 2.6, p. 115 (Student Activity Book pp. 39-40); Session 3.2, p. 140 (Student Activity Book p. 48); Session 3.4, p. 150 (Student Activity Book p. 55).</p> <p><b>Portfolio:</b> Session 2.2, p. 90 (Student Activity Book pp. 25-26); Sessions 2.5, 2.6, and 2.7, pp. 107–120 (Assessment Activity: Data Projects); Session 2.5, p. 110 (M13, Assessment Checklist: Data Projects); Session 2.6, p. 114 (M14-15, Assessment: How Many People Live in Your Home?); Session 3.3, p. 144 (Student Activity Book pp. 49-50); Session 3.5, p. 155 (M19-20, End of Unit Assessment, problem 1).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 2: Surveys and Line Plots



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.M.2.</b> Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.</p> <p><b>3.D.2.</b> Match representations of a data set in the forms of tables, line plots, pictographs, tallies, or bar graphs with the actual data set.</p> <p><b>3.D.3.</b> Construct and draw conclusions from representations of data sets in the forms of tables, line plots, pictographs, tallies, and bar graphs.</p>		<p><b>5.</b> Summarize a set of data, describing concentrations and what those concentrations mean in terms of the situation the data represent.</p>	<p><b>Observation:</b> Session 1.7, pp. 70, 72; Session 1.8, p. 75; Session 2.2, p. 91; Session 2.6, pp. 114-115; Session 2.7, p. 118; Session 3.4, p. 151.</p> <p><b>Writing:</b> Session 2.6, p. 115 (Student Activity Book pp. 39-40); Session 3.4, p. 150 (Student Activity Book p. 55).</p> <p><b>Portfolio:</b> Sessions 2.5, 2.6, and 2.7, pp. 107-120 (Assessment Activity: Data Projects); Session 2.5, p. 110 (M13, Assessment Checklist: Data Projects); Session 2.6, p. 114 (M14-15, Assessment: How Many People Live in Your Home?); Session 2.6, p. 115 (Student Activity Book. Pp. 39 – 40); Session 3.5, p. 155 (M19-20, End of Unit Assessment, problem 1).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 3: Collections And Travel Stories



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.M.2.</b> Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.</p>	<p><b>Unit 3:</b> Collections &amp; Travel Stories p. 71 Activity 2.</p>	<p><b>1.</b> Read, write, and sequence numbers up to 1,000.</p> <p><b>2.</b> Identify the value of each digit in a 3-digit number (100s, 10s, and 1s).</p> <p><b>3.</b> Identify how many groups of 10 are in a 3-digit number (e.g., 153 has 15 groups of 10 plus 3 ones).</p>	<p><b>Observation:</b> Session 1.1, p. 32; Session 1.3, p. 44; Session 2.3, p. 83.  <b>Writing:</b> Session 1.1, p. 32 (Student Activity Book p. 1); Session 3.4, p. 135 (Student Activity Book p. 56).  <b>Portfolio:</b> Session 2.3, p. 83 (M35-36, Assessment: Numbers on the 1,000 Chart).</p> <p><b>Observation:</b> Session 1.2, p. 37; Session 1.3, p. 44; Session 2.3, p. 83.  <b>Writing:</b>  <b>Portfolio:</b> Session 2.3, p. 83 (M35-36, Assessment: Numbers on the 1,000 Chart).</p> <p><b>Observation:</b> Session 1.4, p. 49; Session 1.5, p. 54; Session 2.3, p. 83.  <b>Writing:</b> Session 1.4, p. 49 (Student Activity Book pp. 10-11).  <b>Portfolio:</b> Session 2.3, p. 83 (M35-36, Assessment: Numbers on the 1,000 Chart).</p>	<p>Calculators            Computer Software            Online Resources</p> <p>Exam View            Success Net</p> <p><b>Getting Started with the LogoPaths Software:</b> Students are formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit Perimeter, Angles, and Area, the fourth unit in the Grade 3 sequence. However, if you plan to use the software this year, we recommend that students have access to the software outside of math time starting with this unit in order to return to Get the Toys, a LogoPath activity from Grade 3, and to spend time with the Free Explore option. For information about the LogoPaths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in Implementing Investigations in Grade 3: Introducing and Managing the LogoPaths software in Grade 3.</p>





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GRADE THREE INVESTIGATIONS  
Unit 3: Collections And Travel Stories



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.M.5.</b> Identify and use appropriate metric and U.S. Customary (English) units and tools (e.g., ruler, scale, thermometer, clock) to estimate, measure, and solve problems involving length, area, weight, temperature, &amp; time.</p>	<p><b>Unit 3:</b> Collections &amp; Travel Stories p. 113 Activity 3.</p>			<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>



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GRADE THREE INVESTIGATIONS  
Unit 4: Perimeter, Angles And Area



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.M.1.</b> Demonstrate an understanding of the attributes of length, area, &amp; weight, and select the appropriate type of unit for measuring each attribute using both the U.S. Customary (English) and metric systems.</p> <p><b>3.M.4.</b> Estimate and find area and perimeter of a rectangle, using diagrams and grids, or by measuring.</p> <p><b>3.G.1.</b> Compare and analyze attributes &amp; other features (e.g., number of sides, corners, diagonals, and lines of symmetry) of two-dimensional shapes.</p> <p><b>3.G.2.</b> Describe, model, draw, compare, &amp; classify 2-dimensional shapes, e.g., circles, triangles, and quadrilaterals. Identify &amp; describe simple 3-dimensional shapes, e.g., cubes, spheres, and pyramids.</p>	<p><b>Unit 4:</b> Perimeter, Angles, &amp; Area p. 30 Activity 1, p. 32 Discussion 2, p. 34 Activity 3, p. 39 Math Workshop 2, p. 69 Discussion 1</p> <p><b>Unit 4:</b> Perimeter, Angles, &amp; Area p. 105 Activity 1, p. 108 Discussion 3, p. 112 Discussion 2, p.117 Activity 1, p. 120 Discussion 3, p. 124 Discussion 1.</p> <p><b>Unit 4:</b> Perimeter, Angles, &amp; Area p. 117 Activity 1, p. 118 Math Workshop 2A, p. 120 Discussion 3, p. 130 Math Workshop 1B.</p>	<p><b>2.</b> Identify and find the area of given figures by counting whole and partial square units.</p> <p><b>3.</b> Identify triangles as three-sided closed figures with three vertices and three angles.</p>	<p><b>Observation:</b> Session 2.1, pp. 64, 67; Session 2.2, p. 72; Session 2.3, p. 77; Session 2.4, pp. 84-85; Session 2.5, p. 92; Session 2.6, p. 95. <b>Writing:</b> Session 2.1, p. 67 (Student Activity Book p. 20); Session 2.4, p. 84 (Student Activity Book pp. 29-30). <b>Portfolio:</b> Session 2.6, p. 95 (M20, Assessment: Make a Shape); Session 3.6, p. 135 (M22-24, End of Unit Assessment, problem 1).</p> <p><b>Observation:</b> Session 3.1, p. 106; Session 3.2, p. 111. <b>Writing:</b> Session 3.2, p. 111 (Student Activity Book p. 41). <b>Portfolio:</b> Session 3.6, p. 135 (M22-24, End of Unit Assessment, problem 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Introducing the Software</b> The Logo Paths software is introduced to students in this unit. If you are planning to use the software, you will need to familiarize yourself with it. For information about the LogoPaths software, refer to the Software Support Reference Guide found on the CD. To prepare to intergrate this work into your classroom and to manage the computer environment, see Teacher Note: Using the LogoPaths software, page 139, and Teacher Note: About the LogoPaths software, page 141, for further support &amp; information.</p>

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GRADE THREE INVESTIGATIONS  
Unit 4: Perimeter, Angles And Area



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.G.1.</b> Compare and analyze attributes &amp; other features (e.g., number of sides, corners, diagonals, and lines of symmetry) of two-dimensional shapes.</p> <p><b>3.G.2.</b> Describe, model, draw, compare, &amp; classify 2-dimensional shapes, e.g., circles, triangles, and quadrilaterals. Identify &amp; describe simple 3-dimensional shapes, e.g., cubes, spheres, and pyramids.</p> <p><b>3.G.3.</b> Identify angles as right angles, less than a right angle, and greater than a right angle.</p>	<p><b>Unit 4:</b> Perimeter, Angles &amp; Area p. 108 Discussion 3, p. 120 Discussion 3, p. 124 Discussion 1, p. 126 Activity 2, p. 130 Math Workshop 1A, p. 131 Discussion 2.</p>	<p><b>4.</b> Identify right angles, and recognize whether an angle is larger or smaller than a right angle.</p>	<p><b>Observation:</b> Session 3.3, pp. 118-119; Session 3.4, p. 127; Session 3.5, p. 130. <b>Writing:</b> Session 3.3, p. 118 (Student Activity Book pp. 45-46). <b>Portfolio:</b> Session 3.4, p. 126 (Student Activity Book pp. 49-50); Session 3.6, p. 135 (M22-24, End of Unit Assessment, problem 3).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 5: Equal Groups



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.6.</b> Select, use, and explain various meanings and models of multiplication (through 10 X 10). Relate multiplication problems to corresponding division problems, e.g., draw a model to represent 5 X 6 and 30/6.</p> <p><b>3.N.10.</b> Add and subtract (up to four-digit numbers) and multiply (up to two-digit numbers by a one-digit number) accurately and efficiently.</p> <p><b>3.P.4.</b> Write number sentences using +, -, X, division symbol, &lt;, +, and/or &gt; to represent mathematical relationships in everyday situations.</p> <p><b>3.M.5.</b> Identify and use appropriate metric and U.S. Customary (English) units and tools (e.g., ruler, scale, thermometer, clock) to estimate, measure, and solve problems involving length, area, weight, temperature, &amp; time. <i>(THIS STANDARD APPLIES TO CLASSROOM ROUTINES THROUGHOUT THE ENTIRE UNIT)</i></p>	<p><b>Unit 5: Equal Groups Classroom Routines.</b></p>	<p><b>1.</b> Demonstrate an understanding of multiplication and division as involving groups of equal groups.</p>	<p><b>Observation:</b> Session 1.1, pp. 26-27; Session 1.2, p. 30, 33; Session 4.1, p. 118; Session 4.3, p. 127; Session 4.4, p. 131;</p> <p><b>Writing:</b> Session 1.2, p. 33 (Student Activity Book p. 3).</p> <p><b>Portfolio:</b> Session 1.2, p. 33 (M6, Pictures of Things That Come in Groups); Session 1.4, p. 41; Session 4.7, p. 142 (M44, End of Unit Assessment, problems 1A, 1B, and 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Using The LogoPaths Software</b> Students were formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit, Perimeter, Angles &amp; Area, the fourth unit in the Grade 3 sequence. We recommend that students continue to have access to the software outside of the math time in order to return to Feed the Turtle, a LogoPaths activity, and to spend time with the Free Explore option. For information about the Logo Paths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in implementing Investigations in Grade 3: Introducing &amp; Managing the LogoPaths software in Grade 3.</p>

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<p><b>3.N.5.</b> Recognize classes to which a number may belong (odd numbers, even numbers, and multiples of numbers through 10). Identify the numbers in those classes, e.g., the class of multiples of 7 between 1 and 29 consists of 7, 14, 21, 28.</p> <p><b>3.N.6.</b> Select, use, and explain various meanings and models of multiplication (through 10 X 10). Relate multiplication problems to corresponding division problems, e.g., draw a model to represent 5 X 6 and 30/6.</p> <p><b>3.N.9.</b> Know multiplication facts through 10 X 10 and related division facts, e.g., 9 X 8 = 72 and 72/9 = 8. Use these facts to solve related problems, e.g., 3 X 5 is related to 3 X 50.</p> <p><b>3.P.4.</b> Write number sentences using +, -, X, division symbol, &lt;, +, and/or &gt; to represent mathematical relationships in everyday situations.</p>	<p><b>Unit 5:</b> Equal Groups p. 49 Activity 1, p. 51 Activity 2, p. 52 Session Follow-Up, p. 54 Discussion 1, p. 56 Activity 2, p. 58 Session Follow-Up.</p> <p><b>Unit 5:</b> Equal Groups p. 31 Discussion 2, p. 36 Activity 2, p. 60 Discussion 1, p. 61 Activity 2, p. 65 Discussion 1, p. 122 Discussion 2, p. 126 Activity 1, p. 126 Activity 2.</p> <p><b>Unit 5:</b> Equal Groups p. 60 Discussion 1, p. 61 Activity 2, p. 65 Discussion 1, p. 122 Discussion 2, p. 126 Activity 1, p. 126 Activity 2, p. 139 Discussion 2.</p>	<p><b>2.</b> Solve multiplication combinations &amp; related division problems by using skip counting or known multiplication combinations.</p>	<p><b>Observation:</b> Counting Around the Class (Ten Minute Math); Session 2.1, pp. 50, 52; Session 1.4, p. 39; Session 2.2, p. 57; Session 2.3, p. 62; Session 2.4, p. 69; Session 2.5, p. 74; Session 4.1, p. 118; Session 4.2, p. 122; Session 4.5, p. 136;</p> <p><b>Writing:</b> Session 2.3, p. 61 (Student Activity Book p. 16); Session 2.5, p. 75 (Student Activity Book p. 24).</p> <p><b>Portfolio:</b> Session 2.3, p. 60 (Student Activity Book p. 14); Session 2.5, p. 71 (M13, Assessment Activity: Counting Around the Class); Session 4.2, p. 122 (Student Activity Book ; 42); Session 4.7, p. 142 (M44, End of Unit Assessment, problems 1A, 1B, and 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Using The LogoPaths Software</b> Students were formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit, Perimeter, Angles &amp; Area, the fourth unit in the Grade 3 sequence. We recommend that students continue to have access to the software outside of the math time in order to return to Feed the Turtle, a LogoPaths activity, and to spend time with the Free Explore option. For information about the Logo Paths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in implementing Investigations in Grade 3: Introducing &amp; Managing the LogoPaths software in Grade 3.</p>

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GRADE THREE INVESTIGATIONS  
Unit 5: Equal Groups



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.6.</b> Select, use, and explain various meanings and models of multiplication (through 10 X 10). Relate multiplication problems to corresponding division problems, e.g., draw a model to represent <math>5 \times 6</math> and <math>30/6</math>.</p> <p><b>3.N.7.</b> Use the commutative (order) &amp; identity properties of addition and multiplication on whole numbers in computations and problem situations, e.g., <math>3 + 4 + 7 = 3 + 7 + 4 = 10 + 4</math>.</p> <p><b>3.N.8.</b> Select and use appropriate operations (addition, subtraction, multiplication, &amp; division) to solve problems, including those involving money.</p> <p><b>3.N.9.</b> Know multiplication facts through 10 X 10 and related division facts, e.g., <math>9 \times 8 = 72</math> and <math>72/9 = 8</math>. Use these facts to solve related problems, e.g., 3 X 5 is related to 3 X 50.</p> <p><b>3.N.10.</b> Add and subtract (up to four-digit numbers) and multiply (up to two-digit numbers by a one-digit number) accurately and efficiently.</p>	<p><b>Unit 5:</b> Equal Groups p. 83 Activity 1, p. 84 Activity 2, p. 89 Activity 2, p. 98 Activity 1, p. 103 Activity 2, p. 130 Activity 1.</p> <p><b>Unit 5:</b> Equal Groups p. 132 Session Follow-Up 3 Daily Practice.</p> <p><b>Unit 5:</b> Equal Groups p. 31 Discussion 2, p. 36 Activity 2.</p>	<p><b>3.</b> Interpret and use multiplication and division notation.</p>	<p><b>Observation:</b> Session 1.1, p. 30, 33; Session 1.2, pp. 30, 33; Session 1.3, p. 37; Session 1.4, p. 39; Session 4.2, p. 122; Session 4.2, p. 122; Session 4.3, p. 127; Session 4.4, p. 131; Session 4.5, p. 136;</p> <p><b>Writing:</b> Session 4.3, p. 126 (Writing Problems for the Class Book).</p> <p><b>Portfolio:</b> Session 1.4, p. 39 (Assessment Activity: Solving Problems About Our Pictures); Session 4.7, p. 142 (M44, End of Unit Assessment, problems 1A, 1B, and 2).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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<p><b>3.P.3.</b> Determine the value of a variable (through 10) in simple equations involving addition, subtraction, or multiplication, e.g., <math>2 + \_\_ = 9</math>; <math>5 \times \_\_ = 35</math>.</p> <p><b>3.P.4.</b> Write number sentences using +, -, <math>\times</math>, division symbol, &lt;, +, and/or &gt; to represent mathematical relationships in everyday situations.</p> <p><b>3.N.7.</b> Use the commutative (order) &amp; identity properties of addition and multiplication on whole numbers in computations and problem situations, e.g., <math>3 + 4 + 7 = 3 + 7 + 4 = 10 + 4</math>.</p> <p><b>3.P.3.</b> Determine the value of a variable (through 10) in simple equations involving addition, subtraction, or multiplication, e.g., <math>2 + \_\_ = 9</math>; <math>5 \times \_\_ = 35</math>.</p> <p><b>3.P.4.</b> Write number sentences using +, -, <math>\times</math>, division symbol, &lt;, +, and/or &gt; to represent mathematical relationships in everyday situations.</p>	<p><b>Unit 5:</b> Equal Groups p. 130 Activity 1, p.131 Activity 2, p. 135 Math Workshop 2A, p. 138 Math Workshop 1A.</p> <p><b>Unit 5:</b> Equal Groups p. 31 Discussion 2, p. 129 Activity 1, p. 134 Discussion 1, p. 148 Activity 1.</p>	<p><b>4.</b> Demonstrate fluency with multiplication combinations up to 50 (by the end of Grade 3).</p>	<p><b>Observation:</b> Session 3.1, p. 85; Session 3.2, p. 90; Session 3.4, p. 99; Session 3.5, p. 105; Session 3.6, p. 109; Session 4.5, p. 136;</p> <p><b>Writing:</b> Session 3.4, p. 100 (Student Activity Book p. 33).</p> <p><b>Portfolio:</b> To be assessed in Unit 8, Operations 4.</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>



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GRADE THREE INVESTIGATIONS  
Unit 6: Stories, Tables, And Graphs



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.G.5.</b> Using ordered pairs of whole numbers and/or letters, locate and identify points on a grid.</p>		<p><b>3.</b> Create a table of values for a situation with a constant rate of change and explain the values in the table in terms of the situation.</p>	<p><b>Observation:</b> Session 3.1, p. 82; Session 3.2, p. 89; Session 3.3, p. 93; Session 3.4, p. 102; Session 3.5, p. 106.  <b>Writing:</b> Session 3.3, p. 93 (Student Activity Book pp. 54-55); Session 3.4, p. 99 (Student Activity Book pp. 60, 63).  <b>Portfolio:</b> Session 3.2, pp. 88-89 (Student Activity Book pp. 49-51); Session 3.4, p. 98 (Student Activity Book pp. 59-60); Session 3.5, p. 105 (Student Activity Book pp. 65-67); Session 3.7, pp. 113-115 (M30-36, End of Unit Assessment, problem B, Sophie's and Tom's Race).</p>	<p>Calculators            Computer Software            Online Resources              Exam View            Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 6: Stories, Tables, And Graphs



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.P.1.</b> Create, describe, extend, and explain symbolic (geometric) patterns and addition and subtraction patterns e.g., 2, 6, 10...; and 50, 45, 40...</p>	<p><b>Unit 6:</b> Stories, Tables, &amp; Graphs p. 57 Discussion 1, p. 58 Activity 2, p. 60 Discussion 3, p. 63 Activity 1, p. 64 Discussion 2, p. 65 Activity 3, p. 68 Activity 1, p. 70 Discussion 3.</p>	<p><b>4.</b> Compare related situations with a constant rate of change by interpreting the graphs, tables, and sequences that represent those situations.</p>	<p><b>Observation:</b> Session 2.1, p. 59; Session 2.2, pp. 63, 66; Session 2.3, pp. 68-69; Session 3.2, p. 89; Session 3.3, p. 93; Session 3.4, p. 102; Session 3.5, p. 106; Session 3.6, p. 110. <b>Writing:</b> Session 2.2, pp. 63-65 (Student Activity Book pp. 31-36); Session 2.3, pp. 68, 72 (Student Activity Book pp. 38-39, 41); Session 3.3, p. 93 (Student Activity Book pp. 54-55); Session 3.4, p. 99 (Student Activity Book pp. 60, 63). <b>Portfolio:</b> Session 1.5, p. 50 (M20-21, Assessment: A Summer Day in Cairo, Egypt); Session 2.3, p. 68 (Student Activity Book pp. 38-39); Session 3.2, pp. 88-89 (Student Activity Book pp. 59-60); Session 3.4, p. 98 (Student Activity Book pp. 59-60); Session 3.5, p. 105 (Student Activity Book pp. 65-67); Session 3.7, pp. 113-115 (M30-36, End of Unit Assessment, problem B, Sophie's and Tom's Race).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 7: Finding Fair Shares



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.3.</b> Identify and represent fractions (between 0 and 1 with denominators through 10) as parts of unit wholes and parts of groups. Model and represent a mixed number (with denominator 2, 3, or 4) as a whole number and a fraction, e.g., <math>1\frac{2}{3}</math>, <math>3\frac{1}{2}</math>.</p> <p><b>3.N.13.</b> Use concrete objects and visual models to add and subtract (only when the answer is greater than or equal to zero) common fractions (halves, thirds, fourths, sixths, and eighths) with like denominators. (RELATED CONTENT)</p> <p><b>3.N.3.</b> Identify and represent fractions (between 0 and 1 with denominators through 10) as parts of unit wholes and parts of groups. Model and represent a mixed number (with denominator 2, 3, or 4) as a whole number and a fraction, e.g., <math>1\frac{2}{3}</math>, <math>3\frac{1}{2}</math>.</p>	<p><b>Unit 7:</b> Finding Fair Shares p. 26 Activity 1, p. 27 Discussion 2, p. 30 Activity 1, p. 39 Activity 2, p. 48 Activity 1, p. 50 Discussion 2, p. 61 Activity 1, p. 66 Discussion 3.</p> <p>Related Content: <b>Unit 7:</b> Finding Fair Shares These Activities and Discussions p. 39 Activity 2, p. 41 Discussion 3, p. 61 Activity 1, p. 64 Activity 2, p. 66 Discussion 3, p. 72 Discussion 3, p. 75 Discussion 1.</p>	<p><b>1.</b> Divide a single whole or a quantity into equal parts, and name those parts as fractions or mixed numbers.</p> <p><b>2.</b> Identify equivalent fractions (e.g., <math>\frac{3}{6} = \frac{1}{2}</math>, and <math>\frac{1}{3} = \frac{2}{6}</math>).</p>	<p><b>Observation:</b> Session 1.1, p. 26; Session 1.2, pp. 31, 33; Session 1.3, pp. 38, 40; Session 1.4, p. 45; Session 1.5, pp. 49, 52; Session 1.6, pp. 54, 56. <b>Writing:</b> Session 1.5, p. 48 (Student Activity Book p. 11); Session 1.6, p. 54 (Student Activity Book pp. 15-16); <b>Portfolio:</b> Session 1.5, p. 51 (M12, Sharing Several Brownies); Session 1.6, p. 56 (M13, Assessment: Sharing Four Brownies); Session 3.4, p. 107 (M19, End of Unit Assessment).</p> <p><b>Observation:</b> Session 2.1, pp. 63, 65; Session 2.2, pp. 71-72; Session 2.3, p. 78; Session 2.4, p. 84; Session 3.1, pp. 92, 95; Session 3.2, pp. 100-101; <b>Writing:</b> Session 2.2, p. 73 (Student Activity Book p. 21); Session 2.3, p. 76 (Student Activity Book p. 23); Session 3.2, p. 101 (Student Activity Book p. 35); Session 3.3, p. 105 (Student Activity Book p. 39). <b>Portfolio:</b> Session 2.3, p. 77 &amp; Session 2.4, p. 85 (M17, Assessment: Many Ways to Make a Share); Session 3.2, p. 100 (Student Activity Book pp. 33-34); Session 3.4, p. 107 (M19, End of Unit Assessment).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Using The LogoPaths Software</b> Students were formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit, Perimeter, Angles &amp; Area, the fourth unit in the Grade 3 sequence. We recommend that students continue to have access to the software outside of the math time in order to return to Feed the Turtle, a LogoPaths activity, and to spend time with the Free Explore option. For information about the Logo Paths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in implementing Investigations in Grade 3: Introducing &amp; Managing the LogoPaths software in Grade 3.</p>

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GRADE THREE INVESTIGATIONS  
Unit 7: Finding Fair Shares



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.3.</b> Identify and represent fractions (between 0 and 1 with denominators through 10) as parts of unit wholes and parts of groups. Model and represent a mixed number (with denominator 2, 3, or 4) as a whole number and a fraction, e.g., <math>1\frac{2}{3}</math>, <math>3\frac{1}{2}</math>.</p> <p><b>3.G.7.</b> Predict &amp; explain the results of taking apart &amp; combining 2-dimensional shapes.</p>	<p><b>Unit 7: Finding Fair Shapes</b> p. 61 Activity 1, p.66 Discussion 3, p. 70 Activity 1, p. 71 Activity 2, p. 81 Activity 1, p. 83 Math Workshop 2.</p>	<p><b>3.</b> Find combinations of fractions that are equal to one and to other fractions (e.g., <math>\frac{3}{6} + \frac{1}{2} = 1</math>; <math>\frac{1}{6} + \frac{1}{6} = \frac{1}{3}</math>; and <math>\frac{1}{3} + \frac{1}{6} = \frac{1}{2}</math>).</p>	<p><b>Observation:</b> Session 2.1, pp. 63, 65; Session 2.2, pp. 71-72; Session 2.3, p. 78; Session 2.4, p. 84;</p> <p><b>Writing:</b> Session 2.2, p. 73 (Student Activity Book p. 21); Session 2.3, p. 76 (Student Activity Book p. 23).</p> <p><b>Portfolio:</b> Session 2.3, p. 77 and Session 2.4, p. 85 (M17, Assessment: Many Ways to Make a Share); Session 3.2, p. 100 (Student Activity Book pp. 33-34); Session 3.4, p. 107 (M19, End of Unit Assessment).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Using The LogoPaths Software</b> Students were formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit, Perimeter, Angles &amp; Area, the fourth unit in the Grade 3 sequence. We recommend that students continue to have access to the software outside of the math time in order to return to Feed the Turtle, a LogoPaths activity, and to spend time with the Free Explore option. For information about the Logo Paths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in implementing Investigations in Grade 3: Introducing &amp; Managing the LogoPaths software in Grade 3.</p>

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GRADE THREE INVESTIGATIONS  
Unit 8: How Many Hundreds? How Many Miles?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.N.10.</b> Add and subtract (up to four-digit numbers) and multiply (up to two-digit numbers by a one-digit number) accurately and efficiently.</p> <p><b>3.N.10.</b> Add and subtract (up to four-digit numbers) and multiply (up to two-digit numbers by a one-digit number) accurately and efficiently.</p> <p><b>3.N.10.</b> Add and subtract (up to four-digit numbers) and multiply (up to two-digit numbers by a one-digit number) accurately and efficiently.</p>	<p><b>Unit 8:</b> How Many hundreds? How Many Miles? p. 31 Activity 2, p. 37, Activity 1, p. 56 Discussion 1, p. 75 Activity 2, p. 77 Discussion 3, p. 80 Activity 1.</p>	<p><b>1.</b> Add multiples of 10 and 100 (up to 1,000) to and subtract them from any 3-digit number.</p> <p><b>2.</b> Solve 3-digit addition problems using at least one strategy efficiently.</p> <p><b>3.</b> Demonstrate fluency with subtraction problems related to the addition combinations to 10 + 10 (the subtraction facts).</p>	<p><b>Observation:</b> Session 1.1, pp. 30, 34; Session 1.2, p. 39; Session 1.3, pp. 44-45; Session 1.5, p. 59.</p> <p><b>Writing:</b> Session 1.3, p. 44 (Student Activity Book p. 11).</p> <p><b>Portfolio:</b> Session 1.5, p. 58 (M23, Assessment: Problems About Capture from 300 to 600);</p> <p><b>Observation:</b> Session 2.1, p. 68; Session 2.2, p. 76; Session 2.3, p. 80; Session 2.4, pp. 87-88, 90; Session 3.7, pp. 139-140.</p> <p><b>Writing:</b> Session 2.5, p. 95 (Student Activity Book p. 37); Session 3.7, p. 139 (Student Activity Book p. 61); Session 3.7, p. 141 (Student Activity Bk pp. 65-66).</p> <p><b>Portfolio:</b> Session 2.5, p. 94 (M40, Assessment: Addition Strategies); Session 3.9, p. 147 (M54-55, End of Unit Assessment, problem 1).</p> <p><b>Observation:</b> Session 3.2, p. 115 (Homework); Session 3.3, p. 122 (Homework); Session 3.4, pp. 126-127;</p> <p><b>Writing:</b> Session 3.3, p. 117 (Student Activity Book p. 45); Session 3.4, p. 127 (Student Activity Book p. 52);</p> <p><b>Portfolio:</b> Session 3.4, p. 126 (M53, Assessment: Subtraction Facts);</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Using The LogoPaths Software</b> Students were formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit, Perimeter, Angles &amp; Area, the fourth unit in the Grade 3 sequence. We recommend that students continue to have access to the software outside of the math time in order to return to Feed the Turtle, a LogoPaths activity, and to spend time with the Free Explore option. For information about the Logo Paths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in implementing Investigations in Grade 3: Introducing &amp; Managing the LogoPaths software in Grade 3.</p>

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GRADE THREE INVESTIGATIONS  
Unit 8: How Many Hundreds? How Many Miles?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.P.2.</b> Determine which symbol (&lt;, &gt;, or =) is appropriate for a given number sentence, e.g., <math>7 \times 8</math> .?. <math>49 + 6</math>.</p> <p><b>3.N.9.</b> Know multiplication facts through <math>10 \times 10</math> and related division facts, e.g., <math>9 \times 8 = 72</math> and <math>72/9 = 8</math>. Use these facts to solve related problems, e.g., <math>3 \times 5</math> is related to <math>3 \times 50</math>.</p>	<p><b>Unit 8:</b> How Many Hundreds? How Many Miles? P. 103 Activity 1, p. 104 Activity 2, p. 106 Discussion 3.</p>	<p><b>4.</b> Solve subtraction problems with 3-digit numbers using strategies that involve either subtracting a number in parts, adding up, or subtracting back.</p> <p><b>5.</b> Demonstrate fluency with multiplication combinations with products up to 50 (final review).</p>	<p><b>Observation:</b> Session 3.1, p. 105; Session 3.2, p. 111; Session 3.3, p. 117, 122; Session 3.4, pp. 126-127; Session <b>3.6, p. 133</b>; <b>Writing:</b> Session 3.3, p. 117 (Student Activity Book p. 45); Session 3.4, p. 127 (Student Activity Book p. 52); <b>Portfolio:</b> Session 3.3, p. 121 (M52, Assessment: Subtraction Strategies, problem 2); Session 3.9, p. 147 (M54-55, End of Unit Assessment, problems 2 and 3).</p> <p><b>Observation:</b> Session 1.2, p. 39 (Homework); <b>Writing:</b> <b>Portfolio:</b> Session 1.4, p. 53 (M21, Assessment: Multiplication Combinations).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p>

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GRADE THREE INVESTIGATIONS  
Unit 9: Solids And Boxes



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>3.G.2.</b> Describe, model, draw, compare, &amp; classify 2-dimensional shapes, e.g., circles, triangles, and quadrilaterals. Identify &amp; describe simple 3-dimensional shapes, e.g., cubes, spheres, and pyramids.</p>	<p><b>Unit 9:</b> Solids and Boxes p. 23 Activity 1, p. 25 Discussion 2, p. 44 Discussion 2.</p>	<p><b>1.</b> Identify and compare attributes of 3-dimensional solids.</p> <p><b>2.</b> Determine the number of cubes (volume) that will fit in the box made by a given pattern.</p>	<p><b>Observation:</b> Session 1.1, p. 24; Session 1.2, p. 24; Session 1.3, p. 33; Session 1.4, p. 39; Session 1.5, p. 43; Session 2.2, p. 58; Session 2.3, p. 63.  <b>Writing:</b> Session 1.2, p. 31 (Student Activity Book p. 7); Session 1.5, p. 46 (M14, What's My Shape?).  <b>Portfolio:</b> Session 1.4, p. 39 (M12, Assessment Checklist: building Polyhedra from Descriptions); Session 3.5, pp. 92-93 (M36-40, End of Unit Assessment, problems 1A, 1B).</p> <p><b>Observation:</b> Session 2.1, pp. 51, 54; Session 3.1, pp. 70, 71; Session 3.3, pp. 82, 84; Session 3.5, p. 93.  <b>Writing:</b> Session 3.5, pp. 92-93 (M36, 38, End of Unit Assessment).  <b>Portfolio:</b> Session 3.3, pp. 81-82 (M29-31, Assessment: Making Boxes from the Bottom Up); Session 3.3, p. 83 (M32, Assessment: Writing About How Many Cubes); Session 3.5, pp. 92-93 (M36-40, End of Unit Assessment, problems 2A, 2B).</p>	<p>Calculators Computer Software Online Resources</p> <p>Exam View Success Net</p> <p><b>Using The LogoPaths Software</b> Students were formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit, Perimeter, Angles &amp; Area, the fourth unit in the Grade 3 sequence. We recommend that students continue to have access to the software outside of the math time in order to return to Feed the Turtle, a LogoPaths activity, and to spend time with the Free Explore option. For information about the Logo Paths software and directions for Feed the Turtle, refer to the Software Support Reference Guide found on the CD. See Part 5: Technology in Investigations: Calculators and Computers in implementing Investigations in Grade 3: Introducing &amp; Managing the LogoPaths software in Grade 3.</p>

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GRADE THREE INVESTIGATIONS  
Unit 9: Solids And Boxes



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
		<p><b>3.</b> Design patterns for boxes that will hold a given number of cubes.</p>	<p><b>Observation:</b> Session 3.2, p. 77; Session 3.4, pp. 87, 89; Session 3.5, p. 93.  <b>Writing:</b> Session 3.2, p. 79 (Student Activity Book p. 25); Session 3.4, p. 90 (Student Activity Book p. 31); Session 3.5, pp. 92-93 (M36, 38, End of Unit Assessment).  <b>Portfolio:</b> Session 3.3, p. 83 (M32, Assessment: Writing About How Many Cubes); Session 3.4, p. 87 (Student Activity Book p. 29); Session 3.5, pp. 92-93 (M36-40, End of Unit Assessment, problems 3A, 3B).</p>	<p>Calculators            Computer Software            Online Resources</p> <p>Exam View            Success Net</p>

Agawam Public Schools  
Massachusetts Learning  
Standards

GRADE FOUR INVESTIGATIONS  
UNIT 1: FACTORS, MULTIPLES, AND ARRAYS

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.7.</b> Recognize classes (in particular, odds, evens; factors or multiples of a given number) may belong, and identify the numbers in those classes. Use these in the solution of problems.</p> <p><b>4.N.11</b> Know multiplication facts through 12 x 12 and related division facts. Use these facts to solve related multiplication problems, e.g., 3 x 5 is related to 30 x 50, 300 X 5, AND 30 X 500.</p> <p><b>4.P.3.</b> Determine the values of variables in simple equations, e.g., 4106 - ▲ = 37; 5 = ● + 3 and ■ - ● = 3.</p>	<p><b>Unit 1:</b> Factors, Multiples, and Arrays p. 40 Discussion, 3, p. 69 Activity 1, p. 77 Discussion 1, p. 78 Math Workshop 2, p. 90 Activity 2, p. 92 Discussion 3, p. 93 Activity 4, p. 97 Discussion 1</p> <p><b>Unit 1:</b> Factors, Multiples, and Arrays p. 33 Activity 1, p. 34 Activity 2, p. 40 Discussion 3, p. 43 Activity 1, p. 44 Activity 2</p> <p><b>Unit 1:</b> Factors, Multiples, and Arrays p. 67 Session Follow-Up 2, p. 83 Session Follow-Up 3, p. 95 Session Follow-Up 5, p. 111 Session Follow-Up 3</p>	<p>1. Use known multiplication combinations to find the product of any multiplication combination up to 12 x 12.</p> <p>2. Use arrays, pictures, or models of groups, and story contexts to represent multiplication situations.</p> <p>3. Find the factors of 2-digit numbers.</p>	<p><b>Observation:</b> Session 1.4, p. 45; Session 1.5, p. 49-50; Session 2.2, p. 66. <b>Writing:</b> Session 1.5, p. 48-49 (Student Activity Book pp.11-12); Session 3.4, p.113 (End of Unit Assessment, problem 1A). <b>Portfolio:</b> Session 1.1, p. 28 (Student Activity Book p. 12); Session 2.5, p. 80 (M51, Assessment: Multiplication Combinations).</p> <p><b>Observation:</b> Session 1.2, p. 36. <b>Writing:</b> Session 1.5, p. 48-49; Session 3.4, p. 113 (End of Unit Assessment, problems 1B and 1C). <b>Portfolio:</b> Session 1.1, p. 28 (Student Activity Book p. 2); Session 1.5, pp. 49-50 (Student Activity Book p. 12).</p> <p><b>Observation:</b> Session 1.2, p. 36; Session. 1.3, p. 38; Session 3.3, p. 107. <b>Writing:</b> Session 3.3 pp. 107-111; Session 3.4, p. 113 (End of Unit Assessment, problem 2). <b>Portfolio:</b> Session 3.2, p. 98 (Student Activity Book pp. 33-34); Session 3.4, p. 113 (M55-M56, End of Unit Assessment).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Getting Started with LogoPaths Software.</b> Students are formally introduced to the <i>LogoPaths</i> software in the 2-D Geometry and Measurement unit <i>Size, Shape, and Symmetry</i>, the fourth unit in the Grade 4 sequence. However, if you plan to use the software this year, we recommend that students have access to the software <b>outside of math time</b> starting with this unit in order to return to <i>Feed the Turtle</i>, a <i>LogoPaths</i> activity from Grade 3, and to spend time with the <i>Free Explore</i> option. For information about the <i>LogoPaths</i> software and directions for <i>Feed the Turtle</i>, refer to the <i>Software Support Reference Guide</i> found on the CD. See <b>Part 5: Technology in Investigations: Calculators and Computers in Implementing Investigations in Grade 4: Introducing and Managing the LogoPaths software in Grade 4.</b></p>

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GRADE FOUR INVESTIGATIONS  
UNIT 2: DATA ANALYSIS AND PROBABILITY



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.D.1.</b> Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.</p> <p><b>4.D.1.</b> Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.</p> <p><b>4.D.3.</b> Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, circle graphs, pictographs, line graphs, line plots, and tallies.</p> <p><b>4.M.1.</b> Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.</p> <p><b>4.M.5.</b> Identify and use appropriate metric and English units and tools (e.g., ruler, angle ruler, graduated cylinder, thermometer) to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.</p>	<p><b>Unit 2:</b> Describing the Shape of the Data p. 25 Activity 2, p. 28 Discussion 3, p. 31 Activity 1, p. 33 Discussion 2, p. 37 Activity 1, p. 38 Activity 2, p. 38 Assessment Activity 1</p> <p><b>Unit 2:</b> Describing the Shape of the Data p. 28 Discussion 3, p. 33 Discussion 2, p. 42 Activity 1, p. 43 Discussion 2, p. 72 Activity 1, p. 74 Discussion 2, p. 76 Discussion 1</p> <p><b>Unit 2:</b> Describing the Shape of the Data p. 31 Activity 1</p> <p><b>Unit 2:</b> Describing the Shape of the Data p. 31 Activity 1</p>	<p>1. Design an effective survey question to compare two groups.</p> <p>2. Organize and represent data about two groups in order to compare the groups.</p> <p>3. Describe the shape of the data from a numerical data set, including where the data are concentrated and the highest, lowest, and median values.</p>	<p><b>Observation:</b> Session 2.1, p. 60; Session 2.2, pp. 64-66. <b>Writing:</b> Session 2.1, p. 59 (Student Activity Book pp. 10-12). <b>Portfolio:</b></p> <p><b>Observation:</b> Session 1.3, p. 38, 40; Session 2.2, pp. 64; Session 2.3, p. 70. <b>Writing:</b> <b>Portfolio:</b> Session 2.2, p. 62 (M10, Assessment: Collection and Comparing Data)</p> <p><b>Observation:</b> Session 1.1, p. 27; Session 1.2, p. 33; Session 1.4, p. 42; Session 1.5, p. 48; Session 2.5, p. 78; Session 2.6, p. 85 <b>Writing:</b> Session 1.4, p. 42 (Student Activity Book p. 7). <b>Portfolio:</b> Session 1.5, p. 49 (M7-M8, Assessment: Comparing Number of Cavities); Session 3.5, pp. 118-119 (M18-M21, End of Assessment, Problem 2A).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Getting Started with LogoPaths Software.</b> Students are formally introduced to the <i>LogoPaths</i> software in the 2-D Geometry and Measurement unit <i>Size, Shape, and Symmetry</i>, the fourth unit in the Grade 4 sequence. However, if you plan to use the software this year, we recommend that students have access to the software <b>outside of math time</b> starting with this unit in order to return to <i>Feed the Turtle</i>, a <i>LogoPaths</i> activity from Grade 3, and to spend time with the <i>Free Explore</i> option. For information about the <i>LogoPaths</i> software and directions for <i>Feed the Turtle</i>, refer to the <i>Software Support Reference Guide</i> found on the CD. See <b>Part 5: Technology in Investigations: Calculators and Computers in Implementing Investigations in Grade 4: Introducing and Managing the LogoPaths software in Grade 4.</b></p>

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GRADE FOUR INVESTIGATIONS  
UNIT 2: DATA ANALYSIS AND PROBABILITY



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.D.1.</b> Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.</p> <p><b>4.D.2.</b> Match a representation of a data set with the actual set of data. <i>(activities in unit prepare students for this learning standard)</i></p> <p><b>4.D.3.</b> Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, circle graphs, pictographs, line graphs, line plots, and tallies.</p> <p><b>4.D.3.</b> Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, circle graphs, pictographs, line graphs, line plots, and tallies.</p>	<p><b>Unit 2:</b> Describing the Shape of the Data p. 76 Discussion 1, p. 77 Activity 2</p>	<p><b>3.</b> Describe the shape of the data from a numerical data set, including where the data are concentrated and the highest, lowest, and median values.</p> <p><b>4.</b> Use data to compare two groups.</p>	<p><b>Observation:</b> Session 1.1, p. 27; Session 1.2, p. 33; Session 1.4, p. 42; Session 1.5, p. 48; Session 2.5, p. 78; Session 2.6, p. 85 <b>Writing:</b> Session 1.4, p. 42 (Student Activity Book p. 7). <b>Portfolio:</b> Session 1.5, p. 49 (M7-M8, Assessment: Comparing Number of Cavities); Session 3.5, pp. 118-119 (M18-M21, End of Assessment, Problem 2A).</p> <p><b>Observation:</b> Session 1.4, p. 42; Session 2.2, pp. 65-66; Session 2.4, p. 73; Session 2.6, p.85. <b>Writing:</b> Session 2.4, p. 72 (Student Activity Book p. 20). <b>Portfolio:</b> Session 1.5, p. 49 (M7-M8, Assessment: Comparing Numbers of Cavities); Session 3.5, pp. 118-119 (M18-M21, End of Assessment, Problems 2B, 2C, and 2D).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 2: DATA ANALYSIS AND PROBABILITY



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.D.3.</b> Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, circle graphs, pictographs, line graphs, line plots, and tallies.</p> <p><b>4.D.4.</b> Represent the possible outcomes of a probability situation, e.g., the probability of drawing a red marble from a bag containing three red marbles and four green marbles.</p> <p><b>4.D.5.</b> List and count the number of possible combinations of objects from three sets, e.g., how many different outfits can one make from a set of three shirts, a set of two skirts, and a set of two hats? (<i>activities in unit prepare students for this learning standard</i>)</p> <p><b>4.D.6.</b> Classify outcomes as certain, likely, unlikely, or impossible by designing and conducting experiments using concrete objects such as counters number cubes, spinners, or coins.</p>	<p><b>Unit 2:</b> Describing the Shape of the Data p. 108 Discussion 1</p> <p>This activity prepares students for learning standard. <b>Unit 2:</b> Describing the Shape of the Data p. 114 Activity 1</p> <p><b>Unit 2:</b> Describing the Shape of the Data p. 95 Activity 1, p. 97 Activity 2, p. 99 Discussion 3, p. 100 Session Follow-Up 4, p. 102 Discussion 1, p. 102 Activity 2, p. 105 Activity 3, p. 108 Discussion 1</p>	<p><b>5.</b> Use evidence from a set of data to support an argument.</p> <p><b>6.</b> Describe the likelihood of an event in terms of a scale from impossible (probability of 0) to certain (probability of 1).</p>	<p><b>Observation:</b> Session 2.4, p. 73; Session 2.5, p. 78; Session 2.7, p. 88. <b>Writing:</b> Session 2.5, p. 76 (Student Activity Book pp. 25-27). <b>Portfolio:</b> Session 3.5, pp. 118-119 (M18-M21, End of Assessment, Problems 2B, 2C, and 2D).</p> <p><b>Observation:</b> Session 3.1, p. 99; Session 3.2, p. 105; Session 3.3, p. 111; Session 3.4, p. 115. <b>Writing:</b> Session 3.2, p. 105 (Student Activity Book pp. 43-44). <b>Portfolio:</b> Session 3.5, pp. 118-119 (M18-M21, End of Assessment, Problems 1A, 1B, and 1C).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 3: MULTIPLE TOWERS AND DIVISION STORIES



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.8.</b> Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.</p> <p><b>4.N.9.</b> Select, use, and explain the commutative, associative, and identity properties of operations on whole numbers in problem situations, e.g., <math>37 \times 46 = 37 \times 46 = 46 \times 37</math>, <math>(5 \times 7) \times 2 = 5 \times (7 \times 2)</math>.</p> <p><b>4.N.12.</b> Add and subtract (up to five-digit numbers) and multiply (up to three digits by two digits) accurately and efficiently.</p> <p><b>4.P.3.</b> Determine the values of variables in simple equations, e.g., <math>4106 - \blacktriangle = 37</math>; <math>5 = \bullet + 3</math> and <math>\blacksquare - \bullet = 3</math>.</p>	<p><b>Unit 3:</b> Multiple Towers and Division Stories p. 43, Activity 1, p. 47 Math Workshop 1, p. 49 Discussion 2, p. 61 Discussion 1, p. 63 Activity 2, p. 73 Discussion 1. p. 85 Activity 1, p. 89 Discussion 1</p> <p><b>Unit 3:</b> Multiple Towers and Division Stories p. 35 Activity 1, p. 44 Activity 2</p> <p><b>Unit 3:</b> Multiple Towers and Division Stories p. 112 Discussion 1, p. 113 Math Workshop 2, p. 130 Activity 1, p. 131 Activity 2, p. 140 Math Workshop 2</p> <p><b>Unit 3:</b> Multiple Towers and Division Stories p. 45 Session Follow-Up 3, p. 78 Activity 1, p. 87 Session Follow-Up 3, p. 135 Session Follow-Up 4.</p>	<p>1. Multiply 2-digit numbers by 1-digit and small 2-digit numbers (e.g., 12, 15, 20), using strategies that involve breaking the numbers apart.</p>	<p><b>Observation:</b> Session 1.1, p. 30, 32-33; Session 1.2, p. 38; Session 1.3, p. 44; Session 1.4, pp. 48-49; Session 1.5, p.51; Session 3.2, p. 108; Session 4.2, pp. 131-132;</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 1.4, p. 48 (Student Activity Book pp. 12-13); Session 1.5, p. 52 (M43, Assessment: Solving <math>18 \times 7</math>); Session 4.2, p. 131 (Student Activity Book pp. 57-58); Session 4.5, p. 149 (M51-M52, End of Unit Assessment problems 1 and 2).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Getting Started with LogoPaths Software.</b> Students are formally introduced to the LogoPaths software in the 2-D Geometry and Measurement unit Size, Shape, and Symmetry, the fourth unit in the Grade 4 sequence. However, if you plan to use the software this year, we recommend that students have access to the software <b>outside of math time</b> starting with this unit in order to return to Feed the Turtle, a LogoPaths activity from Grade 3, and to spend time with the <i>Free Explore</i> option. For information about the LogoPaths software and directions for Feed the Turtle, refer to the <i>Software Support Reference Guide</i> found on the CD. See <b>Part 5: Technology in Investigations: Calculators and Computers</b> in Implementing Investigations in Grade 4: Introducing and Managing the LogoPaths software in Grade 4.</p>

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GRADE FOUR INVESTIGATIONS  
UNIT 3: MULTIPLE TOWERS AND DIVISION STORIES



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space/ Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.8.</b> Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.</p> <p><b>4.N.10.</b> Select and use an appropriate operation(s) (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p> <p><b>4.N.13.</b> Divide up to a three-digit whole number with a single-digit divisor (with or without remainders) accurately and efficiently. Interpret any remainders.</p>	<p><b>Unit 3:</b> Multiple Towers and Division Stories p. 73 Discussion 1, p. 74 Math Workshop 2, p. 113 Math Workshop 2</p> <p><b>Unit 3:</b> Multiple Towers and Division Stories p. 61 Discussion 1, p. 63 Activity 2, p. 66 Discussion 1, p. 68 Activity 2, p. 73 Discussion 1, p. 74 Math Workshop 2, p. 78 Activity 1, p. 79 Math Workshop 2</p>	<p><b>2.</b> Solve division problems (2-digit and small 3-digit numbers divided by 1-digit numbers), including some that result in a remainder.</p>	<p><b>Observation:</b> Session 2.3, pp. 74-75, Session 2.5, p. 86;  <b>Writing:</b> Session 2.3, p. 76 (Student Activity Book p. 28);  <b>Portfolio:</b> Sessions 2.3 and 2.4, pp. 74, 81 (Student Activity Book pp. 25-26); Session 4.5, p. 149 (M51-52, End of Unit Assessment problem 3).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 3: MULTIPLE TOWERS AND DIVISION STORIES



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.8.</b> Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.</p> <p><b>4.N.11.</b> Know multiplication facts through 12 x 12 and related division facts. Use these facts to solve related multiplication problems, e.g., 3 x 5 is related to 30 x 50, 300 X 5, AND 30 X 500.</p> <p><b>4.N.15.</b> Demonstrate in the classroom an understanding of and the ability to use the conventional algorithm for division of up to a three-digit whole number with a single-digit divisor (with or without remainders).</p> <p><b>4.P.3.</b> Determine the values of variables in simple equations, e.g., 4106 - ▲ = 37; 5 = ● + 3 and ■ - ● = 3.</p>	<p><b>Unit 3:</b> Multiple Towers and Division Stories p. 78 Activity 1, p. 79 Math Workshop 2, p. 81 Discussion 3</p> <p><b>Unit 3:</b> Multiple Towers and Division Stories p. 66 Discussion 1, p. 68 Activity 2, p. 73 Discussion 1, p. 81 Discussion 3, p. 83 Session Follow-Up 4</p>	<p><b>3.</b> Use story problems, pictures, or concrete models to represent division situations.</p>	<p><b>Observation:</b> Session 2.1, p. 63, Session 2.2, p. 70; Session 2.4, pp. 80-81; Session 2.5, p. 86; <b>Writing:</b> Session 2.6, p. 91 (M46, Assessment: Writing and Solving a Division Problem) <b>Portfolio:</b> Session 2.6, p. 91 (M46, Assessment: Writing and Solving a Division Problem); Session 4.5, p. 149 (M51-52, End of Unit Assessment problem 3).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 3: MULTIPLE TOWERS AND DIVISION STORIES



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.12.</b> Add and subtract (up to five-digit numbers) and multiply (up to three digits by two digits) accurately and efficiently.</p> <p><b>4.P.1.</b> Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000.</p> <p><b>4.N.11.</b> Know multiplication facts through 12 x 12 and related division facts. Use these facts to solve related multiplication problems, e.g., 3 x 5 is related to 30 x 50, 300 X 5, AND 30 X 500.</p>	<p><b>Unit 3:</b> Multiple Towers and Division Stories p. 97 Discussion 1, p. 106 Activity 1, p. 107 Math Workshop 2, p. 119 Discussion 3</p>	<p><b>4.</b> Multiply by 10 and multiples of 10.</p> <p><b>5.</b> Demonstrate fluency with multiplication combinations up to 12 x 12.</p>	<p><b>Observation:</b> Session 3.1, p. 103; Session 3.2, p. 108; Session 3.3, p. 113.  <b>Writing:</b> Session 3.1, p. 104 (Student Activity Book p. 39); Session 3.2, p. 110 (Student Activity Book p. 46); Session 3.3, p. 113 (Student Activity Book p. 47)  <b>Portfolio:</b> Session 3.1, p. 103 (Student, Activity Book pp. 37-38 and M48-49, About Our Multiple Tower); Session 3.2, pp. 108-109 (Student Activity Book pp. 42-43).</p> <p><b>Observation:</b> Session 2.4, pp. 80-81; Session 2.5, p. 86; Session 3.4, p. 118. Session 4.1, p. 127.  <b>Writing:</b> Session 2.4, p. 83 (Student Activity Book p. 31); Session 4.1, pp. 126-127 (Student Activity Book pp. pp. 51-54).  <b>Portfolio:</b> Session 3.4, p. 117 (M50, Assessment: Multiplication Combinations).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 4: SIZE, SHAPE, AND SYMMETRY



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p>4.M.1. Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.</p> <p>4.M.2. Carry out simple unit conversions within a system of measurement, e.g., hours to minutes, cents to dollars, yards to feet or inches, etc.</p> <p>4.M.4. Estimate and find the area and perimeter of a rectangle, triangle, or irregular shape using diagrams, models, and grids or by measuring. digits by two digits) accurately and efficiently.</p> <p>4.M.5. Identify and use appropriate metric and English units and tools (e.g., ruler, angle ruler, graduated cylinder, thermometer) to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.</p>	<p><b>Unit 4:</b> Size, Shape, and Symmetry p. 23 Activity 1, p. 24 Activity 2, p. 27 Discussion 3, p. 29 Activity 1, p. 30 Activity 2, p. 32 Session Follow-Up 4, p. 42 Math Workshop 1</p> <p>These activities prepare students for this learning standard.</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 23 Activity 1, p. 29 Activity 1, p. 30 Activity 30</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 23 Activity 1, p. 27 Discussion e3, p. 27 Session Follow-Up 4, p. 29 Activity 1, p. 30 Activity 2, p. 32 Session Follow-Up 4, p. 42 Math Workshop 1</p>	<p>1. Use appropriate measurement tools to measure distance.</p>	<p><b>Observation:</b> Session 1.1, p. 24, 26; Session 1.2 pp. 30-31; Session 1.3, pp. 38, 40; Session 1.4, pp. 43-44. <b>Writing:</b> Session 1.3, p. 37 (Student Activity Book p. 8); Session 1.4, pp. 43-44, 46 (Student Activity Book pp. 11-13). <b>Portfolio:</b> Session 1.3, pp. 38-39 (M13, Assessment: How Long is Our Classroom?).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Introducing the Software</b> The <i>LogoPaths</i> software is introduced to students in this unit. If you are planning to use the software, you will need to familiarize yourself with it. For information about the <i>LogoPaths</i> Software, refer to the <i>Software Support Reference Guide</i> found on the CD. To prepare to integrate this work into your classroom and to manage the computer environment see <b>Teacher Note:</b> Using the <i>LogoPaths</i> software, page 151 and <b>Teacher Note:</b> About the <i>LogoPaths</i> software, page 153, for further support and information.</p>

Agawam Public Schools  
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GRADE FOUR INVESTIGATIONS  
UNIT 4: SIZE, SHAPE, AND SYMMETRY



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.G.1.</b> Compare and analyze attributes and other features (e.g., number of sides, faces, corners, right angles, diagonals, and symmetry) of two- and three-dimensional geometric shapes.</p> <p><b>4.G.2.</b> Describe, model, draw, compare, and classify two- and three-dimensional shapes, e.g., circles, polygons - especially triangles and quadrilaterals - cubes, spheres, and pyramids.</p> <p><b>4.G.3.</b> Recognize similar figures (work in unit 4 prepares students for this standard).</p> <p><b>4.G.5.</b> Describe and draw intersecting, parallel, and perpendicular lines.</p> <p><b>4.G.9.</b> Predict and validate the results of partitioning, folding, and combining two- and three-dimensional shapes.</p>	<p><b>Unit 4:</b> Size, Shape, and Symmetry p. 55 Activity 1, p. 56 Discussion 2, p. 75 Activity 1, p. 76 Math Workshop 2, p. 77 Discussion 3, p. 79 Session Follow-Up 4, p. 81 Discussion 1, p. 82 Assessment Activity 2</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 58 Activity 3, p. 61 Activity 1, p. 63 Activity 32, p. 64 Activity 3</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 69 Math Workshop, p. 75 Activity 1 p. 76 Math Workshop 2, p. 77 Discussion 3, p. 79 Session Follow-Up 4.</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 69 Math Workshop 3, p. 76 Math Workshop 2, p. 77 Discussion 3, p. 81 Discussion 1, p. 82 Assessment Activity 2</p>	<p><b>2.</b> Identify quadrilaterals as any four-sided figure.</p>	<p><b>Observation:</b> Session 2.1, pp. 56, 59: Session 2.2, p. 63; Session 2.3, pp. 71-73; Session 2.5, pp. 76-77; Session 2.5, p. 82.</p> <p><b>Writing:</b> Session 2.4, pp. 75-76 (Student Activity Book p. 29).</p> <p><b>Portfolio:</b> Session 2.5, p. 82 (M21, Assessment: What is a Quadrilateral?); Session 4.7, pp. 147-148 (M27-28, End of Unit Assessment, problem 1).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 4: SIZE, SHAPE, AND SYMMETRY



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.G.4.</b> Identify angles as acute, right, or obtuse.</p> <p><b>4.G.7.</b> Describe and apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent.</p> <p><b>4.G.8.</b> Identify and describe line symmetry two-dimensional shapes.</p> <p><b>4.G.9.</b> Predict and validate the results of partitioning, folding, and combining two- and three-dimensional shapes.</p> <p><b>4.M.4.</b> Estimate and find area and perimeter of a rectangle, triangle, or irregular shape using diagrams, models, and grids or by measuring.</p>	<p><b>Unit 4:</b> Size, Shape &amp; Symmetry p. 89 Activity 1, p. 90 Activity 2, p. 92 Discussion 3, p. 93 Session Follow-Up 4, p. 95 Activity 1, p. 96 Math Workshop 2, p. 99 Discussion 3, p.106 Discussion 3</p> <p>This activity prepares students for this learning standard.</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 113 Activity 1</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 113 Activity 1, p. 114 Discussion 2, p. 115 Session Follow-Up 4, p. 122 Activity 1</p> <p><b>Unit 4:</b> Size, Shape, and Symmetry p. 61 Activity 1, p. 63 Activity 2, p. 117 Discussion 1, p. 122 Activity 1, p. 125 Math Workshop 3, p. 128 Activity1, p. 131 Math Workshop 2, p. 133 Discussion 3</p> <p><b>Unit 4</b> Size, Shape, and Symmetry p. 34 Discussion 1, p. 35 Activity 2, p. 37 Math Workshop 3, p. 42 Math Workshop 1, p. 48 Math Workshop 1, p. 48 Discussion 2, p. 49 Session Follow-Up 3, p. 114 Activity 3</p>	<p><b>3.</b> Know that a right angle measures 90 degrees, and use this as a landmark to find angles of 30, 45, and 60 degrees.</p> <p><b>4.</b> Find the area of polygons using a square unit of measure.</p>	<p><b>Observation:</b> Session 3.1, p. 91 Session 3.2, pp. 96-97, 99; Session 3.3, pp. 105-106; <b>Writing:</b> Session 3.2, pp. 96-97 (Student Activity Book pp. 41-43). <b>Portfolio:</b> Session 3.2, pp. 96-97 (Student Activity Book pp. 41-43); Session 4.7, pp. 147-148 (M27-28, End of Unit Assessment, problem 1).</p> <p><b>Observation:</b> Session 4.1, pp. 114-115; Session 4.2, pp. 118-119; Session 4.4, p. 132; Session 4.5, p. 139, Session 4.6, p. 143; Session 4.7, p. 147. <b>Writing:</b> Session 4.1, p. 115 (Student Activity Book p. 52); Sessions 4.4 and 4.5, pp. 132, 139 (Student Activity Book pp. 63-64); Session 4.5, p. 134 (Student Activity Book p. 66); Session 4.5; p. 138 (Student Activity Book pp. 67-68). <b>Portfolio:</b> Session 4.6, pp. 142-143 (Student Activity Book pp. 70-72); Session 4.7, pp. 147-148 (M27-M28, End of Unit Assessment, problem 2).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 5: LANDMARKS AND LARGE NUMBERS

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.1.</b> Exhibit an understanding of the base ten number system by reading, modeling, writing, and interpreting whole numbers to at least 100,000; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers.</p> <p><b>4.N.2.</b> Represent, order, and compare large numbers (to at least 100,000) using various forms, including expanded notation, e.g., <math>853 = 8 \times 100 + 5 \times 10 + 3</math>.</p> <p><b>4.N.1.</b> Exhibit an understanding of the base ten number system by reading, modeling, writing, and interpreting whole numbers to at least 100,000; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers.</p>	<p><b>Unit 5:</b> Landmarks and Large Numbers p. 29 Activity 1, p. 30 Activity 2, p. 34 Discussion 1, p. 35 Activity 2, p. 101 Discussion 1, p. 102 Activity 2, p. 108 Activity 2, p. 110 Discussion 3</p> <p><b>Unit 5:</b> Landmarks and Large Numbers p. 30 Activity 2, p. 34 Discussion 1, p. 35 Activity 2, p. 101 Discussion 1, p. 102 Activity 2, p. 108 Activity 2, p. 113 Discussion 1</p>	<p><b>1.</b> Read, write, and sequence numbers up to 10,000.</p> <p><b>2.</b> Add and subtract multiples of 10 (including multiples of 100 and 1,000) fluently.</p>	<p><b>Observation:</b> Session 1.1, p. 31; Session 1.2, p. 35; Session 3.1, p. 106; Session 3.2, p. 109; Session 3.3, pp. 115-116.</p> <p><b>Writing:</b> Session 1.2, p. 35 (Student Activity Book p. 2); Session 3.2, p. 108 (Student Activity Book p. 39).</p> <p><b>Portfolio:</b> Session 1.5, pp. 52-53 (M19, Assessment: Numbers to 1000); Session 1.6, p. 55-56; Session 4.3, p. 147 (M27 Assessment: Numbers to 10,000).</p> <p><b>Observation:</b> Session 1.3, p. 42; Session 1.4, pp. 49-50; Session 1.5, p. 54; Session 1.6, p. 56; Session 3.3, pp. 115-116; Session 3.4, p. 120.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 1.4, p. 48 (Student Activity Book p. 9); Session 1.5, pp. 52-53 (M19, Assessment: Numbers to 1,000); Session 1.6, p. 55-56; Session 4.3, p. 147 (M27, Assessment: Numbers to 10,000).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Using the <i>LogoPaths</i> Software</b> If you are using the <i>LogoPaths</i> software this year, give students ongoing access to the computers <b>outside of math time</b> during this unit. <i>LogoPaths</i> Resources Masters (M1-M6) offer continued work with <i>Missing Measures</i> and <i>Steps</i> activities. Students can also continue to play <i>Mazes</i> and spend time working with the <i>Free Explore</i> option of the Software. See <b>Part 5: Technology in Investigations: Calculators and Computers</b> in <i>Implementing Investigations</i> in Grade 4: Introducing and Managing the <i>LogoPaths</i> software in Grade 4.</p>

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GRADE FOUR INVESTIGATIONS  
UNIT 5: LANDMARKS AND LARGE NUMBERS



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.9.</b> Select, use, and explain the commutative, associative, and identity properties of operations on whole numbers in problem situations, e.g., <math>37 \times 46 = 37 \times 46 = 46 \times 37</math>, <math>(5 \times 7) \times 2 = 5 \times (7 \times 2)</math>.</p> <p><b>4.N.10.</b> Select and use an appropriate operation(s) (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p> <p><b>4.N.12.</b> Add and subtract (up to five-digit numbers) and multiply (up to three digits by two digits) accurately and efficiently.</p> <p><b>4.N.14.</b> Demonstrate in the classroom an understanding of and the ability to use the conventional algorithms for addition and subtraction (up to five-digit numbers), and multiplication (up to three digits by two digits).</p>	<p><b>Unit 5:</b> Landmarks and Large Numbers p. 64 Discussion 2, p. 67 Discussion 1, p. 73 Activity 1, p. 74 Activity 2</p>	<p><b>3.</b> Solve addition problems efficiently, choosing from a variety of strategies.</p>	<p><b>Observation:</b> Session 2.1, p. 62; Session 2.2, p. 70; Session 2.3, p. 75; Session 2.4, pp. 82-83; Session 2.5, p. 89.</p> <p><b>Writing:</b> Session 2.4, p. 81 (Student Activity Book p. 29).</p> <p><b>Portfolio:</b> Session 2.6, p. 92 (M23, Assessment: Solving an Addition Problem in Two Ways); Session 4.7, p. 164 (M29, End of Unit Assessment, problem 2A).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 5: LANDMARKS AND LARGE NUMBERS



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.10.</b> Select and use an appropriate operation(s) (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p> <p><b>4.N.12.</b> Add and subtract (up to five-digit numbers) and multiply (up to three digits by two digits) accurately and efficiently.</p> <p><b>4.N.14.</b> Demonstrate in the classroom an understanding of and the ability to use the conventional algorithms for addition and subtraction (up to five-digit numbers), and multiplication (up to three digits by two digits).</p>	<p><b>Unit 5:</b> Landmarks and Large Numbers p. 61. Activity 1, p. 133 Discussion 1, p. 135 Activity 2, p. 152 Discussion 2.</p> <p><b>Unit 5:</b> Landmarks and Large Numbers p. 61. Activity 1, p. 67 Discussion 1, p. 139 Discussion 1.</p> <p><b>Unit 5:</b> Landmarks and Large Numbers p. 64 Discussion 2, p. 80 Discussion 1, p. 81 Activity 2, p. 84 Discussion 3, p. 85 Session Follow-Up, p. 139 Discussion 1, p. 145 Discussion 1, p. 177 Teacher Note.</p>	<p><b>4.</b> Solve subtraction problems with 3-digit numbers by using at least one strategy efficiently.</p>	<p><b>Observation:</b> Session 4.1, pp. 135-136; Session 4.2, pp.142-143; Session 4.3, p. 148; Session 4.4, p. 151; Session 4.5, pp.156-158; Session 4.6, p. 159; Session 4.7, p. 164.</p> <p><b>Writing:</b> Session 4.2, p. 142 (Student Activity Book p. 57).</p> <p><b>Portfolio:</b> Session 4.2, p. 141 (Student Activity Book pp. 55-56); Session 4.7, p. 164 (M 29, End of Unit Assessment, problems 1 and 2B).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 6: FRACTION CARDS AND DECIMAL SQUARES

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.3.</b> Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.</p> <p><b>4.N.3.</b> Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on the number line.</p> <p><b>4.N.18.</b> Use concrete objects and visual models to add and subtract common fractions.</p>	<p><b>Unit 6:</b> Fraction Cards and Decimal Squares p. 25 Activity 1, p. 33 Activity 1, p. 38 Activity 1, p. 42 Discussion 1, p. 90 Activity 2, p. 91 Math Workshop</p> <p><b>Unit 6:</b> Fraction Cards and Decimal Squares p. 12 Note 3, p. 53 Activity 1, p. 54 Math Workshop 2, p. 57 Session Follow-Up 3, p. 59 Discussion 1, p. 60 Math Workshop 2</p>	<p>1. Identify fractional parts of an area.</p> <p>2. Identify fractional parts of a group (of objects, people, etc.).</p>	<p><b>Observation:</b> Session 1.1, pp. 27, 30; Session 1.2, p. 34; <b>Writing:</b> Session 1.5, p. 50 (M12, Assessment: Identifying and comparing Fractions). <b>Portfolio:</b> Session 1.5, p. 50 (M12, Assessment: Identifying and Comparing Fractions, problem 1).</p> <p><b>Observation:</b> Session 1.3, p. 40; Session 1.4, pp. 44-46; Session 1.5, p. 49; Session 1.6, pp. 55-56. <b>Writing:</b> Session 2.2, p. 75 (Student Activity Book p. 31). <b>Portfolio:</b> Session 1.5, p. 50 (M12, Assessment: Identifying and Comparing Fractions, problem 2); Session 1.6, pp. 54-55 (Student Activity Book pp. 19-21); Session 3.7, p. 136 (M31, End of Unit Assessment, problem 1).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Using the LogoPaths Software.</b> If you are using the <i>LogoPaths</i> software this year, give students ongoing access to the computers <b>outside of math time</b> during this unit. <i>LogoPaths</i> Resource Masters (M1-M6) offer continued work with <i>Missing Measures</i> and <i>Steps</i> activities. Students can also continue to play Mazes and spend time working with the <i>Free Explore</i> option of the software. See <b>Part 5: Technology in Investigation: Calculators and Computers</b> in <i>Implementing Investigations in Grade 4: Introducing and Managing the LogoPaths software in Grade 4.</i></p>

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GRADE FOUR INVESTIGATIONS  
UNIT 6: FRACTION CARDS AND DECIMAL SQUARES

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.4.</b> Select, use, and explain models to relate common fractions and mixed numbers (<math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{1}{6}</math>, <math>\frac{1}{8}</math>, <math>\frac{1}{10}</math>, <math>\frac{1}{12}</math>, <math>1\frac{1}{2}</math>), find equivalent fractions, mixed numbers, and decimals, and order fractions.</p> <p><b>4.N.18.</b> Use concrete objects and visual models to add and subtract common fractions.</p>	<p><b>Unit 6:</b> Fraction Cards and Decimal Squares p. 69 Discussion 1, p. 71 Activity 2, p. 76 Discussion 2, p. 79 Discussion 1, p. 80 Activity 2, p. 84 Activity 1, p. 85 Activity 2, p. 89 Discussion 1</p>	<p><b>3.</b> Read, write, and interpret fraction notation.</p>	<p><b>Observation:</b> Session 1.4, pp. 44-46; Session 1.6, pp. 55-56; Session 2.1, pp. 72-73; Session 2.2, p. 75, Session 2.3, p. 81 (Capture Fractions); Session 2.4, pp. 85-86; Session 2.5, p. 92 (Capture Fractions, Fractions on a Number Line); Session 2.6, p. 95-96 (Capture Fractions, Fractions on a Number Line). <b>Writing:</b> Session 1.5, p. 50 (M12, Assessment: Identifying and Comparing Fractions); Session 2.2, p. 75 (Student Activity Book p. 31). <b>Portfolio:</b> Session 1.5, p. 50 (M12, Assessment: Identifying and Comparing Fractions, problems 1-3); Session 2.6, p. 95 (M23, Assessment: Comparing Fractions).</p>	
<p><b>4.N.4.</b> Select, use, and explain models to relate common fractions and mixed numbers (<math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{1}{6}</math>, <math>\frac{1}{8}</math>, <math>\frac{1}{10}</math>, <math>\frac{1}{12}</math>, <math>1\frac{1}{2}</math>), find equivalent fractions, mixed numbers, and decimals, and order fractions.</p> <p><b>4.N.5.</b> Identify and generate equivalent forms of common decimals and fractions less than one whole (halves, quarters, fifths, and tenths).</p>	<p><b>Unit 6:</b> Fraction Cards and Decimal Squares p. 105 Discussion 1, p. 107 Activity 2, p. 108 Activity 3, p. 112 Activity 1, p. 114 Activity 2, p. 117 Discussion 1</p> <p><b>Unit 6:</b> Fraction Cards and Decimal Squares p. 105 Discussion 1, p. 107 Activity 2, p. 108 Activity 3, p. 112 Activity 1, p. 114 Activity 2, p. 117 Discussion 1, p. 117 Activity 2, p. 121 Activity 2</p>	<p><b>4.</b> Order fractions with like and unlike denominators.</p>	<p><b>Observation:</b> Session 2.3, p. 81 (Capture Fractions); Session 2.5, p. 92 (Capture Fractions, Fractions on a Number Line); Session 2.6, p. 95-96 (Capture Fractions, Fractions on a Number Line). <b>Writing:</b> Session 2.2, p. 75 (Student Activity Book p. 31); Session 2.6, p. 95 (M23, Assessment: Comparing Fractions); Session 3.7, p. 136 (M31, End of Unit Assessment, problems 1-2).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 6: FRACTION CARDS AND DECIMAL SQUARES



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.5.</b> Identify and generate equivalent forms of common decimals and fractions less than one whole (halves, quarters, fifths, and tenths).</p> <p><b>4.N.6.</b> Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to hundredths.</p>		<p><b>5.</b> Read, write, and interpret decimal fractions in tenths and hundredths.</p>	<p><b>Observation:</b> Session 3.2, p. 113, 115 (Decimal Compare); Session 3.3, p. 119 (Fill Two); Session 3., p. 124; Session 3.5, p. 129 (Decimal Compare, Fill Two); Session 3.6, p. 132 (Decimal Compare, Fill Two).</p> <p><b>Writing:</b> Session 1.5, p. 50 (M12, Assessment: Identifying and comparing Fractions).</p> <p><b>Portfolio:</b> Session 3.5, p. 129 Activity Book pp. 57-58); Session 3.7, p. 136 (M31, End of Unit Assessment, problem 3).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 7: MOVING BETWEEN SOLIDS AND SILHOUETTES

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p>4.G.2. Describe, model, draw, compare, and classify two- and three-dimensional shapes, e.g., circles, polygons - especially triangles and quadrilaterals - cubes, spheres, and pyramids.</p>	<p><b>Unit 7:</b> Moving Between Solids and Silhouettes p. 23 Activity 1, p. 24 Discussion 2, p. 25 Activity 3, p. 29 Activity 2</p>	<p>1. Identify 2-dimensional silhouettes of 3-dimensional solids (e.g., a cone can project a rectangular silhouette).</p> <p>2. Draw 2-dimensional representations showing different perspectives of a 3-dimensional object.</p> <p>3. Find the volume of cube buildings and rectangular prisms.</p>	<p><b>Observation:</b> Session 1.1, p. 25; Session 1.2, p. 30 (Matching Solids and Silhouettes); Session 1.3, p. 38; Session 1.4, p. 42; Session 2.5, pp. 70, 72.</p> <p><b>Writing:</b></p> <p><b>Portfolio:</b> Session 1.2, p. 89 (Student Activity Book p. 5); Session 1.4, p. 42 (M14, Assessment: Match the Silhouettes).</p> <p><b>Observation:</b> Session 2.1, pp. 50, 53; Session 2.2, p. 58; Session 2.3, p. 61 (Silhouettes of Buildings); Session 2.4, p. 67; Session 2.2, pp. 70, 72.</p> <p><b>Writing:</b> Session 2.2, pp. 56, 59 (Student Activity Book pp. 21, 25).</p> <p><b>Portfolio:</b> Session 2.4, p. 65 (Student Activity Book p. 30); Session 2.5, p. 71 (M16-17, Assessment: Drawing Silhouettes); Session 3.5, p. 95 (M23-25, End of Unit Assessment, problem 1).</p> <p><b>Observation:</b> Session 3.1, p. 79; Session 3.2, p. 83; Session 3.3, pp. 87, 88 (Finding the Volume of More Boxes; Double the Number of Cubes); Session 3.4, p. 92 (Finding the Volume of More Boxes; Double the Numbers of Cubes).</p> <p><b>Writing:</b> Session 3.3, p. 89 (Student Activity Book p. 48).</p> <p><b>Portfolio:</b> Session 3.2, pp. 82-83 (Student Activity Book pp. 39-42); Session 3.3, p.86 (Student Activity Book p. 45); Session 3.5, p. 95 (M23-25, End of Unit Assessment, problems 2 and 3).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Using the LogoPaths Software.</b> If you are using the <i>LogoPaths</i> software this year, give students ongoing access to the computers <b>outside of math time</b> during this unit. <i>LogoPaths</i> Resource Masters (M1-M6) offer continued work with <i>Missing Measures</i> and <i>Steps</i> activities. Students can also continue to play Mazes and spend time working with the <i>Free Explore</i> option of the software. See <b>Part 5: Technology in Investigation: Calculators and Computers</b> in <i>Implementing Investigations in Grade 4: Introducing and Managing the LogoPaths software in Grade 4.</i></p>

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GRADE FOUR INVESTIGATIONS  
UNIT 8: HOW MANY PACKAGES? HOW MANY GROUPS?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.8.</b> Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.</p> <p><b>4.N.10.</b> Select and use an appropriate operation(s) (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p> <p><b>4.N.12.</b> Add and subtract (up to five-digit numbers) and multiply (up to three digits by two digits) accurately and efficiently.</p> <p><b>4.N.16.</b> Round whole numbers through 100,000 to the nearest 10, 100, 1000, 10,000 and 100,000.</p> <p><b>4.N.17.</b> Select and use a variety of strategies (e.g., front-end, rounding, and regrouping) to estimate quantities, measures, and the results of whole-number computations up to three-digit whole numbers and amounts of money to \$1000, and to judge the reasonableness of the answer.</p>	<p><b>Unit 8:</b> How Many Packages? How Many Groups? P. 27 Activity 1, p. 29 Activity 2, p. 29 Discussion 3, p. 31 Session Follow-Up 4, p. 33 Activity 1, p. 131 Dialogue Box</p> <p><b>Unit 8:</b> How Many Packages? How Many Groups? P. 27 Activity 1, p. 29 Activity 2, p. 29 Discussion 3, p. 31 Session Follow-Up 4, p. 33 Activity 1, p. 131 Dialogue Box</p>	<p>1. Multiply 2-digit numbers efficiently.</p>	<p><b>Observation:</b> Session 1.1, p. 29; Session 1.2, p. 35; Session 1.3, p. 41; Session 1.4, pp. 48, 50, 52 (Assessment: Solving Multiplication Problems); Session 2.1, pp.64, 67; Session 2.2, pp.71-72 (Creating a Multiplication Cluster Problem); Session 2.4, p. 80.</p> <p><b>Writing:</b> Session 1.1, p. 29 (Student Activity Book p. 1); Session 1.2, pp. 35, 38 (Student Activity Book pp. 5, 6, 8); Session 1.4, p. 51 (Student Activity Book pp. 14-15); Session 2.3, p. 77 (Student Activity Book p. 29); Session 2.4, p. 80 (Student Activity Book pp. 31-32).</p> <p><b>Portfolio:</b> Session 1.1, p. 35 (Student Activity Book pp.5-6); Session 1.4, p. 51 (Student Activity Book pp. 25-26); Session 2.5, p. 83 (M19, Assessment: 34 x 68); Session 3.6, p. 111 (M21-22, End of Unit Assessment, problem 12).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Using the LogoPaths Software.</b> If you are using the <i>LogoPaths</i> software this year, give students ongoing access to the computers <b>outside of math time</b> during this unit. <i>LogoPaths</i> Resource Masters (M1-M6) offer continued work with <i>Missing Measures</i> and <i>Steps</i> activities. Students can also continue to play Mazes and spend time working with the <i>Free Explore</i> option of the software.</p> <p>See <b>Part 5: Technology in Investigation: Calculators and Computers in Implementing</b> Investigations in Grade 4: Introducing and Managing the <i>LogoPaths</i> software in Grade 4.</p>

Agawam Public Schools  
Massachusetts Learning  
Standards

GRADE FOUR INVESTIGATIONS  
UNIT 8: HOW MANY PACKAGES? HOW MANY GROUPS?



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.N.8.</b> Select, use, and explain various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.</p> <p><b>4.N.10.</b> Select and use an appropriate operation(s) (addition, subtraction, multiplication, and division) to solve problems, including those involving money.</p>		<p><b>2.</b> Solve division problems with 1-digit and small two-digit divisors by using at least one strategy efficiently.</p>	<p><b>Observation:</b> Session 3.1, pp. 90-91 (How Many Teams?); Session 3.2, pp. 96-98 (Solving Division Problems); Session 3.3, p. 101 (Solving Division Problems); Session 3.4, p. 102 (Solving Division Problems); Session 3.5, pp. 107-108; Session 3.6, p. 111.</p> <p><b>Writing:</b> Session 3.3, p. 101 (Student Activity Book pp. 48)</p> <p><b>Portfolio:</b> Session 3.2, p. 96 (Student Activity Book pp.45-45); Session 3.6, p. 111 (M21-22, End of Unit Assessment, problem 2).</p>	

Agawam Public Schools  
Massachusetts Learning  
Standards

GRADE FOUR INVESTIGATIONS  
UNIT 9: PENNY JARS AND PLANT GROWTH

Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p>4.P.1. Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000.</p> <p>4.P.4. Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.</p> <p>4.P.4. Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.</p> <p>4.P.6. Determine how change in one variable relates to a change in a second variable, e.g., input-output tables.</p> <p>4.P.1. Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like, 3, 30, 300, 3000.</p> <p>4.P.2. Use symbol and letter variables to represent unknowns or quantities that vary in expressions and in equations or inequalities (mathematical sentences that use =, &lt;, &gt;).</p>	<p><b>Unit 9:</b> Penny Jars and Plant Growth p. 27 Activity 1, p. 30 Discussion 2, p. 31 Activity 3, p. 55 Activity 1, p. 62 Activity 1, p. 69 Discussion 1, p. 70 Activity 2, p. 79 Math Workshop 2</p> <p><b>Unit 9:</b> Penny Jars and Plant Growth p. 47 Activity 1, p. 48 Activity 2, p. 50 Discussion 3, p. 69 Discussion 1</p> <p><b>Unit 9:</b> Penny Jars and Plant Growth p. 72 Discussion 3, p. 92 Discussion 2, p. 98 Activity 1, p. 101 Discussion 2</p>	<p>1. Connect tables and graphs to each other and to the situations they represent.</p> <p>2. Make a graph on a coordinate grid from a table of values.</p> <p>3. Describe how a graph shows change: where the rate of change is increasing, decreasing, or remaining constant, and how differences in steepness represent differences in the rate of change.</p>	<p><b>Observation:</b> Session 1.1, pp. 28, 32; Session 1.2, p. 37; Session 2.2, pp. 56-57; Session 2.4, p. 71; Session 3.3, p. 121; Session 3.4, p. 128.</p> <p><b>Writing:</b> Session 1.1, p.32 (Student Activity Book p. 32); Session 2.2, p. 55 (Student Activity Book p. 55).</p> <p><b>Portfolio:</b> Session 2.5, pp. 81-82 (Student Activity Book pp. 35-37 and Penny Jar Comparisons, M28-M30); Session 3.5, pp. 130-131 (End of Unit Assessment, M37-M39, problems 2, 3, 4).</p> <p><b>Observation:</b> Session 2.4, p. 71; Session 3.1, pp. 109, 112; Session 3.2, p.116; Session 3.4, p. 128.</p> <p><b>Writing:</b> Session 2.5, p. 76.</p> <p><b>Portfolio:</b> Session 2.5, pp. 81-82 (Student Activity Book pp. 35-37 and Penny Jar Comparisons, M28-M30).</p> <p><b>Observation:</b> Session 1.2, p. 37; Session 2.5, pp. 80-81, 83; Session 3.1, pp. 109 112; Session 3.2, p. 116.</p> <p><b>Writing:</b> Session 2.5, p. 81 (Student Activity Book pp. 35, 37).</p> <p><b>Portfolio:</b> Session 3.5, pp. 130-131 (M37-39, End of Unit Assessment, problems 1, 2, 3).</p>	<p>Calculators Computer Software Online Resources ExamView SuccessNet</p> <p><b>Using the LogoPaths Software.</b> If you are using the <i>LogoPaths</i> software this year, give students ongoing access to the computers <b>outside of math time</b> during this unit. <i>LogoPaths</i> Resource Masters (M1-M6) offer continued work with <i>Missing Measures</i> and <i>Steps</i> activities. Students can also continue to play Mazes and spend time working with the <i>Free Explore</i> option of the software.</p> <p>See <b>Part 5: Technology in Investigation: Calculators and Computers in Implementing Investigations in Grade 4: Introducing and Managing the LogoPaths software in Grade 4.</b></p>

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GRADE FOUR INVESTIGATIONS  
UNIT 9: PENNY JARS AND PLANT GROWTH



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.P.1.</b> Create, describe, extend, and explain symbolic (geometric) and numeric patterns, including multiplication patterns like 3, 30, 300, 3000.</p> <p><b>4.P.4.</b> Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.</p> <p><b>4.P.5.</b> Solve problems involving proportional relationships, including unit pricing (e.g., four apples cost \$.80, so one apple costs \$.20) and map interpretation (e.g., one inch represents five miles, so two inches represents ten miles).</p> <p><b>4.P.6.</b> Determine how change in one variable relates to a change in a second variable, e.g., input-output tables.</p>	<p><b>Unit 9:</b> Penny Jars and Plant Growth p. 47 Activity 1, p. 48 Activity 2, p. 50 Discussion 3, p. 55 Activity 1, p. 58 Discussion 2, p. 69 Discussion 1, p. 70 Activity 2, p. 72 Discussion 3</p>	<p><b>4.</b> Take into account the starting amount and the amount of change in describing and comparing situations of constant change.</p>	<p><b>Observation:</b> Session 2.1, pp. 48-49; Session 2.2, pp. 56-57; Session 2.5, pp. 80-81, 83.</p> <p><b>Writing:</b> Session 2.1, p.53 (Student Activity Book p. 15).</p> <p><b>Portfolio:</b> Session 2.5, p. 81(Student Activity Book pp. 35, 37, Penny Jar Comparisons, M28-M30); Session 3.5, pp. 130-131 (M37-39, End of Unit Assessment, problem 5).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 9: PENNY JARS AND PLANT GROWTH



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.P.2.</b> Use symbol and letter variables to represent unknowns or quantities that vary in expressions and in equations or inequalities (mathematical sentences that use =, &lt;, &gt;).</p> <p><b>4.P.4.</b> Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.</p> <p><b>4.P.5.</b> Solve problems involving proportional relationships, including unit pricing (e.g., four apples cost \$.80, so one apple costs \$.20) and map interpretation (e.g., one inch represents five miles, so two inches represents ten miles).</p> <p><b>4.P.6.</b> Determine how change in one variable relates to a change in a second variable, e.g., input-output tables.</p>	<p><b>Unit 9:</b> Penny Jars and Plant Growth p. 77 Activity 1, p. 79 Math Workshop 2, p. 85 Discussion 1, p. 86 Math Workshop 2, p. 92 Math Workshop 1, p. 92 Discussion 2, p. 101 Discussion 2</p>	<p><b>5.</b> In a situation of constant change, write rules (using words or arithmetic expressions) to determine the value of one quantity, given the value of the other.</p>	<p><b>Observation:</b> Session 2.1, p. 49; Session 2.3, p. 63; Session 2.4, p. 71; Session 2.6, p. 87-89; Session 2.8, p. 100.</p> <p><b>Writing:</b> Session 2.1, p.53 (Student Activity Book p. 15); Session 2.2, p. 55 (Student Activity Book p. 18); Session 2.3, pp. 62-63 (Student Activity Book pp. 21-22).</p> <p>Portfolio: Session 3.5, pp. 130-131 (M37-39, End of Unit Assessment, problem 5).</p>	

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GRADE FOUR INVESTIGATIONS  
UNIT 9: PENNY JARS AND PLANT GROWTH



Students engage in problem solving, communicating, reasoning, connecting, and representing as they:	Investigations in Number, Data, & Space / Sessions	Investigations Benchmarks	Classroom Assessments (Observation, Writing, & Portfolio)	Technology
<p><b>4.G.6.</b> Using ordered pairs of numbers and/or letters, graph, locate, identify points, and describe paths (first quadrant).</p> <p><b>4.M.3.</b> Identifying time to the minute on analog and digital clocks using a.m. and p.m. Compute elapsed time using a clock (e.g., hours and minutes since...) and using a calendar (e.g., days since...).</p>	<p>These pages prepare students for this learning standard.</p> <p><b>Unit 9:</b> Penny Jars and Plant Growth p. 69 Discussion 1, p. 70 Activity 2, p. 72 Discussion 3, p. 79 Math Workshop 2, p. 92 Discussion 2, p. 107 Activity 1, p. 110 Discussion 2</p> <p>These activities prepare students for this learning standard.</p> <p><b>Unit 9:</b> Penny Jars and Plant Growth p. 107 Activity 1, p. 110 Discussion 2, p. 117 Discussion 2</p>			

**Investigations**

**Pacing Guide**

**K - 4**

Agawam Public Schools  
Math Investigations Curriculum Pacing

Kindergarten Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
1	<b>Who Is in School Today?</b> Classroom Routines and Materials	18	September October
<b>Vocabulary:</b> Taking attendance Double Checking			
2	<b>Counting and Comparing</b> Measurement and the Number System 1	24	Early October November
<b>Vocabulary:</b> Count Zero Handful Ten-frame Size Inventory Double-check Compare Biggest taller measure longer shorter counting backwards double-check more fewer shortest same longer than shorter than most equal fewest in order smallest longest			
3	<b>What Comes Next?</b> Patterns and Functions	22	November December
<b>Vocabulary:</b> Observe Pattern Same Different Pattern repeat unit Describe			
4	<b>Measuring and Counting</b> Measurement and the Number System 2	26	December January
<b>Vocabulary:</b> Long Length Measure Longest Shortest Penny More Less More Fewer more fewer plus minus add remove compare larger total combining removing arrangement			

Agawam Public Schools  
Math Investigations Curriculum Pacing

Kindergarten Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
5	<b>Make a shape, Build a Block</b> Classroom Routines and Materials	20	February March
<b>Vocabulary:</b> rhombus trapezoid sphere cone same different face	side matching cylinder cube rectangular prism cone	Rectangle Square Circle Curved Straight Sides Round	Corners Points Corners Triangles Geoboard Hexagon Triangular prism
6	<b>How Many Do You Have?</b> Measurement and the Number System 1	26	March April
<b>Vocabulary:</b> Eleven Twelve Thirteen Fourteen Fifteen Sixteen	Seventeen Eighteen Nineteen Twenty Length Measure	How long more add plus sign combined equal sign	equals remove minus equation combination
7	<b>Sorting and Surveys</b> Data Analysis	17	May June
<b>Vocabulary:</b> Count      Attributes      Comparing      Same      Different      Describe      Survey      Data      Response			

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 1 Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
1	<b>How Many of Each?</b> Addition, Subtraction, and the Number System 1	25	September – Mid-October
<b>Vocabulary:</b> Schedule Estimate Calendar Data Count Number line Smallest Largest In order More Larger counting back image greater than less than equal to more fewer sum plus equal plus add equation counting all counting on combine symbols penny cent heads tails total			
2	<b>Making Shapes and Designing Quilts</b> 2-D Geometry	16	Mid-October - Early November
<b>Vocabulary:</b> Geometry Triangle Rectangle Square Circle Two-dimensional Hexagon Rhombus quadrilateral pattern			
3	<b>Solving Story Problems</b> Addition, Subtraction, and the Number System 2	25	Mid-November December
<b>Vocabulary:</b> number line combination plus add equals subtract greater than more than less than			
4	<b>What Would You Rather Be?</b> Data Analysis	13	January
<b>Vocabulary:</b> survey sorting describe attributes rule data equation representation tally marks compare			

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 1 Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
5	<b>Fish Lengths and Animal Jumps</b> Measurement	11	February
<b>Vocabulary:</b> measure length measurement		unit inch heights	distance longest shortest
6	<b>Number Games and Crayon Puzzles</b> Addition, Subtraction, and the Number System 3	20	March
<b>Vocabulary:</b> equation equal sign story problems more minus		counting all more fewer combine addition	count on plus sign ten-frame combinations sum
7	<b>Color, Shape, and Number Patterns</b> Patterns and Functions	15	April
<b>Vocabulary:</b> Repeating pattern Pattern Unit		triangle square	trapezoid hexagon
8	<b>Twos, Fives, and Tens</b> Patterns and Functions	18	May
<b>Vocabulary:</b> Counting on Patterns Addition notation Equals		combining addition equations addends combinations	less than the same as
9	<b>Blocks and Boxes</b> 3-D Geometry	16	June
<b>Vocabulary:</b> Geometry Footprints		Three-dimensional (3-D) Two-dimensional (2-D)	

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 2 Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
1	<b>Counting, Coins, and Combinations</b> Addition, Subtraction, and the Number System 1	27	September October
<b>Vocabulary:</b> analog clock greater than pennies data single digit numbers plus sign fewer array	o'clock cents nickels zero parts equal sign minus sign	adding small hand dimes addends whole more doubles	digital clock less than quarters addition combinations equation same dozen
2	<b>Shapes, Blocks and Symmetry</b> 2-D and 3-D Geometry	19	October November
<b>Vocabulary:</b> polygons geometry right angle rectangular prism line of symmetry	two-dimensional shapes three-dimensional shapes rectangles symmetry	faces angle area quadrilateral	
3	<b>Stickers, Number Strings, and Story Problems</b> Addition, Subtraction, and the Number System 2	26	November December
<b>Vocabulary:</b> addends doubles plus or minus 1 doubles combination subtraction odd quarter grouping by 2's, 5's, & 10's ones	doubles counting back equation counting by 5's / 10's dime tens place	near doubles count on addition equal groups nickel tally marks 2-digit numbers ones place	calculator counting all adding tens & ones even penny plus 10 combinations tens
4	<b>Pockets, Teeth, and Favorite Things</b> Data Analysis	15	January
<b>Vocabulary:</b> data categories mode rule	Venn diagram outlier representations line plot	attributes questionnaire	

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 2 Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
5	<b>How Many Floors? How Many Rooms?</b> Patterns, Functions, and Change	11	February
<b>Vocabulary:</b> representation floor plan rhombus odd numbers	table triangle repeating patterns multiples	column hexagon unit	row trapezoid even numbers
6	<b>How Many Tens? How Many Ones?</b> Addition, Subtraction, and the Number System 3	20	February March
<b>Vocabulary:</b> tens nickel dollar	ones pennies array	story problem dime multiples	100 chart cents skip counting
7	<b>Parts of a Whole, Parts of a Group</b> Fractions	10	April
<b>Vocabulary:</b> one half two and one half one third	equal parts one fourth thirds	story problem dime multiples	100 chart cents skip
8	<b>Partners, Teams, and Paper Clips</b> Addition, Subtraction, and the Number System 4	16	April May
<b>Vocabulary:</b> even number horizontal	odd number diagonal	conjecture sum	vertical
9	<b>Measuring Length and Time</b> Addition, Subtraction, and the Number System 4	21	May June
<b>Vocabulary:</b> length height accurately foot benchmarks timeline quarter hour duration	width unit units tape measure metric system half-hour midnight	measure inch foot lengths yard centimeters A.M. noon	estimate measurement rulers yard stick meters P.M. intervals

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 3 Curriculum Units

<b>Unit</b>	<b>Title</b>	<b>Number of Sessions</b>	<b>Suggested Pacing</b>
1	<b>Trading Stickers, Combining Coins</b> Addition, Subtraction, and the Number System 1	17	September
<b>Vocabulary:</b> adding by place adding one number in parts addition combinations Celcius degree difference		digit dime dollar equation Fahrenheit nickel number line	ones place penny quarter sum tens place unmarked number line
2	<b>Surveys and Line Plots</b> Data Analysis / also Ordered Pairs	20	October Early-November
<b>Vocabulary:</b> bar graph category categories compare data distance		double bar graph feet inch interval key length	less than half line plot median metric system mode more than half outlier
<b>Vocabulary:</b> range scale survey U.S. standard system yard			
3	<b>Collections and Travel Stories</b> Addition, Subtraction, and the Number System 2	26	Early-November December
<b>Vocabulary:</b> add up difference		landmark numbers subtract back	subtraction facts
4	<b>Perimeter, Angles, and Area</b> 2-D Geometry & Measurement / also 3-D Geometry & Measurement	17	January
<b>Vocabulary:</b> area congruent degree flip		measurement benchmark parallelogram perimeter quadrilateral	right angle slide tetromino turn vertex (vertices)
<b>Unit</b>	<b>Title</b>	<b>Number of Sessions</b>	<b>Suggested Pacing</b>
5	<b>Equal Groups</b> Multiplication and Division	23	February Early-March

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 3 Curriculum Units

<b>Unit</b>	<b>Title</b>	<b>Number of Sessions</b>	<b>Suggested Pacing</b>
6	<b>Stories, Tables, and Graphs</b> Patterns, Functions, and Change	20	February March
<b>Vocabulary:</b> column degrees horizontal axis multiple negative repeating pattern		temperature unit vertical axis row table	
7	<b>Finding Fair Shares</b> Fractions and Decimals	14	April
<b>Vocabulary:</b> decimal decimal point denominator		equivalent fractions fraction numerator	
<b>Unit</b>	<b>Title</b>	<b>Number of Sessions</b>	<b>Suggested Pacing</b>
8	<b>How Many Hundreds? How Many Miles?</b> Addition, Subtraction, and the Number System 3	19	May
<b>Vocabulary:</b> addend difference equation equivalent estimate expression		hundreds landmark multiplication negative positive sum	
9	<b>Solids and Boxes</b> 3-D Geometry and Measurement	13	June
<b>Vocabulary:</b> edges faces figure net pattern polyhedra		polyhedron prisms pyramid rectangular prism vertex (vertices) volume	

Agawam Public Schools  
Math Investigations Curriculum Pacing

Grade 4 Curriculum Units

Unit	Title	Number of Sessions	Suggested Pacing
1	<b>Factors, Multiples, and Arrays</b> Addition, Subtraction, and the Number System 1	14	September
<b>Vocabulary:</b> array composite number dimension factor		multiple Multiplication Multiplication combination prime number	product square number
2	<b>Describing the Shape of the Data</b> Data Analysis / also Ordered Pairs	17	September October
<b>Vocabulary:</b> bar graph conclusion data line plot median numerical data		outlier probability range representation survey value	
3	<b>Multiple Towers and Division Stories</b> Addition, Subtraction, and the Number System 2	20	October November
<b>Vocabulary:</b> array division doubled equation		factor halved multiple multiplication	product remainder
4	<b>Size, Shape and Symmetry</b> 2-D Geometry & Measurement	20	December
<b>Vocabulary:</b> acute angle area benchmark centimeter degree endpoint equilateral triangle estimate	foot hexagon inch kilometer linear measurement line segment meter	metric system millimeter obtuse orientation parallel parallelogram pentagon	perimeter polygon prefix quadrilateral rectangle right angle side  square square unit standard system symmetrical symmetry trapezoid vertex (vertices) volume yard

Agawam Public Schools  
Math Investigations Curriculum Pacing  
Grade 4 Curriculum Units

<b>Unit</b>	<b>Title</b>	<b>Number of Sessions</b>	<b>Suggested Pacing</b>
5	<b>Landmarks and Large Numbers</b> Addition, Subtraction, and the Number System	24	January Early-February
<b>Vocabulary:</b> Addition strategies		Place value	Subtraction strategies
6	<b>Fraction Cards and Decimal Squares</b> Fractions and Decimals	20	February March
<b>Vocabulary:</b> decimal denominator fraction		landmarks numerator	sixths thirds
7	<b>Moving Between Solids and Silhouettes</b> 3-D Geometry and Measurement	14	March
<b>Vocabulary:</b> cylinder edge face pattern		prism pyramid rectangular prism silhouette	solid vertex volume
8	<b>How Many Packages? How Many Groups?</b> Multiplication and Division 3	16	April
<b>Vocabulary:</b> cluster division divisor		estimate factor landmark	multiple multiplication remainder
9	<b>Penny Jars and Plant Growth</b> Patterns, Functions, and Change	15	May
<b>Vocabulary:</b> axis decrease diagram		graph representation table	