

**Randolph Township School District  
Randolph Elementary Schools**

**Math Curriculum  
Grade 1**

*“The only real mistake is the one from which you don’t learn.”  
-Henry Ford*

**Elementary Education**  
Katherine Thorn, Elementary Supervisor

**Curriculum Committee 2018**  
Christina Grott  
Taylor Moore

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**Randolph Township School District  
Randolph Elementary Schools  
Grade 1 - Math**

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## **Mission Statement**

*We commit to inspiring and empowering all students in Randolph schools to reach their full potential as unique, responsible and educated members of a global society.*

## **Randolph Township School District Affirmative Action Statement**

### **Equality and Equity in Curriculum**

The Randolph Township School district ensures that the district's curriculum and instruction are aligned to the state's standards. The curriculum provides equity in instruction, educational programs and provides all students the opportunity to interact positively with others regardless of race, creed, color, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, religion, disability or socioeconomic status.

N.J.A.C. 6A:7-1.7(b): Section 504, Rehabilitation Act of 1973; N.J.S.A. 10:5; Title IX, Education Amendments of 1972

# **RANDOLPH TOWNSHIP BOARD OF EDUCATION**

## **EDUCATIONAL GOALS**

### **VALUES IN EDUCATION**

The statements represent the beliefs and values regarding our educational system. Education is the key to self-actualization, which is realized through achievement and self-respect. We believe our entire system must not only represent these values, but also demonstrate them in all that we do as a school system.

We believe:

- The needs of the child come first
- Mutual respect and trust are the cornerstones of a learning community
- The learning community consists of students, educators, parents, administrators, educational support personnel, the community and Board of Education members
- A successful learning community communicates honestly and openly in a non-threatening environment
- Members of our learning community have different needs at different times. There is openness to the challenge of meeting those needs in professional and supportive ways
- Assessment of professionals (i.e., educators, administrators and educational support personnel) is a dynamic process that requires review and revision based on evolving research, practices and experiences
- Development of desired capabilities comes in stages and is achieved through hard work, reflection and ongoing growth

**Randolph Township School District**  
**Randolph Elementary Schools**  
**Math~ Grade 1**

Introduction

The first grade mathematics curriculum has been closely aligned to the NJSLS to provide teachers with a clear and consistent framework to help ensure student readiness for college and the workforce. In addition, it encompasses the Mathematical Practice Standards to ensure an authentic understanding of the skills being taught. Students will gain a deeper knowledge of topics in comprehensive units. Students will grapple with content at a more rigorous level of practice and dive deeper into the why of mathematics. Each unit provides opportunities to collaborate, discuss, and reflect while problem solving and taking risks. Students will apply skills to reason and solve real world problems. The units of study provide opportunity for exploration and discovery, while also utilizing the resources and strategies to build a solid foundation of mathematics in first grade.

All students in Randolph Township Schools will be empowered to acquire knowledge and develop communication and problem solving skills that will serve as tools to promote their lifelong learning as confident, flexible, and resourceful thinkers. This curriculum has been designed to foster students' natural curiosity by encouraging all students, regardless of gender, economic status, or cultural heritage, to develop the ability, confidence, and motivation to succeed academically. Students will solve problems through integration of mathematics, science, and technology. In addition, they will communicate and reason thereby increasing their mathematical literacy. The ultimate goal is to engage students' interest and intellect through rich mathematical exploration, fostering a diverse and equitable environment that is challenging, caring, and technologically-equipped for the 21st Century.

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Curriculum Pacing Chart**  
**Math~ Grade 1**

<b>SUGGESTED TIME ALLOTMENT</b>	<b>UNIT NUMBER</b>	<b>CONTENT – UNIT OF STUDY</b>
<b>6 Weeks</b>	<b>I</b>	<b>Counting and Collecting Data</b>
<b>5 Weeks</b>	<b>II</b>	<b>Addition and Subtraction</b>
<b>6 Weeks</b>	<b>III</b>	<b>Diving Deep into Addition</b>
<b>5 Weeks</b>	<b>IV</b>	<b>Relationships between Addition and Subtraction</b>
<b>5 Weeks</b>	<b>V</b>	<b>Understanding Place Value</b>
<b>3 Weeks</b>	<b>VI</b>	<b>Measurement and Time</b>
<b>4 Weeks</b>	<b>VII</b>	<b>Geometry</b>
<b>4 Weeks</b>	<b>VIII</b>	<b>Double Digit Addition and Subtraction</b>

# RANDOLPH TOWNSHIP SCHOOL DISTRICT

## Math~ Grade 1

### UNIT I: Counting and Collecting Data

<b>TRANSFER:</b> Reason abstractly to utilize mathematical strategies to develop solutions to real world problems.		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S MATH</u></b></p> <p><b>1.NBT.A.1</b> Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p><b>1.MD.C.4</b> Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b>  <b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to Precision  <b>MP.7</b> Look for and make use of structure</p> <p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and</p>	Numbers are sequential and follow a pattern.	<ul style="list-style-type: none"> <li>How do we compare numbers?</li> </ul>
	Data can be organized in various ways to communicate information.	<ul style="list-style-type: none"> <li>Why do we collect data?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b></p> <p>A number line is a tool that helps count and compare numbers.</p> <p>Students will know that strategies are used to estimate and count groups of objects.</p>	<p><b>Students will be able to:</b></p> <p>Count forward and backward on a number line.</p> <p>Use a number line to determine the sequence and placement of numbers.</p> <p>Calculate the total number of objects in a large group by making groups, crossing out, etc.</p> <p>Determine the best strategy to use (i.e.- draw a picture, use tools, a number line, counters, etc.) to count large groups of objects.</p> <p>Collaborate and explain math thinking using</p>

<p>collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>	<p>The terms <i>more</i> and <i>less</i> are used when comparing numbers.</p> <p>A number grid shows patterns of large numbers.</p> <p>Data can be gathered and organized in a tally chart.</p> <p>Graphs are used to illustrate data.</p> <p>A graph can be interpreted by asking and answering questions.</p> <p><b>KEY TERMS:</b> tally, estimate, number line, number grid, compare, data, graph, pattern</p>	<p>verbal and written representations.</p> <p>Compare the value of numbers using mathematical vocabulary.</p> <p>Identify the patterns on a number grid and how to use them to count.</p> <p>Represent numbers using tally marks.</p> <p>Collect data and organize information through tally marks and charts.</p> <p>Analyze data in a bar graph.</p> <p>Express and clarify data.</p>
<p><b>ASSESSMENT EVIDENCE: Students will show their learning by:</b></p> <ul style="list-style-type: none"> <li>Counting a large group of objects using counting strategies and tools. This will be demonstrated by verbally expressing and explaining their reasoning to others.</li> <li>Developing a real world question, collecting data, analyzing and representing information on a bar graph.</li> <li>Collaborative completion of a 'Performance Task' applying prior knowledge on counting strategies and analyzing and representing data.</li> </ul>		



**KEY LEARNING EVENTS AND INSTRUCTION:**

- Count large groups of objects using patterns and strategies
- Count up, back, and skip count on a number line
- Use a number line to determine the value of a number
- Represent data in a tally chart
- Transfer data from tally chart into a bar graph
- Compare data by asking and answering questions
- 3 ACT Math online videos representing counting, graphing, and patterns
- Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT I: Counting and Collecting Data**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
6 Weeks	UNIT I: Counting and Collecting Data	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b></p> <p>(See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b></p> <p>1-1 Introducing <i>First Grade Everyday Mathematics</i></p> <p>1-2 Investing the Number Line</p> <p>1-4 Counting Strategies (Open Response)</p> <p>1-5 1 More, 1 Less</p> <p>1-6 Comparing Numbers</p> <p>1-7 Organizing Data in a Tally Chart</p> <p>1-8 More Organizing Data</p> <p>1-11 Counting Larger Number</p> <p>2-4 Exploring Subtraction, Pairs of Numbers that Add to 10, and Data</p> <p>4-5 Exploring Data, Shapes, and Base-10 Blocks (Exploration 1)</p> <p>4-6 Representing Data with a Bar Graph</p> <p>8-9 Review: Data</p> <p><b><u>Literary Resources</u></b></p> <p><i>The Water Hole</i> by Graeme Base</p>

		<p> <i>Color Zoo</i> by Lois Ehlert  <i>How Many Snails?: A Counting Book</i> by Paul Giganti  <i>Tally O'Malley</i> by Stuart Murphy  <i>Anno's Counting Book</i> by Mitsumassa  <i>Anno City by Numbers</i> by Stephen T. Johnson </p> <p> <b><u>Technology Resources</u></b>  Smart Exchange Lessons-  <a href="http://exchange.smarttech.com/#tab=0">http://exchange.smarttech.com/#tab=0</a>  BrainPop Jr. Lessons  <a href="https://jr.brainpop.com/search/?keyword=counting">https://jr.brainpop.com/search/?keyword=counting</a>  <a href="https://jr.brainpop.com/search/?keyword=estimating">https://jr.brainpop.com/search/?keyword=estimating</a>  <a href="https://jr.brainpop.com/search/?keyword=bar+graph">https://jr.brainpop.com/search/?keyword=bar+graph</a>  Interactive Counting Games  <a href="https://www.splashmath.com/counting-games-for-1st-graders">https://www.splashmath.com/counting-games-for-1st-graders</a>  <a href="http://www.adaptedmind.com/gradelist.php?grade=1">http://www.adaptedmind.com/gradelist.php?grade=1</a> </p> <p>3 ACT Math Video Resources</p>
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# RANDOLPH TOWNSHIP SCHOOL DISTRICT

## Math~ Grade 1

### UNIT II: Addition and Subtraction

<b>TRANSFER:</b> Solve real world problems by taking risks using math strategies		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S MATH</u></b></p> <p><b>1.OA.A.1</b> Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p><b>1.OA.A.2</b> Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p><b>1.OA.C.5</b> Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p><b><u>MATHEMATICAL PRACTICE</u></b></p> <p><b>MP.2</b> Reason abstractly and quantitatively  <b>MP.4</b> Model with mathematics  <b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to precision</p>	Versatile mathematical thinkers apply appropriate strategies to solve problems.	<ul style="list-style-type: none"> <li>How do we use math to solve problems in the real world?</li> </ul>
	Numbers can be counted and represented in various ways.	<ul style="list-style-type: none"> <li>How do we use math tools?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b></p> <p>Mathematical strategies help us solve problems efficiently.</p> <p>A counting strategy can be used to find the sum of two numbers.</p>	<p><b>Students will be able to:</b></p> <p>Determine the most effective method for solving problems.</p> <p>Locate and use appropriate math resources and materials independently.</p> <p>Collaborate with peers to generate and share ideas.</p> <p>Utilize strategies, including count on from the larger number, draw a picture to represent the problem, or use a number line or number grid.</p>

<p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from</p>	<p>Visual models, including diagrams can be used to solve number stories.</p> <p>Number lines and number grids can be used to solve and extend simple number stories.</p> <p>Visual models are helpful to use when completing algebraic problems and number patterns.</p> <p><b>KEY TERMS:</b> sum, difference, equal, diagram, part, total, change to more, change to less, frames, arrows</p>	<p>Organize and solve number stories in more than one way (i.e. change to more/less diagrams, parts-and-total boxes, drawings, frames and arrows, etc.).</p> <p>Count forward and backward from a given number to solve number stories.</p> <p>Hop between two numbers on a number line to determine the unknown number.</p> <p>Skip count (i.e. on a number line) to add, subtract and extend number patterns.</p> <p>Interpret a diagram in order to complete and extend number patterns.</p> <p>Explain and interpret diagrams through written expression.</p>
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everyday experiences.		
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**ASSESSMENT EVIDENCE: Students will show their learning by:**

- Solving real world problems using addition and subtraction.
- Solving word problems using addition and subtraction strategies.
- Selecting an effective method to complete an addition or subtraction problem and explaining reasoning.
- Individual completion of a ‘Performance Task’ applying prior knowledge of addition and subtraction strategies to solve real-world problems.

**KEY LEARNING EVENTS AND INSTRUCTION:**

- Draw a picture to represent a word problem or fill in a diagram
- Count forward and backward on the number line or number grid to solve addition and subtraction problems
- Count on from the larger number to determine the sum
- Represent a number story using a diagram
- Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT II: Addition and Subtraction**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
5 Weeks	UNIT II: Addition and Subtraction	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b>  (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>  1-10 Number Stories  2-6 More Counting on to Add  2-8 Change-to-More Number Stories  2-9 Change-to-Less Number Stories  2-10 Number Models  3-1 Parts-and-Total Number Stories  3-4 Birds on a Tree (Open Response)  3-6 Counting to Add and Subtract  3-7 More Counting to Add and Subtract  3-8 Skip Counting to Add and Subtract  3-9 Counting Application: Frames and Arrows  3-10 Addition and Subtraction Application: Frames and Arrows</p> <p><b><u>Literary Resources</u></b>  <i>Ten Apples Up On Top</i> by Theo LeSieg  <i>How Many Snails?: A Counting Book</i> by Paul Giganti</p>

		<p><i>Ten Black Dots</i> by Donald Crews</p> <p><b><u>Technology Resources</u></b></p> <p>BrainPop Jr.  <a href="https://jr.brainpop.com/search/?keyword=addition">https://jr.brainpop.com/search/?keyword=addition</a>  <a href="https://jr.brainpop.com/search/?keyword=subtraction">https://jr.brainpop.com/search/?keyword=subtraction</a></p> <p>Interactive Math Games:  <a href="https://www.mathgames.com/grade1">https://www.mathgames.com/grade1</a>  <a href="https://www.education.com/games/first-grade/math/">https://www.education.com/games/first-grade/math/</a>  <a href="https://www.splashmath.com/addition-games-for-1st-graders">https://www.splashmath.com/addition-games-for-1st-graders</a></p> <p>Interactive Number Line:  <a href="https://apps.mathlearningcenter.org/number-line/">https://apps.mathlearningcenter.org/number-line/</a>  <a href="https://www.funbrain.com/games/line-jumper">https://www.funbrain.com/games/line-jumper</a></p> <p>3 ACT Math Video Resources  <i>Search Ideas</i>-Gumballs, Counting Candy, Gummy Worms,  Gimme a Break</p>
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# RANDOLPH TOWNSHIP SCHOOL DISTRICT

## Math~ Grade 1

### UNIT III: Diving Deep into Addition

<b>TRANSFER:</b> Make sense of authentic problems and utilize connections and strategies to persevere in solving them.		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S</u></b> <b><u>MATH</u></b></p> <p><b>1.OA.B.3</b> Apply properties of operations as strategies to add and subtract.3 Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known. (Commutative property of addition.) To add <math>2 + 6 + 4</math>, the second two numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math>. (Associative property of addition.)</p> <p><b>1.OA.C.6</b> Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>); decomposing a number leading to a ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math>); using the relationship between addition and subtraction (e.g., knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>); and creating equivalent but easier or known sums (e.g., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math>).</p> <p><b>1.OA.D.8</b> Determine the unknown whole number in an addition or subtraction</p>	Problem solvers use efficient strategies to solve addition facts.	<ul style="list-style-type: none"> <li>How can we solve a problem in more than one way?</li> </ul>
	Mathematical thinkers are strategic.	<ul style="list-style-type: none"> <li>How do we solve problems using prior knowledge?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b> Addition involves adding to or putting together.</p> <p>Numbers can be decomposed.</p>	<p><b>Students will be able to:</b> Determine a total amount by adding on to a number.</p> <p>Solve problems as part-part-whole problems when joining or putting them together.</p> <p>Reason abstractly to solve word problems that call for addition of three whole numbers whose sum is less than 20.</p> <p>Explain what it means to decompose a number.</p> <p>Reason abstractly to provide strategies and examples of a decomposed number.</p>

<p>equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations <math>8 + ? = 11</math>, <math>5 = ? - 3</math>, <math>6 + 6 = ?</math></p> <p><b>1.OA.A.1</b> Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p><b>1.OA.A.2</b> Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b></p> <p><b>MP.1</b> Make sense of problems and persevere in solving them.  <b>MP.2</b> Reason abstractly and quantitatively  <b>MP.4</b> Model with mathematics  <b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to precision  <b>MP.7</b> Look for and make use of structures</p> <p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>Specific combinations of numbers add to 10.</p> <p>A ten frame is a tool that can be used to organize and determine the sum of two numbers.</p> <p>Applying the Commutative Property results in the same sum.</p> <p>There are many ways to solve and write number models for number stories.</p> <p>Combinations of ten and doubles will be useful when adding three numbers.</p> <p>An unknown represents a number that will make an equation true.</p> <p><b>KEY TERMS:</b>  decompose, turn around fact, double facts, addend, unknown</p>	<p>Decompose numbers that add to 10.</p> <p>Manipulate ten frames to represent sums.</p> <p>Recognize and write turn-around facts for addition.</p> <p>Explain the turn-around fact rule to another classmate.</p> <p>Examine and record addition facts, including combinations within 10 and doubles facts.</p> <p>Solve number stories with at least three addends.</p> <p>Explain how students' arrived at a solution through writing and sketching.</p> <p>Determine the best order in which to add three numbers.</p> <p>Look for numbers to combine in order to make sums of 10 when adding three or more numbers.</p> <p>Determine the value of the unknown addend that will make a value true.</p>
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<p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>		
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**ASSESSMENT EVIDENCE: Students will show their learning by:**

- Completing Authentic Open Response problems (i.e. checking whether answer makes sense, solving problems in more than one way, and comparing strategies used by others).
- Solve a real-world problem in multiple ways utilizing efficient mathematical strategies and explain why they selected the strategy used.
- Collaborative completion of a 'Performance Task' applying prior knowledge of addition strategies to solve real world problems.

**KEY LEARNING EVENTS AND INSTRUCTION:**

- Decomposing combinations of 10
- Utilizing 10s frames to solve number stories
- Applying properties of operations as strategies to add
- Understanding patterns help solve double facts
- Identifying double facts or combinations of ten when adding three numbers
- Explain the reasoning of the strategy selected when adding three numbers
- Use effective strategies to solve number models with an unknown value
- Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT III: Diving Deep into Addition**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
6 Weeks	UNIT III: Diving Deep into Addition	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b>  (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>  2-1 Introducing the Strategy Wall  2-2 Decomposing Numbers within 10  2-3 More Decomposing Numbers within 10  2-5 10 Apples (Open Response)  2-11 Finding Unknowns  4-7 Introducing Doubles  4-8 Combinations of 10  4-9 More Combinations of 10  4-10 Adding Three Numbers  6-4 Introducing Near Doubles  6-5 Recording Near-Double Strategies  6-6 Introducing Making 10  6-8 Pencils for the Writing Club</p> <p><b><u>Literary Resources</u></b>  <i>Twelve Ways to Get to 11</i> by Eve Merriam  <i>Two Ways to Count to 10</i> by Ruby Dee</p>

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT IV: Relationships Between Addition and Subtraction**

<b>TRANSFER:</b> Reason abstractly with the relationships between various operations to efficiently solve mathematical problems.		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S MATH</u></b></p> <p><b>1.OA.B.4</b> Understand subtraction as an unknown-addend problem. For example, subtract <math>10 - 8</math> by finding the number that makes 10 when added to 8.</p> <p><b>1.OA.D.7</b> Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2 + 5</math>, <math>4 + 1 = 5 + 2</math>.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b></p> <p><b>MP.1</b> Make sense of problems and persevere in solving them.  <b>MP.2</b> Reason abstractly and quantitatively  <b>MP.4</b> Model with Mathematics  <b>MP.6</b> Attend to precision  <b>MP.8</b> Look for and express regularity in repeated reasoning</p> <p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent</p>	Operations create relationships between numbers.	<ul style="list-style-type: none"> <li>How do we know when to add or subtract?</li> </ul>
	There is a relationship between addition and subtraction in a fact family.	<ul style="list-style-type: none"> <li>How are fact families useful?</li> </ul>
	Numbers have equivalent names.	<ul style="list-style-type: none"> <li>How can we show numbers in different ways?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b>  The equal sign represents two sides that are balanced and have equivalent expressions on each side.</p> <p>A difference can be found with both subtraction and addition.</p> <p>Numbers can be represented in a variety of ways.</p>	<p><b>Students will be able to:</b>  Determine if an equation is true or false.</p> <p>Relate three numbers to each other with the use of an equation.</p> <p>Utilize a variety of strategies to subtract, including: comparison diagram, manipulatives, number grids, number lines and counting.</p> <p>Model multiple ways of decomposing and constructing a common number.</p>

<p>writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>	<p>An unknown represents a number that will make an equation true.</p> <p>Properties of operation are used as strategies for solving addition and subtraction problems.</p> <p>The turn-around fact rule can be used to generate fact families.</p> <p>There are numerous ways to solve subtraction facts.</p> <p>The relationship between addition and subtraction can be utilized to determine if a number sentence is true.</p> <p>Strategies are used to help solve mathematical problems.</p> <p><b>KEY TERMS:</b> equivalence, fact family, equal sign</p>	<p>Determine the value of the unknown that makes a value true.</p> <p>Apply properties of operation to solve problems involving addition and subtraction.</p> <p>Compose name collection boxes for any given number.</p> <p>Manipulate fact triangles to create fact families.</p> <p>Determine if equations involving addition and subtraction are true or false.</p> <p>Solve subtraction facts by using think addition, counting up, counting back, and fact triangles.</p> <p>Determine the operation and unknown whole number needed to solve an addition or subtraction equation.</p>
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**ASSESSMENT EVIDENCE: Students will show their learning by:**

- Create a fact family representing the relationship between three numbers.
- Understand the relationship between addition and subtraction to build fact fluency.
- Representing quantities in multiple ways to show equivalent names for a number.
- Individual completion of a 'Performance Task' applying prior knowledge of addition and subtraction relationship strategies to solve real-world problems.

**KEY LEARNING EVENTS AND INSTRUCTION:**

- Create a visual representation of a fact family
- Utilize a variety of strategies to solve subtraction and addition number models
- Identify true and false number sentences using the equal sign
- Compose equivalent names for any given number
- Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)



**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT IV: Relationships Between Addition and Subtraction**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
5 Weeks	UNIT IV: Relationships Between Addition and Subtraction	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b> (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>            3-2 Number Story Strategies            5-5 The Equal Sign            6-3 Exploring True and False, Doubles, and Shapes            6-9 Understanding Equivalence            7-1 Fact Families            7-2 More Fact Families            7-3 Relating Special Addition and Subtraction Facts            7-4 More Subtraction Fact Strategies            7-8 Finding Unknowns: “What’s My Rule?”            7-10 Addition Facts: “What’s My Rule?”</p> <p><b><u>Technology Resources</u></b>            3 ACT Math Video Resources            Supplemental Online Resources-Safari Montage, BrainPop Jr, Smart Exchange, Youtube            Name collection box ideas-  <a href="https://www.pinterest.com/dbutterw/name-collection-boxes/">https://www.pinterest.com/dbutterw/name-collection-boxes/</a>            Turn Around Facts Song-  <a href="https://www.youtube.com/watch?v=fftIIJuSyDY">https://www.youtube.com/watch?v=fftIIJuSyDY</a></p>

# RANDOLPH TOWNSHIP SCHOOL DISTRICT

## Math~ Grade 1

### UNIT V: Understanding Place Value

<b>TRANSFER:</b> Look for regularity in problem structures when solving an authentic mathematical task.		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S MATH</u></b></p> <p><b>1.NBT.B.2</b> Understand that the two digits of a two-digit number represent amounts of tens and ones.</p> <p><b>1.NBT.B.3</b> Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b></p> <p><b>MP.1</b> Make sense of problems and persevere in solving them.  <b>MP.2</b> Reason abstractly and quantitatively  <b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to precision</p> <p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate</p>	The place of a digit in a number tells how much the digit is worth.	<ul style="list-style-type: none"> <li>What is place value?</li> </ul>
	Numbers have values that can be compared.	<ul style="list-style-type: none"> <li>How do we compare numbers?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b></p> <p>Ones are represented by digits 1-9, 11-19 are compositions of ones and 10's.</p> <p>In a two-digit number there is a ones place and a tens place.</p> <p>Ten ones are equal to one ten and vice versa.</p> <p>Two-digit numbers can be represented by base-10 blocks.</p>	<p><b>Students will be able to:</b></p> <p>Identify ten as ten ones bundle.</p> <p>Regroup ones in the tens place when quantity exceeds 9.</p> <p>Identify place value in a two-digit number.</p> <p>Exchange pennies for dimes or cubes for longs.</p> <p>Compose two-digit number by using base-10 blocks.</p>

<p>effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>	<p>Two-digit numbers can be compared based on meanings of the tens and ones digits.</p> <p>Comparison symbols are used to compare numbers.</p> <p>To compare two numbers, one must compare the digits in each place starting with the ones place.</p> <p><b>KEY TERMS:</b> digit, comparison, greater than, less than, ones, tens, base-ten blocks, place value, ones place, tens place</p>	<p>Construct a two-digit numbers with a visual representation, when decomposing two-digit numbers.</p> <p>Understand the value of each digit to make comparisons.</p> <p>Attend to precision by using the <math>&lt;</math>, <math>&gt;</math> and <math>=</math> symbols.</p> <p>Use clear explanations in discussions with others when comparing numbers.</p> <p>Compare two-two digit numbers using <math>&gt;</math>, <math>&lt;</math>, and <math>=</math>.</p>
<p><b>ASSESSMENT EVIDENCE: Students will show their learning by:</b></p> <ul style="list-style-type: none"> <li>• Making exchanges between place value when representing amounts of tens and ones.</li> <li>• Comparing two -two-digit numbers using comparison symbols.</li> <li>• Representing and explaining the values of a two-digit number using base 10 blocks, words, or pictures.</li> <li>• Collaborative completion of a 'Performance Task' applying prior knowledge of place value to solve real world problems.</li> </ul>		

**KEY LEARNING EVENTS AND INSTRUCTION:**

- Build numbers using base ten blocks
- Represent amounts of tens and ones using exchanges when appropriate
- Compare numbers using comparison symbols
- Understand the value of digit in larger number (two-digit numbers)
- Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT V: Understanding Place Value**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
5 Weeks	UNIT V: Understanding Place Value	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b>  (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>  5-1 Introducing Place Value  5-2 Digits and Place Value  5-3 Place-Value Application: Pennies and Dimes  5-4 Greater Than, Less Than, and Equal To  6-10 More Place Value  6-11 Place-Value Application: Pennies, Dimes, and Dollars  9-8 Review: Relations and Equivalence  9-9 Review: Place Value</p> <p><b><u>Literary Resources</u></b>  <i>The Warlord's Beads</i> by Virginia Walton Pilegard  <i>Just Enough Carrots</i> by Stuart Murphy  <i>Alfie the Alligator: A Teaching Rhyme About Comparing Numbers</i> by Sandy Turley</p> <p><b><u>Technology Resources</u></b>  BrainPop Jr.</p>

		<a href="https://jr.brainpop.com/math/numbersense/placevalue/">https://jr.brainpop.com/math/numbersense/placevalue/</a> Place Value Songs: <a href="https://www.youtube.com/watch?v=a4FXl4zb3E4&amp;v=1F3AycEDksY">https://www.youtube.com/watch?v=a4FXl4zb3E4&amp;v=1F3AycEDksY</a> <a href="https://www.youtube.com/watch?v=1F3AycEDksY">https://www.youtube.com/watch?v=1F3AycEDksY</a> <a href="https://www.youtube.com/watch?v=21l3Jg5_MCg">https://www.youtube.com/watch?v=21l3Jg5_MCg</a> Interactive Place Value Games: <a href="http://interactivesites.weebly.com/place-value.html">http://interactivesites.weebly.com/place-value.html</a> <a href="http://www.abcya.com/place_value_hockey.htm">http://www.abcya.com/place_value_hockey.htm</a> <a href="https://www.topmarks.co.uk/interactive.aspx?cat=21">https://www.topmarks.co.uk/interactive.aspx?cat=21</a>
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**RANDOLPH TOWNSHIP SCHOOL DISTRICT**

**Math~ Grade 1**

**UNIT VI: Measurement and Time**

<b>TRANSFER:</b> Use accuracy when measuring objects or time.		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S MATH</u></b></p> <p><b>1.MD.A.1</b> Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p><b>1.MD.A.2</b> Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.</p> <p><b>1.MD.B.3</b> Tell and write time in hours and half-hours using analog and digital clocks.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b></p> <p><b>MP.3</b> Construct viable arguments and critique the reasoning of others  <b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to Precision</p> <p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and</p>	Measurement describes the attributes of objects.	<ul style="list-style-type: none"> <li>Why do we measure?</li> </ul>
	Telling time is an essential life skill.	<ul style="list-style-type: none"> <li>How do you tell time?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b></p> <p>There are various tools that can be used to measure objects (i.e. ruler pencil, paper clips).</p> <p>Proper measuring techniques must be used to measure an object with accuracy.</p> <p>Objects vary in length.</p>	<p><b>Students will be able to:</b></p> <p>Explore and measure with standard and non-standard units of measure.</p> <p>Recognize and explain why it is important to use standardized units of measurement through sketching, writing, or speaking.</p> <p>Measure objects in a straight line end-to-end, no gaps or overlaps, and using the same unit of measurement.</p> <p>Order and compare the lengths of various objects.</p> <p>Collaborate with peers to discuss and reason with length and measurement</p>

<p>style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>	<p>Analog clocks can be used to tell time.</p> <p>An analog clock has both an hour and minute hand to show time to the hour.</p> <p><b>KEY TERMS:</b> measure, length, height, width, compare, time, analog clock, face, hands</p>	<p>Identify the parts of an analog clock.</p> <p>Tell and write time to the hour on an analog clock.</p> <p>Attend to precision when determining time to the hour on an analog clock.</p> <p>Reason abstractly in developing and solving number stories.</p>
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**ASSESSMENT EVIDENCE: Students will show their learning by:**

- Measuring the length of an object with accuracy using a nonstandard unit of measurement following measurement rules (i.e.. no gaps, no overlaps, end to end, use same unit to measure, straight line).
- Attending to precision when telling time to the hour and half hour on digital and analog clocks.
- Individual completion of a 'Performance Task' applying prior knowledge of measurement and time to solve real-world problems.

**KEY LEARNING EVENTS AND INSTRUCTION:**

- Order lengths of objects from shortest to longest
- Use nontraditional and standard units of measurement to measure a variety of objects
- Identify time to the hour and half hour on an Analog Clock
- Write time to the hour and half hour in Digital Format
- Participate in number talks and math discussions around topics of number sense, measurement and time (i.e.- teacher facilitated, small group discussions, student led, etc.)

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT VI: Measurement and Time**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
3 Weeks	UNIT VI: Measurement and Time	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b>  (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>  4-1 Introducing Length Measurement  4-2 Measuring Length  4-3 More Length Measurement  4-4 Measuring a Maker (Open Response)  5-7 Measuring a Path  6-1 Time and the Hour-Hand-Only Clock  7-11 Digital Clocks  8-8 Time to the Half Hour  9-1 Review: Measurement</p> <p><b><u>Literary Resources</u></b>  <i>Double the Ducks</i> by Stuart Murphy  <i>Big, Better, Best</i> by Stuart Murphy  <i>How Big is a Foot?</i> by Rolf Myller  <i>Big Dog, Little Dog</i> by P.D. Eastman  <i>Me and the Measure of Things</i> by Joan Sweeney</p>

		<p><b><u>Technology Resources</u></b></p> <p>BrainPop Jr: Measurement and Time  <a href="https://jr.brainpop.com/math/measurement/">https://jr.brainpop.com/math/measurement/</a>  <a href="https://jr.brainpop.com/search/?keyword=time">https://jr.brainpop.com/search/?keyword=time</a></p> <p>Measurement Songs:  <a href="https://www.education.com/game/measuring-nonstandard-units/">https://www.education.com/game/measuring-nonstandard-units/</a>  <a href="https://luckylittlelearners.com/2017/01/videos-that-teach-kids-measurement.html">https://luckylittlelearners.com/2017/01/videos-that-teach-kids-measurement.html</a></p> <p>Interactive Measurement Games  <a href="https://www.education.com/games/measurement/">https://www.education.com/games/measurement/</a>  <a href="https://www.splashmath.com/measurement-games-for-1st-graders">https://www.splashmath.com/measurement-games-for-1st-graders</a></p>
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**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT VII: Geometry**

<b>TRANSFER:</b> Construct, model, and describe objects in the environment as geometric shapes.		
<b>STANDARDS / GOALS:</b>	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
<p><b><u>NJSLS-S MATH</u></b></p> <p><b>1.G.A.1</b> Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.</p> <p><b>1.G.A.2</b> Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.</p> <p><b>1.G.A.3</b> Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b></p>	The world is made up of shapes that we interact with every day.	<ul style="list-style-type: none"> <li>How do we use shapes?</li> </ul>
	Attributes can be used to categorize and sort.	<ul style="list-style-type: none"> <li>How can we describe or categorize shapes?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<p><b>Students will know:</b></p> <p>Dimensional shapes have defining attributes.</p> <p>Shapes can be partitioned into shares.</p>	<p><b>Students will be able to:</b></p> <p>Identify and create two- and three-dimensional shapes.</p> <p>Compare and contrast two- and three-dimensional shapes.</p> <p>Describe the defining attributes using key vocabulary terms.</p> <p>Draw shapes to possess defining attributes.</p> <p>Divide shapes into equal shares.</p>

<p><b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to precision  <b>MP.7</b> Look for and make use of structure</p> <p><b><u>ELA</u></b></p> <p><b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p> <p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p>	<p>Equal shares of a shape have names.</p> <p>Shapes can be sorted by their defining and non-defining attributes.</p> <p>New shapes can be composed from putting two or more shapes together.</p> <p><b>KEY TERMS:</b>  defining attributes, nondefining attributes, two-dimensional shapes, three-dimensional shapes, equal shares, half, halves, quarter, fourths, polygon, vertices</p>	<p>Describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>.</p> <p>Describe the whole as the number of shares (two of, or four of).</p> <p>Decompose shapes.</p> <p>Identify, construct and describe polygons.</p> <p>Distinguish sides and corners to identify the shapes.</p> <p>Compose two-dimensional shapes with two or more shapes (rectangle, square, trapezoids, triangles, half-circles, and quarter circles) to create composite shape.</p> <p>Compose a three-dimensional shape with two or more shapes (cube, right rectangular prisms, right circular cones, and right circular cylinders) to create composite shapes.</p>
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<p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>		
<p><b>ASSESSMENT EVIDENCE: Students will show their learning by:</b></p> <ul style="list-style-type: none"> <li>● Distinguish between defining attributes of a shape.</li> <li>● Identify the difference between a defining vs. non-defining attributes of two and three dimensional shapes.</li> <li>● Construct arguments, reason, and justify why a particular shape is or isn't that shape (i.e. "It can't be a square because, even though it has 4 sides and 4 corners the sides are not all the same length.").</li> <li>● Dividing shapes into two and four equal shares and describe the shares using words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>.</li> <li>● Collaborative completion of a 'Performance Task' applying prior knowledge of geometric attributes to solve real world problems.</li> </ul> <p><b>KEY LEARNING EVENTS AND INSTRUCTION:</b></p> <ul style="list-style-type: none"> <li>● Sort shapes based on similar attributes (color, shape, size)</li> <li>● Identify attributes using vocabulary terms such as sides, vertices, and closed vs. open</li> <li>● Decompose a two dimensional shape and create a new polygon</li> <li>● Use pattern blocks to create new composite shapes</li> <li>● Partition shapes into two or four equal shares</li> <li>● Name the equal shares using vocabulary terms (i.e, halves, quarters, fourths, one out of four, one out of two, etc.)</li> <li>● Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)</li> <li>● Look for and make use of structures when utilizing addition and subtraction strategies to solve real-world problems</li> </ul>		

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT VII: Geometry**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
4 Weeks	UNIT VII: Geometry	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b>  (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>  7-5 Attributes of Shapes  7-7 Exploring Attributes, Frames, and <i>Salute!</i>  8-1 Building Shapes with Defining Attributes  8-2 Halves  8-5 Combing 2-Dimensional Shapes  8-6 3-Dimensional Shapes  8-7 Exploring Composition of Shapes and Addition Fact Strategies  9-10 Review: 3-Dimensional Geometry  9-11 Review: Equal Shares</p> <p><b><u>Literary Resources</u></b>  <i>Round is a Mooncake</i> by Roseanne Thong  <i>Rabbit and Hare Divide an Apple</i> by Harriet Ziefert  <i>The Little Mouse, The Red Ripe Strawberry and the Big Hungry Bear</i> by Don and Audrey Wood  <i>Picture Pie: A Circle Drawing Book</i> by Ed Emberly</p>

		<p><b><u>Technology Resources</u></b></p> <p>BrainPop Jr.  <a href="https://jr.brainpop.com/search/?keyword=geometry">https://jr.brainpop.com/search/?keyword=geometry</a>  Interactive Geometry Games:  <a href="https://www.turtlediary.com/games/geometry.html">https://www.turtlediary.com/games/geometry.html</a>  <a href="http://interactivesites.weebly.com/geometry.html">http://interactivesites.weebly.com/geometry.html</a>  <a href="https://www.splashmath.com/geometry-games">https://www.splashmath.com/geometry-games</a>  3 ACT Math Online video resources- Geometry</p>
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**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT VIII: Double Digit Addition and Subtraction**

<b>TRANSFER:</b> Solve higher level mathematical problems in everyday life.		
<b>STANDARDS / GOALS:</b>  <u><b>NJSLS-S</b></u> <u><b>MATH</b></u>  <b>1.NBT.C.4</b> Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.  <b>1.NBT.C.5</b> Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.  <b>1.NBT.C.6</b> Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties	<b>ENDURING UNDERSTANDINGS</b>	<b>ESSENTIAL QUESTIONS</b>
	Tools are used to add and subtract double digit numbers.	<ul style="list-style-type: none"> <li>• How can you add or subtract larger numbers?</li> </ul>
	Math strategies can be used to solve addition and subtractions problems.	<ul style="list-style-type: none"> <li>• Why is important to solve problems in different ways?</li> </ul>
	<b>KNOWLEDGE</b>	<b>SKILLS</b>
	<b>Students will know:</b> Strategies can be used to add or subtract.	<b>Students will be able to:</b> Tell and solve number stories involving two-digit numbers.  Collaborate with peers to discuss and reason with addition and subtraction  Apply a variety of strategies to add and subtract two-digit numbers.  Explain the process of arriving at a solution to a two-digit addition or subtractions problem.

<p>of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p><b><u>MATHEMATICAL PRACTICE</u></b>  <b>MP.1</b> Make sense of problems and persevere in solving them  <b>MP.2</b> Reason abstractly and quantitatively  <b>MP.5</b> Use appropriate tools strategically  <b>MP.6</b> Attend to precision  <b>MP.8</b> Look for and express regularity in repeated reasoning</p> <p><b><u>ELA</u></b>  <b>NJSLSA.W4.</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p><b>NJSLSA.SL1.</b> Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</p> <p><b>NJSLSA.SL3.</b> Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</p> <p><b>NJSLSA.SL4.</b> Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p>	<p>Concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction can help solve problems.</p> <p>Understanding place value and properties of operations are used to add and subtract.</p> <p>Moving up and down a number grid represents the addition and subtraction pattern of 10.</p> <p>When subtracting multiples of 10 from multiples of 10, one subtracts them from tens and knows that 0 remains in the ones place.</p> <p>When subtracting 10 from a two-digit number the tens place decreases by 1 and the ones place remains the same.</p> <p>Appropriate tools can be used strategically when solving double digit equations.</p>	<p>Analyze givens, constraints, relationships, and goals to make sense of the problem and persevere in solving them.</p> <p>Represent problems in multiple ways including words, drawing pictures, object, and lists.</p> <p>Look for and make use of</p> <p>Utilize a number grid to add and subtract multiples of 10.</p> <p>Notice patterns on a number grid to support growth of mental math in everyday situations.</p> <p>Subtract multiples of 10 in the range of 10-90.</p> <p>Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.</p> <p>Demonstrate an understanding of place value to find patterns on a number grid.</p> <p>Determine what tool or strategy is best when solving and making sense of a problem.</p>
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<p><b><u>TECHNOLOGY</u></b></p> <p><b>8.1.2.A.4</b> Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).</p> <p><b>8.1.2.E.1</b> Use digital tools and online resources to explore a problem or issue.</p> <p><b>8.2.2.B.1</b> Identify how technology impacts or improves life.</p> <p><b>8.2.2.D.1</b> Collaborate and apply a design process to solve a simple problem from everyday experiences.</p>	<p><b>KEY TERMS:</b> double digit, addition, subtraction, patterns, tools, number grid, place value</p>	
<p><b>ASSESSMENT EVIDENCE: Students will show their learning by:</b></p> <ul style="list-style-type: none"> <li>● Calculating addition and subtraction problems involving two-digit numbers.</li> <li>● Use a mathematical tool to solve a two-digit math equation and explain reasoning.</li> <li>● Individual completion of a ‘Performance Task’ applying prior knowledge of two-digit addition and subtraction strategies to solve real-world problems.</li> </ul> <p><b>KEY LEARNING EVENTS AND INSTRUCTION:</b></p> <ul style="list-style-type: none"> <li>● Adding and subtracting two digit numbers using tools (i.e. number grid, base 10 blocks, manipulatives)</li> <li>● Incorporating authentic learning tasks or problems to apply double digit math strategies (i.e. school store, carnival, etc)</li> <li>● Relate strategies to a written method</li> <li>● Explain the reasoning behind a given strategy</li> <li>● Construct the reasoning behind the strategies of others</li> <li>● Participate in number talks and math discussions (i.e.- teacher facilitated, small group discussions, student led, etc.)</li> </ul>		

**RANDOLPH TOWNSHIP SCHOOL DISTRICT**  
**Math~ Grade 1**  
**UNIT VIII: Double Digit Addition and Subtraction**

SUGGESTED TIME ALLOTMENT	CONTENT-UNIT OF STUDY	SUPPLEMENTAL UNIT RESOURCES
4 Weeks	UNIT VIII: Double Digit Addition and Subtraction	<p><b><u>Suggested Resources</u></b></p> <p><b><u>Performance Task</u></b> (See Appendix A)</p> <p><b><u>Everyday Math Lessons</u></b>  4-11 10 More, 10 Less  5-11 Adding and Subtracting 2-Digit Numbers  5-12 Adding Animal Weights (Open Response)  6-2 More 2-Digit Number Stories  8-10 Number-Grid Puzzles  8-11 Mentally Finding 10 More and 10 Less  9-2 Two-Digit Number Stories  9-3 Shopping at the School Store (Open Response)  9-5 Vending Machine Addition and Subtraction  9-6 Two-Digit Comparison Number subtraction  9-7 Efficient Strategies for 2-Digit Addition and Subtraction</p> <p><b><u>Literary Resources</u></b>  <i>The Coin Counting Book</i> by Suzanne Williams Alexander,  <i>Who Used To Be Rich Last Sunday</i> by Judith Viorst</p> <p><b><u>Technology Resources</u></b></p>

		<p>Interactive Online Number Grids:</p> <p><a href="http://www.abcy.com/interactive_100_number_chart.htm">http://www.abcy.com/interactive_100_number_chart.htm</a></p> <p><a href="https://www.mathplayground.com/interactive_hundreds_chart.html">https://www.mathplayground.com/interactive_hundreds_chart.html</a></p> <p><a href="https://nj.pbslearningmedia.org/resource/cb245eb1-c825-4a29-9e99-5d9a516d60e5/hundreds-chart-interactive-smart-board-activity/#.W2Ci8NJKiUk">https://nj.pbslearningmedia.org/resource/cb245eb1-c825-4a29-9e99-5d9a516d60e5/hundreds-chart-interactive-smart-board-activity/#.W2Ci8NJKiUk</a></p> <p>Interactive 2 Digit Math Games</p> <p><a href="https://www.education.com/game/2digit-addition-gameshow/">https://www.education.com/game/2digit-addition-gameshow/</a></p> <p><a href="https://www.mathplayground.com/index_addition_subtraction.html">https://www.mathplayground.com/index_addition_subtraction.html</a></p> <p>3 ACT Math Online video resources- Addition/Subtraction</p>
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## APPENDIX A: Performance Assessment

### A. TEACHER RESOURCE- SAMPLE



#### Randolph Township Schools

##### Performance Based Task

Grade: 1

Content Area: Counting/Data

Unit 1: **Counting and Collecting Data**

GROUP(OR)PARTNERSHIP

What is assessed?	This task challenges a student to use knowledge of [...]
New Jersey Student Learning Standards	<p>[SAMPLE]</p> <p><b>1.NBT.A.1</b> Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p><b>1.MD.C.4</b> Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>
Mathematical Practice Standards	<p>[SAMPLE]</p> <ul style="list-style-type: none"><li>• <b>MP.5 Use appropriate tools strategically.</b> Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.</li><li>• <b>MP.6 Attend to precision.</b> Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the</li></ul>

	problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.																																							
Total Points	<p><b>[SAMPLE]</b>  Total Points in Content Standards: 10  Total Points in Practice Standards: 4</p> <table> <tr> <th>ITEMS</th><th>POINTS Content</th><th>POINTS Practice</th><th>ITEM ASSESSED</th></tr> <tr> <td>1A</td><td>1</td><td></td><td> <ul style="list-style-type: none"> <li>Accurately counted 25 seeds.</li> </ul> </td></tr> <tr> <td rowspan="2">1B</td><td>1</td><td></td><td> <ul style="list-style-type: none"> <li>Illustrate counting strategy using words, pictures, etc.</li> </ul> </td></tr> <tr> <td></td><td>1</td><td> <ul style="list-style-type: none"> <li>Explain your mathematical thinking clearly and precisely.</li> </ul> </td></tr> <tr> <td>1C</td><td></td><td>1</td><td> <ul style="list-style-type: none"> <li>Collaborate with peer</li> </ul> </td></tr> <tr> <td rowspan="2">2A</td><td>3</td><td></td><td> <ul style="list-style-type: none"> <li>Represent data using tally marks in a tally chart.  3pts = w marks in 3 columns  2pts= w marks in 2 columns  1pt= wr marks in 1 column</li> </ul> </td></tr> <tr> <td></td><td>1</td><td> <ul style="list-style-type: none"> <li>Used the information to accurately complete a tally chart</li> </ul> </td></tr> <tr> <td rowspan="2">2B</td><td>3</td><td></td><td> <ul style="list-style-type: none"> <li>Organize data into categories and represent using a bar graph.  3pts = re columns  2pts= re columns  1pt= represented tally chart data in one column.</li> </ul> </td></tr> <tr> <td></td><td>1</td><td> <ul style="list-style-type: none"> <li>Used the information to accurately complete a bar graph</li> </ul> </td></tr> <tr> <td>2C</td><td>2</td><td></td><td> <ul style="list-style-type: none"> <li></li> </ul> </td></tr> </table>			ITEMS	POINTS Content	POINTS Practice	ITEM ASSESSED	1A	1		<ul style="list-style-type: none"> <li>Accurately counted 25 seeds.</li> </ul>	1B	1		<ul style="list-style-type: none"> <li>Illustrate counting strategy using words, pictures, etc.</li> </ul>		1	<ul style="list-style-type: none"> <li>Explain your mathematical thinking clearly and precisely.</li> </ul>	1C		1	<ul style="list-style-type: none"> <li>Collaborate with peer</li> </ul>	2A	3		<ul style="list-style-type: none"> <li>Represent data using tally marks in a tally chart.  3pts = w marks in 3 columns  2pts= w marks in 2 columns  1pt= wr marks in 1 column</li> </ul>		1	<ul style="list-style-type: none"> <li>Used the information to accurately complete a tally chart</li> </ul>	2B	3		<ul style="list-style-type: none"> <li>Organize data into categories and represent using a bar graph.  3pts = re columns  2pts= re columns  1pt= represented tally chart data in one column.</li> </ul>		1	<ul style="list-style-type: none"> <li>Used the information to accurately complete a bar graph</li> </ul>	2C	2		<ul style="list-style-type: none"> <li></li> </ul>
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	<table><tr><td><b>TOTAL</b></td><td>10</td><td>4</td><td></td></tr></table>	<b>TOTAL</b>	10	4	
<b>TOTAL</b>	10	4			
Performance Task:	<p><b>Scenario:</b> [Define Scenario Here]</p> <p><b>Supplies Needed:</b> Performance Task Sheet (Optional- use actual pumpkin seeds in groups after carving a pumpkin.)</p> <p><b>Expectations:</b> The students will be able to count a group of objects using a counting strategy. (Examples: Count by 1s, 2s, 5s, 10s, make tallies , make two groups and combine the groups, Cross out or circle objects) The students will be able to collect data and organize information through tally marks and charts. They will analyze, express, and clarify data in a bar graph.</p> <p><b>Notes/Potential Difficulties:</b> Partner students in groups of 2-3, you may consider grouping based on homogenous or heterogenous skill level. Students may need small group support for directions to be read aloud. If time allows follow up with students who may need you to write down their oral explanation. After completion of activity bring class together to facilitate a conversation around strategies used to find the total number of seeds.</p> <p><b>Whole Class Discussion:</b> <i>Before activity Discussion</i></p> <ul style="list-style-type: none"><li>• Have you ever gone pumpkin picking?</li><li>• How many of you have carved a pumpkin?</li><li>• What is inside the pumpkin?</li><li>• How many of you have seen pumpkin seeds?</li><li>• How can you find out how many seeds are in a pumpkin?<ul style="list-style-type: none"><li>○ Use this question to see if students know there can be a large or small amount of seeds in a pumpkin.</li><li>○ The teacher will guide this discussion towards the idea of counting the amount of pumpkin seeds scooped out of a pumpkin. The teacher can even build on the interest of the students in the room by carving a real pumpkin and letting students scoop out the seeds and count them..</li></ul></li></ul> <p><i>After activity:</i></p> <ul style="list-style-type: none"><li>• How did you count the pumpkin seeds?</li><li>• Did you and your partner use the same counting strategy?</li><li>• What strategy can you use if you want to count the seeds the fastest?</li><li>• How did you organize your information in a bar graph?</li><li>• How did you use the information in the bar graph to answer the questions?</li></ul>				



B. STUDENT ASSESSMENT AND COVER PAGE – SAMPLE TEMPLATE



**Randolph Township Schools**  
Performance Based Task

Grade: [SAMPLE]  
Content Area: Counting/Data  
Unit 1: Counting and Collecting Data  
GROUP(OR)PARTNERSHIP

Total  
Points

Total Points in Content Standards: 10  
Total Points in Practice Standards: 4

ITEMS	POINTS Content	POINTS Practice	ITEM ASSESSED
<b>1A</b>	1		• Accur
<b>1B</b>	1		• U
		1	• Explain
<b>1C</b>		1	• Provide ac re
<b>2A</b>	3		• Repr
		1	• Model rea
<b>2B</b>	3		• Organi
		1	• Model rea
<b>2C</b>	2		• Interpre
<b>TOTAL</b>	10	4	

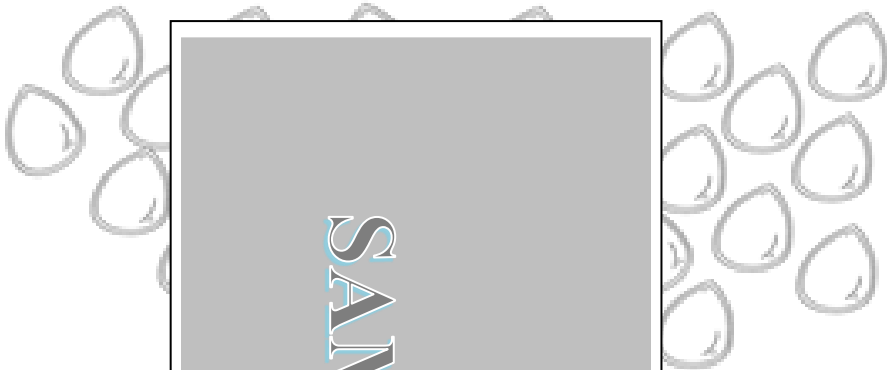
SAMPLE  
TEMPLATE

Performance Task  
Grade 1: **Counting and Collecting Data**

NAME: \_\_\_\_\_

Scenario:

Pumpkin Patch



**1A.** Jill just got a pumpkin. It's time to carve it. First she scoops out all the seeds. She says, "How many seeds are in this pumpkin?" How many seeds are in her pumpkin? Count the seeds. How many seeds are there?

\_\_\_\_\_ seeds

**1B.** Explain how you solved the problem.

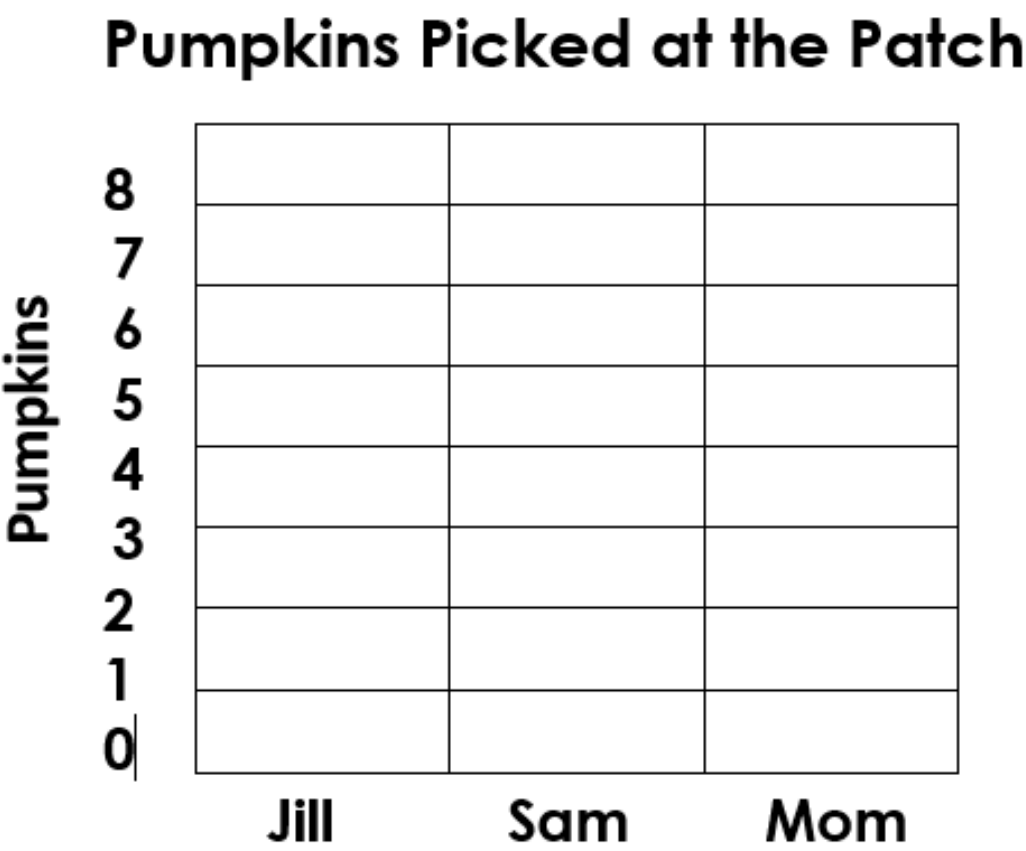
**1C.** Explain to your partner/group how you counted.

**2A.** At the pumpkin patch, Sam picked 4 pumpkins, Mom picked 5 pumpkins, and Jill picked 8. Fill in the tally chart showing how many pumpkins they each picked.

**Pumpkins Picked at the Patch**

<b>Name</b>	<b>Number of Pumpkins</b>
Jill	
Sam	
Mom	

2B. Use the information in the tally chart to complete the bar graph.



2C. Use the information in the bar graph to answer the following questions

Who picked the most pumpkins?

\_\_\_\_\_

How many more pumpkins did Jill pick than Sam?

\_\_\_\_\_ pumpkins