# Sayreville Public Schools Curriculum 

Second Grade Mathematics

## Second Grade Math

## Required

Elementary Schools
Full Year

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# Sayreville Public Schools Curriculum <br> Second Grade Mathematics 

## Table of Contents:

Statement of Purpose ..... 3
Unit 1: Understanding Addition and Subtraction ..... 4
Unit 2: Addition and Subtraction Strategies ..... 9
Unit 3: Working With Equal Groups ..... 15
Unit 4: Place Value to 100 ..... 19
Unit 5: Mental Addition and Subtraction ..... 25
Unit 6: Addition and Subtraction of Two-Digit Numbers ..... 31
Unit 7: Place Value to 1,000 . ..... 37
Unit 8: Addition and Subtraction of Three-Digit Numbers ..... 43
Unit 9: Money ..... 48
Unit 10: Time, Data, and Graphing ..... 53
Unit 11: Geometry ..... 57
Unit 12: Measurement ..... 62

# Sayreville Public Schools Curriculum <br> Second Grade Mathematics 

## Statement of Purpose

Summary of the Course: This Second Grade Math Curriculum will develop conceptual understanding, procedural knowledge, and problem solving skills as the students become proficient in the areas of: Operations and Algebraic Thinking, Numbers and Operations in Base Ten, Measurement and Data, and Geometry. The curriculum engages learning with 21st Century Skills, and connects to the appropriate grade-level New Jersey Student Learning Standards. Each unit includes suggestions for instructional activities and formative assessments, as well as a culminating project which integrates math with the other content areas.

In order to demonstrate a cohesive and complete implementation plan the following general suggestions are provided:

- The use of various formative assessments is encouraged in order to provide an ongoing method of determining the current level of understanding the students have of the material presented.
- Homework, when assigned should be relevant and reflective of the current teaching taking place in the classroom.
- Organizational strategies should be in place that allow the students the ability to take the information gained in the classroom and put it in terms that are relevant to them.
- Instruction should be differentiated to allow students the best opportunity to learn.
- Assessments should be varied and assess topics of instruction delivered in class.
- Modifications to the curriculum should be included that address students with Individualized Educational Plans (IEP), English Language Learners (ELL), and those requiring other modifications ( 504 plans).


## Unit 1: Understanding Addition and Subtraction

Summary of the Unit: In this unit, students will be taught the skills necessary for a strong mathematical foundation. They will learn that addition and subtraction are related, and that addition refers to the whole in terms of its parts, while subtraction talks about a missing part. Part-part-whole models will be used to help visualize this relationship. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope for this unit is 13 days.

## Enduring Understanding:

$\lceil$ Parts of a whole are one interpretation of addition. Addition number sentences can be used to show parts of a whole.
$\square$ Joining parts to make a whole is one interpretation of addition. Addition number sentences can be used to show joining parts of a whole.
$\square$ Separating parts from a whole and comparison are two interpretations of subtraction. Subtraction number sentences can be used to show separating parts from a whole or comparison subtraction situations.
$\square$ Addition and subtraction have an inverse relationship. The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has a related addition fact.

## Essential Questions:

- Why is understanding the relationship between addition and subtraction useful?
- When would it be helpful to use a part-part-whole model?
- How can you write a story to show the relationships in a fact family?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

-Cumulative Project: "Under the Sea"
Students will choose an animal that lives in the sea as the topic of their project.
Students will then choose a total amount of that animal to use as their "whole," and write it in the top of a part-part-whole model. Students will draw "part" of the group of animals in one side of the model, and the other "part" of the group in the other side.
The background of the part-part-whole model should then be colored to look like a scene from under the sea.
Students then need to decide if they are going to write an addition or a subtraction story about their animals.
Students write a story problem to go with their part-part-whole picture, and then write the fact family sentences that relate to the model (stories should include key words, and the first number sentence should correspond to the story).
-Unit test.

## Resources:

enVision Math

| Literacy: <br> Rooster's Off to See the World by Eric Carle <br> Mall Mania by Stuart J. Murphy <br> A Fair Bear Share by Stuart J. Murphy <br> 17 Kings and 42 Elephants by Margaret Murphy <br> Online State resources <br> http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119 <br> http://www.iste.org/standards/nets-for-students.aspx <br> Links: <br> www.pearsonsuccessnet.com <br> www.nlvm.usu.edu/ <br> www.coolmath4kids.com <br> www.aplusmath.com/ <br> www.kidsnumbers.com <br> www.factmonster.com <br> www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html <br> www.primarygames.com/fractions/start.htm <br> http://www.harcourtschool.com/thinkmath/index.html |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Topic/ Selection | Suggested Timeline per topic | General Objectives | Instructional Activities | Suggested Benchmarks/ Assessments | New Jersey Student Learning Standards |
| Writing Addition Number Sentences | 2 days | Students will join two groups from pictures and stories using a part-partwhole model and write addition number sentences to tell how many in all. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how a part-part-whole model can show the amounts of two separate groups as addends combining to make a sum. Demonstrate how a written number sentence corresponds to the model. | -Performance task: Fill in a part-partwhole model and write corresponding addition sentences. -Independent practice -Centers -Teacher observation | Math: 2.OA. 1 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  |  | -Teacher created "quick" assessment -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Writing Subtraction Number Sentences | 2 days | Students will separate parts from a whole, using pictures, stories, and a part-part-whole model and write subtraction number sentences to tell the difference. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how a part-part-whole model can show one part being taken from a whole to find the part that is left. Demonstrate how a written number sentence corresponds to the model. | -Performance task: Fill in a part-partwhole model and write corresponding subtraction sentences. -Independent practice <br> -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: 2.OA. 1 <br> Technology: <br> 8.1.2.A. 5 |
| Stories About Comparing | 1 day | Students will write subtraction sentences to solve stories about comparing groups. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how objects from one set (number) can be matched with objects from another set (number) in order to find how many more or fewer are in a particular set (number). Demonstrate how a written number sentence corresponds to the model. | -Performance task: <br> Match objects <br> between sets to <br> show how many <br> more or fewer. <br> Write a <br> corresponding <br> subtraction <br> sentence. <br> -Independent <br> practice <br> -Centers <br> -Teacher <br> observation | Math: 2.OA. 1 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  |  | -Teacher created "quick" assessment -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fact Families | 2 days | Students will write related addition and subtraction facts. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how a part-part- whole model shows the relationship between addition and subtraction. Demonstrate how a group of related number sentences correspond to the model. | -Performance task: Write a set of related facts which corresponds to a part-part-whole model. <br> -Independent practice <br> -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: 2.OA.1, <br> 2.NBT. 5 <br> Technology: $\text { 8.1.2.A. } 5$ |
| Choose an Operation | 1 day | Students will use key words to determine which operation to perform in order to solve a problem. Students will fill in a part-part-whole model, and write a corresponding number sentence in order to show how they solved the problem. | Display possible key words used in story problems. Share various problems, and identify key words from each. Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) which sections of the part-part-whole model to fill in first based on the key words in the story. Determine how to complete the model, then write a corresponding number sentence. | -Performance task: Identify key words, complete a part-part-whole model, and write a number sentence for a story problem. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: 2.OA.1, <br> 2.NBT. 5 <br> Technology: <br> 8.1.2.A. 5 |

Second Grade Mathematics

| Review and <br> Summative <br> Assessment | 5 days | Students will show <br> comprehension of <br> concepts taught <br> throughout the unit. | Review concepts, introduce <br> cumulative project and give <br> guidelines, administer test, and <br> present projects. | Review and <br> Summative <br> Assessment | Math: 2.OA.1, <br> 2.NBT.5 <br> ELA- <br> Literacy.RI.2.1 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Suggested Modifications for Special Education, English Language Learners and Gifted Students: <br> Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: <br> larger amounts, regrouping, written explanations, and projects. Material and instruction should be modified for below level learners <br> and ELL: vocabulary cards, manipulatives, touch points, larger fonts, fewer items in sets, smaller numbers, number lines. |  |  |  |  |  |
| Suggested Technological Innovations/ Use: <br> Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc. |  |  |  |  |  |
| Cross Curricular/ 21 ${ }^{\text {st }}$ Century Connections: <br> 9.1 21 $1^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- <br> solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The <br> activities included in this unit provide students with the foundation necessary for understanding all other mathematical concepts. <br> The concepts taught in this unit are directly related to real life situations for everyday living as a child and an adult. |  |  |  |  |  |

## Sayreville Public Schools Curriculum Second Grade Mathematics

## Unit 2: Addition and Subtraction Strategies

Summary of the Unit: In this unit, students will be taught the skills necessary for a strong mathematical foundation. They will learn that addition and subtraction are related, that addition refers to the whole in terms of its parts, while subtraction talks about a missing part. Part-part-whole models will be used to help visualize this relationship. The unit culminates with a project thatincludes all of these concepts, as well as writing for math. The approximate scope for this unit is 18 days.

## Enduring Understanding:

- Doubles facts can be associated with memorable real-world situations.
- Basic addition facts that are near doubles can be found using a related doubles fact.
- Addition facts involving 9 can be changed to an equivalent fact with 10 . Addition facts involving 8 can be changed to an equivalent fact with 10 .
- Two numbers can be added in any order. Three or more whole numbers can be grouped and added in any order.
- Addition and subtraction have an inverse relationship. The inverse relationship between addition and subtraction can be used to find subtraction facts; every subtraction fact has a related addition fact.
- Some subtraction facts can be found by subtracting from the minuend (the larger number) an amount to get to 10 and then subtracting the amount that remains.


## Essential Questions:

- Why is understanding the relationship between addition and subtraction useful?
- How can you use strategies to find the answers to basic facts?
- Why is knowing your doubles facts so important for finding sums and differences?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

Cumulative Project: "Story Problems Class Book"
Students will create, illustrate and solve their own two-question story problems.
Students should identify, in writing, which strategies they used to solve their problems.
Students work should be collected and bound together in a class book.
-Unit test.

## Resources:

enVision Math

## Literacy:

The Missing Mittens by Stuart J. Murphy
The Action of Subtraction by Brian P. Cleary
Animals on Board by Stuart J. Murphy

## Online State resources

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com
www.nlvm.usu.edu/
www.coolmath4kids.com
www.aplusmath.com/
www.kidsnumbers.com
www.factmonster.com
www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html
www.primarygames.com/fractions/start.htm
http://www.harcourtschool.com/thinkmath/index.html

| Topic/ Selection | Suggested <br> Timeline <br> per topic | General <br> Objectives | Instructional Activities | Suggested <br> Benchmarks/ <br> Assessments | New Jersey <br> Student <br> Learning <br> Standards |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Adding 0,1 and 2 | 1 day | Students will <br> master addition | Demonstrate on a number line <br> (using the document camera | -Performance task: | Math: <br> 2.OA.1,2 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  | facts involving 0,1 , or 2. | and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how adding 0 does not change the number, adding one is the same as one more and adding 2 is the same as 2 more. | Find the sum of a number plus 0,1 , and 2. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{aligned} & \text { 2. NBT.5,9 } \\ & \text { Technology: } \\ & \text { 8.1.2.A.5 } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Doubles | 1 day | Students will master addition facts in which both addends are the same. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) using counters on a part-part-whole model to show doubles facts. Demonstrate how a written number sentence corresponds to the model. | -Performance task: Fill in a part-partwhole model and write corresponding doubles fact sentences. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: <br> 2.OA.1,2 <br> 2. NBT.5,9 <br> Technology: <br> 8.1.2.A. 5 |
| Near Doubles | 1 day | Students will master addition facts where the addends are one apart. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) when addends are side-by-side on a number line, you can find the sum by doubling the lower number and adding one more. | -Performance task: <br> Find the sum of near doubles. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{aligned} & \text { Math: 2.OA.1,2 } \\ & \text { 2. NBT.5,9 } \\ & \text { Technology: } \\ & \text { 8.1.2.A.5 } \end{aligned}$ |
| Adding in Any Order | 1 day | Students will apply the commutative | Demonstrate with connecting cubes of two different colors (using the document camera and | -Performance task: Show the commutative property with models, | Math: 2.OA.1, <br> 2. NBT.5,9 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  | property to find sums. | Smartboard, Smart Exchange activities, bulletin board sets, etc.) how the order of two parts can change, but you will still have the same whole. Demonstrate how in a number sentence, the order of the addends can change, but the sum stays the same. | and write corresponding number sentences. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{aligned} & \hline \text { Technology: } \\ & \text { 8.1.2.A.5 } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Adding 3 Numbers | 2 days | Students will find the sum of three addends in any order by applying the commutative property, using a part-part-partwhole model, and writing a corresponding number sentence. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) using counters on a part-part-part-whole model to show adding 3 numbers. <br> Demonstrate how a written number sentence corresponds to the model. | -Performance task: Show adding 3 numbers with models, and write corresponding number sentences. <br> -Independent practice -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: 2.OA.1, <br> 2.NBT.5,9 <br> Technology: <br> 8.1.2.A. 5 |
| Making 10 to Add | 1 day | Students will calculate sums by making ten when adding. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how when adding two numbers that are less than 10 , a ten frame can be used. | -Performance task: Show completing a ten frame in order to add two numbers. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{aligned} & \text { Math: 2.OA.2, } \\ & \text { 2.NBT.5,9 } \\ & \text { Technology: } \\ & \text { 8.1.2.A. } 5 \end{aligned}$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Subtracting 0,1 and $2$ | 1 day | Students will subtract 0,1 , and 2 from a number by applying the concepts of 0 less than, 1 less than , and 2 less than a number. | Demonstrate on a number line (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how subtracting 0 does not change the number, subtracting 1 is the same as 1 less and subtracting 2 is the same as 2 less. | -Performance task: <br> Find the difference of a number and 0,1 , and 2. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: <br> 2.OA.1,2 <br> 2.NBT.5,9 <br> Technology: <br> 8.1.2.A. 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Thinking Addition to Subtract Doubles | 1 day | Students will apply addition doubles facts to subtraction. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) using counters on a part-part-whole model to show doubles facts. Demonstrate how the model can be used to find the difference of a related subtraction sentence. | -Performance task: Use a part-part-whole model to show doubles facts and corresponding subtraction sentences. -Independent practice -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.OA.1,2 <br> 2.NBT.5,9 <br> Technology: <br> 8.1.2.A. 5 |
| Thinking Addition to 18 to Subtract | 2 days | Students will calculate differences by applying related addition facts. | Review (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how a part-part- whole model shows the relationship between addition and subtraction. Review how a group of related number | -Performance task: Write a set of related facts which corresponds to a part-part-whole model. <br> -Independent practice <br> -Centers <br> -Teacher observation | Math: <br> 2.OA.1,2 <br> 2.NBT.5,9 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | sentences correspond to the model. | -Teacher created "quick" assessment -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Making 10 to Subtract | 1 day | Students will use the "make ten" strategy to subtract. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.)with counters and ten frames how when subtracting from a number greater than 10 , you can use a ten frame to first subtract the ones to make a ten, then subtract the remaining ones in order to find your difference. | -Performance task: Use the "make ten" strategy on ten frames. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: <br> 2.OA.2,1 <br> 2.NBT.5, <br> Technology: 8.1.2.A.5 |
| Two-Question Problems | 1 day | Students will solve two-question problems by using the answer to the first question to answer the second question. | Share two-part story problems, (using the document camera and Smartboard, Smart Exchange activities, etc.) reviewing identifying key words to decide the operation. Discuss and demonstrate how solving the first part is necessary for solving the second part. | -Performance task: <br> Solve two part story problems. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math 2.OA. 1 ELA- <br> Literacy.RI.2.1 <br> Technology: <br> 8.1.2.A. 5 |
| Review and Summative Assessment | 5 days | Students will demonstrate comprehension of concepts taught throughout the unit. | Review concepts, introduce cumulative project and give guidelines, administer test, and present projects. | Review and Summative Assessment | Math: <br> 2.OA.1,2 <br> 2.NBT.5,9 <br> ELA- <br> Literacy.RI.2.1 |

Suggested Modifications for Special Education, English Language Learners and Gifted Students:

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: larger amounts, regrouping, written explanations, and projects. Material and instruction should be modified for below level learners and ELL: vocabulary cards, manipulatives, touch points, larger fonts, fewer items in sets, smaller numbers, number lines.

## Suggested Technological Innovations/ Use:

Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.
Cross Curricular/ $21^{\text {st }}$ Century Connections:
$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The activities included in this unit provide students with the foundation necessary for understanding all other mathematical concepts.
The concepts taught in this unit are directly related to real life situations for everyday living as a child and an adult.

## Unit 3: Working with Equal Groups

Summary of the Unit: In this unit, students will be taught the skills necessary for a strong mathematical foundation of multiplication, as understanding the use of arrays for repeated addition will be used later in developing the traditional algorithm for multiplication involving two factors. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope of this unit is 9 days.

## Enduring Understanding:

- Repeated addition involves joining equal groups.
- An array involves joining equal groups and is one way to think about repeatedaddition.


## Essential Questions:

- How does a drawing help you solve a problem?
- How can you write a story to show equal groups?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

-Cumulative Project: "The Toymaker"
Students pretend they are toy makers, and write stories about their workshops.
Students identify how many types of toys they make.
Students then identify (using equal groups) how many of each type they make.
Students illustrate their stories with arrays.
Students write corresponding repeated addition sentences to go with their stories and arrays.
-Unit test.

## Resources:

enVision Math

## Literacy:

What Comes in $2 s, 3 s$, and $4 s$, by Suzanne Aker

## Online State resources

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com

| www.nlvm.usu.edu/ www.coolmath4kids.com www.aplusmath.com/ www.kidsnumbers.com www.factmonster.com www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html www.primarygames.com/fractions/start.htm http://www.harcourtschool.com/thinkmath/index.html |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Topic/ Selection | Suggested Timeline per topic | General Objectives | Instructional Activities | Suggested Benchmarks/ Assessments | New Jersey Student <br> Learning <br> Standards |
| Repeated Addition | 1 day | Students will show repeated addition using a part-partwhole model to write number sentences. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how a part-part-whole model can show equal amounts of two or more addends combining to make a sum. Demonstrate how a written number sentence corresponds to the model. | -Performance task: Fill in a part-partwhole model for repeated addition and write corresponding addition sentences. -Independent practice <br> -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: 2.OA. 4 Technology: 8.1.2.A.5 |
| Building Arrays | 1 day | Students will build arrays to model repeated addition. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how an array is constructed using rows and | -Performance task: Create an array and write a corresponding repeated addition sentence. | Math: 2.OA. 4 Technology: 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | columns to show equal groups. Demonstrate how a written number sentence corresponds to the model. | -Independent practice -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Practicing Repeated Addition with Story Problems | 2 days | Students will solve repeated addition story problems utilizing part-partwhole models and arrays. | Review (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how a part-part-whole model and an array can show equal amounts of two or more addends combining to make a sum. Demonstrate how these strategies can be used to solve story problems. | -Performance task: Create arrays and part-part-whole models to solve story problems, and write corresponding repeated addition sentences. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: <br> 2.OA.1,4 <br> ELA- <br> Literacy.RI.2.1 <br> Technology: <br> 8.1.2.A. 5 |
| Review and Summative Assessment | 5 days | Students will demonstrate comprehension of concepts taught throughout the unit. | Review concepts, introduce cumulative project and give guidelines, administer test, and present projects. | Review and Summative Assessment | Math: <br> 2.OA.1,4 <br> 2.NBT. 5 <br> ELA- <br> Literacy.RI.2.1 |

## Suggested Modifications for Special Education, English Language Learners and Gifted Students:

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners:
larger amounts, written explanations, and projects. Material and instruction should be modified for below level learners and ELL:
vocabulary cards, manipulatives, touch points, larger fonts, fewer items in sets, smaller numbers, number lines.

## Suggested Technological Innovations/ Use:

Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.

## Cross Curricular/ $21{ }^{\text {st }}$ Century Connections:

$9.12{ }^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The activities included in this unit provide students with the foundation necessary for understanding multiplication and division. The concepts taught in this unit are directly related to real life situations for everyday living as a child and an adult.

## Unit 4: Place Value to 100

Summary of the Unit: In this unit, students will be taught the importance of place value; how the value of each digit in thenumber depends on its positional place in the number. They will be taught that understanding place value is essential when learning how to compare, order and find patterns in numbers. The topic focuses on the meaning for numbers with two digits. Lessons in this unit help children learn about numbers with models of ones, tens, and hundreds, which makes the numbers more real and less abstract for children. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope of this unit is 13 days.

## Enduring Understanding:

- In a two-digit number, the tens digit tells how many groups of ten and the ones digit tells the number of ones.
- Numbers through 20 are each represented by a unique number word. The numbers 21-99 are written by joining two number words that describe the number of tens and ones.
- Our place value number system makes it easy to name the number that is 10 more or 10 less than any other given number by simply adjusting the digit in the tens place.
- Numbers can be used to tell how many and place value can be used to compare and order numbers.
- The position of words before and after can be used to explain number relationships.
- Some numbers can be divided into two equal parts and some cannot.
- Numbers can be used to tell how many.
- Our number system is based on groups of ten. Whenever we get 10 in one place value, we move to the next greater place value.
- 


## Essential Questions:

- How can numbers to 100 be shown and compared?
- How are number patterns helpful in reading and writing numbers to 100 ?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

## -Cumulative Project: "Magic Numbers"

Students will draw 2 numbers from a "magic hat," each representing a place value of a 2-digit number.
Students will write their "magic number" on their own "magic hat" in standard form.
Students will then show the expanded form and word name of the number on their project paper.
Students will draw place value models to represent their numbers.

| Students will create number patterns, stemming from their numbers, showing the numbers that come before and after their number, as well as skip counting patterns by 10 . <br> Students will show three other numbers to compare to their number using $>,<$, and $=$. -Unit test. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Resources: <br> enVision Math <br> Literacy: <br> A Fair Bear Share by Stuart J. Murphy <br> Even Steven and Odd Todd by Kathryn Cristaldi <br> Online State resources <br> http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119 <br> http://www.iste.org/standards/nets-for-students.aspx <br> Links: <br> www.pearsonsuccessnet.com <br> www.nlvm.usu.edu/ <br> www.coolmath4kids.com <br> www.aplusmath.com/ <br> www.kidsnumbers.com <br> www.factmonster.com <br> www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html <br> www.primarygames.com/fractions/start.htm <br> http://www.harcourtschool.com/thinkmath/index.html |  |  |  |  |  |
| Topic/ Selection | Suggested Timeline per topic | General Objectives | Instructional Activities | Suggested <br> Benchmarks/ <br> Assessments | New Jersey <br> Student <br> Learning <br> Standards |
| Models for Tens and Ones | 1 day | Students will group objects into tens and | Demonstrate (using the document camera and | -Performance task: | Math: 2.NBT.1.a,1,3 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | ones to show two- <br> digit numbers. | Smartboard, Smart <br> Exchange activities, <br> bulletin board sets, etc.) <br> how given a set of objects, <br> groups of ten and ones can <br> be identified, and a number <br> can be written based on the <br> amount of each. | Circle and count <br> groups of tens. <br> Circle and count <br> ones. <br> Write the total <br> amount in standard <br> form. <br> -Independent <br> practice |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |
|  |  |  |  | -Centers |  |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | bulletin board sets, etc.) greater than, less than, and equal signs. Practice identifying the value of the numbers based on digits in each place. | -Independent <br> practice <br> -Centers <br> -Teacher <br> observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Counting to 100 | 1 day | Students will identify and write numbers that are one before and one after given numbers. <br> Students will also count on and count back to identify missing numbers to 100. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) on a hundred chart how numbers can be located. | -Performance task: Use a hundred chart to locate numbers. -Independent practice -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: 2.NBT. 2 Technology: 8.1.2.A. 5 |
| Ten More or Ten Less | 1 day | Students will identify and write numbers that are ten more and ten less than given numbers. <br> Students will also count on and count back by tens to identify missing numbers. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) on a hundred chart how numbers that are ten more and ten less can be located. | -Performance task: Use a hundred chart to locate numbers. -Independent practice -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: 2.NBT.5,6 Technology: 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Even and Odd Numbers | 1 day | Students will explore and identify even and odd numbers | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how even numbers can be separated into equal groups and end with certain digits in the ones place, and how odd numbers cannot be separated into equal groups and end with certain digits in the ones place. | -Performance task: <br> Determine whether a number is odd or even. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: 2.OA.3, <br> 2.NBT. 9 <br> Technology: <br> 8.1.2.A. 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Using Data from a Chart | 2 days | Students will use clues and data from a chart to identify a number. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how by using given clues, some numbers from a set can be eliminated in order to isolate one particular number. | -Performance task: Use a chart and clues to find a "secret number." -Independent practice -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.NBT. 5 <br> 2.OA. 1 <br> Technology: <br> 8.1.2.A. 5 |
| Review and Summative Assessment | 5 days | Students will demonstrate comprehension of concepts taught throughout the unit. | Review concepts, introduce cumulative project and give guidelines, administer test, and present projects. | Review and Summative Assessment | $\begin{array}{\|l\|} \hline \text { Math: } \\ \text { 2.NBT.1,2,3,4,5,6,9 } \\ \text { 2.OA.3 } \\ \text { ELA- } \\ \text { Literacy.RI.2.1 } \end{array}$ |

Suggested Modifications for Special Education, English Language Learners and Gifted Students:

| Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for |
| :--- |
| advanced learners: higher place values, written explanations, and projects. Material and instruction should be modified |
| for below level learners and ELL: vocabulary cards, manipulatives, larger fonts, fewer items in sets, smaller numbers, |
| number lines. |
| Suggested Technological Innovations/ Use: |
| Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc. |
| Cross Curricular/ 21st Century Connections: |
| 9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and |
| problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and |
| organizational cultures. The activities included in this unit provide students with the foundation necessary for |
| understanding all other mathematical concepts, as well as concepts in the sciences and social studies. |

## Unit 5: Mental Addition and Subtraction

Summary of the Unit: In this unit, students will be taught that mental computation is a key math skill in helping them learn how numbers work. Learning this skill encourages them to make decisions about how to solve problems, and it allows them to come up with their own methods of solving. Students performing mental math learn the structure of a number and its properties. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope for this unit is 15 days.

## Enduring Understanding:

- Adding tens is like adding ones. Subtracting tens is like subtracting ones.
- When adding a number less than ten to a two-digit number using the traditional algorithm, it may be necessary to rename 10 ones as 1 ten.
- Two-digit numbers can be broken apart using tens and ones and added in different ways.
- Patterns on a hundred chart can be used to add or subtract numbers and to develop mental math strategies and number sense.
- Adding groups of tens is similar to adding numbers less than 10.
- To find parts of 100 , add on ones to make a ten and count on by tens to reach 100 .
- Subtracting groups of tens is similar to subtracting numbers less than 10.


## Essential Questions:

- How can sums and differences be found mentally?
- How can mental math make your life easier?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

-Cumulative Project: "Hundred Chart Art"
Students design a picture on a hundred chart by coloring in boxes.
Students identify and write addition and subtraction problems which would have the same answers as the numbers in the colored boxes.
*Alternative Project: Teacher provides number sentences, and students have to solve and color boxes for the answer.
-Unit test.
Resources:
enVision Math
Literacy:

## From One to One Hundred by Teri Sloat <br> Elevator Magic by Stuart J. Murphy

## Online State resources

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com
www.nlvm.usu.edu/
www.coolmath4kids.com
www.aplusmath.com/
www.kidsnumbers.com
www.factmonster.com
www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html
www.primarygames.com/fractions/start.htm
http://www.harcourtschool.com/thinkmath/index.html

| Topic/ Selection | Suggested <br> Timeline <br> per topic | General <br> Objectives | Instructional Activities | Suggested <br> Benchmarks/ <br> Assessments | New Jersey <br> Student <br> Learning <br> Standards |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Adding Tens | 1 day | Students mentally <br> add multiples of <br> ten to a two- digit <br> number | Review skip counting by tens. <br> Demonstrate (using the <br> document camera and <br> Smartboard, Smart Exchange <br> activities, bulletin board sets, <br> etc.) how when you add <br> multiples of ten to a number, the <br> ones stay the same, and only the <br> tens change. | -Performance task: <br> Skip count to add <br> tens to a number. <br> -Independent <br> practice <br> -Centers <br> -Teacher <br> observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: <br> $2 . N B T .5,8,9$ <br> Technology: <br> $8.1 .2 . A .5$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Adding Ones | 1 day | Students will <br> mentally add a <br> two-digit number <br> and a one-digit <br> number. | Demonstrate (using the <br> document camera and <br> Smartboard, Smart Exchange <br> activities, bulletin board sets, <br> etc.) how to use the "make a ten", <br> strategy to get to the "next ten." | - Performance task: <br> Students verbally <br> explain how to use <br> mental math for <br> finding the sum of <br> the addends. <br> -Independent <br> practice |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  | Math: <br> 2.NBT.5,8,9 <br> Technology: <br> 8.1.2.A. |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | chart in order to add tens and ones. | -Independent practice -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finding a Pattern to Solve Problems | 1 day | Students will use number patterns to solve problems. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how finding the difference between two numbers can help you identify a skip-counting pattern. Demonstrate that continuing the pattern can help you find more information. | -Performance task: Identify a pattern to solve a problem. <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: 2.NBT. 2 ELA- <br> Literacy.RI.2.1 <br> Technology: <br> 8.1.2.A. 5 |
| Subtracting Tens | 1 day | Students mentally subtract a multiple of ten from a twodigit number. | Review skip counting backwards by tens. Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how when you subtract multiples of ten from a number, the ones stay the same, and only the tens change. | -Performance task: <br> Skip count backwards to subtract tens from a number. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.NBT.8,5,9 <br> Technology: $\text { 8.1.2.A. } 5$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Subtracting on a Hundred Chart | 1 day | Students will use a hundred chart to subtract tens and ones. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how to move on a hundred chart in order to subtract tens and ones. | -Performance task: Use a hundred chart to subtract tens and ones. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: 2.NBT.5,8,9 <br> 2.OA. 1 <br> Technology: $\text { 8.1.2.A. } 5$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Missing and Extra Information | 1 day | Students will determine whether or not they can solve problems with missing or extra information. | Display (using the document camera and Smartboard, Smart Exchange activities, etc.) story problems and have students circle extra information when present, or identify what is needed in order to solve the problem. | -Performance task: Decide and explain when problems can or cannot be solved. -Independent practice -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.NBT.5,7 <br> ELA- <br> Literacy.RI.2.1 <br> Technology: <br> 8.1.2.A. 5 |
| Review and Summative Assessment | 5 days | Students will demonstrate comprehension of concepts taught throughout the unit. | Review concepts, introduce cumulative project and give guidelines, administer test, and present projects. | Review and Summative Assessment | Math: <br> 2.NBT.2,5,7,8,9 <br> ELA- <br> Literacy.RI.2.1 |
| Suggested Modifications for Special Education, English Language Learners and Gifted Students: Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: larger amounts, regrouping, written explanations, and projects. Material and instruction should be modified for below level learners |  |  |  |  |  |

## and ELL: vocabulary cards, manipulatives, touch points, larger fonts, fewer items in sets, smaller numbers, number lines, hundred

 chart.
## Suggested Technological Innovations/ Use:

## Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.

## Cross Curricular/ $21^{\text {st }}$ Century Connections:

$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-
solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The activities included in this unit encourage students to think more broadly on their own about numbers. The concepts taught in this unit are directly related to real life situations for everyday living as a child and an adult.

## Unit 6: Addition and Subtraction of Two-Digit Numbers

Summary of the Unit: This unit reinforces the concept that there is more than one way to add and subtract numbers. The traditional algorithms, (as well as the expanded algorithm for addition), part-part-whole models, and place value models, along with mental math are all used to teach the concept. Regrouping will be taught, and the relationship between addition and subtraction will be reinforced. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope for this unit is 30 days.

## Enduring Understanding:

- Ten ones can be regrouped for 1 ten.
- The standard addition algorithm for two-digit and one-digit numbers breaks the calculations into simpler calculations using place value, starting with the ones and then the tens. Answers to the simpler calculations are used to give the final sum.
- The standard algorithm for adding two-digit and two-digit numbers is just an extension of the algorithm for addingtwodigit and one-digit numbers. The ones are added first and then the tens.
- All sums and differences can be found using models (cubes). Some calculations are done easily using mental math or paper and pencil. More complex calculations can be done using a calculator.
- Sums can be represented as lengths on a number line diagram of addition.
- One ten can be regrouped for 10 ones.
- The standard subtraction algorithm breaks the calculation into simpler calculations starting with the ones and then the tens.
- The standard algorithm for subtracting two-digit and two-digit numbers is just an extension of the algorithm for subtracting two-digit and one-digit numbers.
- All sums and differences can be found using models (cubes). Some calculations are done easily using mental math or paper and pencil. More complex calculations can be done using a calculator.
- Differences can be represented as lengths in a number line diagram of subtraction.
- The inverse relationship between addition and subtraction can be used to check subtraction.


## Essential Questions:

- How can you use models to add and subtract two-digit numbers?
- Why is it important to know how to add and subtract large numbers for everyday life?
- Why is understanding when and how to regroup necessary for working with numbers?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

Cumulative Project: "Big Problems Class Book"
Students will create, illustrate and solve their own two-question 2-digit addition and subtraction story problems.
Students should identify, in writing, which strategies they used to solve their problems.
Students work should be collected and bound together in a class book.
-Unit test.
Resources:
enVision Math

## Literacy:

17 Kings and 42 Elephants by Margaret Mahy
Shark Swimathon by Stuart J. Murphy
Lights Out! By Lucille Recht Penner
Coyotes All ${ }^{-1}$ round by Stuart J. Murphy

## Online State resources

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com
www.nlvm.usu.edu/
www.coolmath4kids.com
www.aplusmath.com/
www.kidsnumbers.com
www.factmonster.com
www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html
www.primarygames.com/fractions/start.htm
http://www.harcourtschool.com/thinkmath/index.html

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Topic/ Selection | Suggested Timeline per topic | General Objectives | Instructional Activities | Suggested Benchmarks/ Assessments | New Jersey Student Learning Standards |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Regrouping Ten Ones for One Ten | 5 days | Students will add a one- and two-digit numbers to a twodigit number using models. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) using place value models and the standard algorithm how ten ones can be regrouped as one ten and a number is moved from one place value to the next. | -Performance task: Regroup ones as tens, and find the sum of the addends. -Independent practice -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.NBT.5,6,9 <br> Technology: <br> 8.1.2.A. 5 |
| Adding on a Number Line | 2 days | Students will model two-digit addition using a number line. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how to show addition on a number line, staring at zero, drawing a line for the first addend, then drawing another line for the second added to reach the sum. | -Performance task: <br> Show addition <br> problems on number <br> lines. <br> -Independent <br> practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: 2.MD. 6 <br> 2.NBT.5,6,9 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Adding More than Two Numbers | 2 days | Students will add three and four twodigit numbers. | Review (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) addition strategies and regrouping. Practice adding three and four two-digit numbers. | -Performance task: Use strategies to add three and four twodigit numbers. -Independent practice -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: <br> 2.NBT.6, 5, 9 <br> Technology: <br> 8.1.2.A. 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Draw a Picture and Write a Number Sentence | 2 days | Students will solve story problems using a part-part-whole model and write a corresponding number sentence. | Review (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) identifying and using key words $n$ story problems and how a part-partwhole model can help to solve a problem. Review how a number sentence corresponds to the model. | -Performance task: Show a part-partwhole model and a number sentence to solve a problem. -Independent practice -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.NBT.5, <br> 2.OA. 1 <br> ELA- <br> Literacy.RI.2.1 <br> Technology: <br> 8.1.2.A. 5 |
| Review and Benchmark Assessment | 2 days | Students will demonstrate comprehension of concepts taught throughout the first four topics. | Review concepts, administer test. | Review and Benchmark Assessment | $\begin{aligned} & \hline \text { Math: 2.OA.1, } \\ & \text { 2.NBT.5 } \\ & \text { ELA- } \\ & \text { Literacy.RI.2.1 } \end{aligned}$ |
| Regrouping One Ten for Ten Ones | 5 days | Students will regroup one ten as ten ones when subtracting. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, | -Performance task: Regroup tens as ones, and find the difference of the | Math: <br> 2.NBT.5,9 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics
$\left.\begin{array}{|l|l|l|l|l|l|}\hline & & & & \begin{array}{l}\text { etc.) using place value models } \\ \text { and the standard algorithm } \\ \text { how one ten can be regrouped } \\ \text { as ten ones and a number is } \\ \text { moved from one place value to } \\ \text { the next. }\end{array} & \begin{array}{l}\text { minuend and } \\ \text { subtrahend. } \\ \text {-Independent } \\ \text { practice }\end{array} \\ \text {-Centers } \\ - \text { Teacher observation } \\ \text {-Teacher created } \\ \text { "quick" assessment } \\ \text {-Leveled homework }\end{array}\right]$.

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | the operation to <br> solve each question. | Exchange activities, etc.) <br> reviewing identifying key <br> words to decide the operation. <br> Review and demonstrate how <br> solving the first part is <br> necessary for solving the <br> second part. | -Independent <br> practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Review and <br> Benchmark <br> Assessment | 2 days | Students will <br> demonstrate <br> comprehension of <br> concepts taught <br> throughout the <br> second four topics. | Review concepts, administer <br> test. | Review and <br> Benchmark <br> Biteracy.RI.2.1 |  |

## Unit 7: Place Value to $\mathbf{1 , 0 0 0}$

Summary of the Unit: In this unit, students will be taught the importance of place value; how the value of each digit in thenumber depends on its positional place in the number. They will be taught that understanding place value is essential when learning how to compare, order and find patterns in numbers. The topic focuses on the meaning for numbers with two or three digits. Lessons in this unit help children learn about numbers with models of ones, tens, and hundreds, which makes the numbers more real and less abstract for children. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope of this unit is 14 days.

## Enduring Understanding:

- In a three-digit number, the hundreds digit tells how many groups of one hundred, tens digit tells how many groups of ten and the ones digit tells the number of ones.
- Numbers can be used to tell how many.
- Place value can be used to compare and order numbers.
- Numbers can be used to tell how many.
- Our number system is based on groups of ten. Whenever we get 10 in one place value, we move to the next greater place value.
- Adding or subtracting hundreds or tens is similar to adding or subtracting single-digitnumbers.
- Counting and place-value can be seen on a hundreds chart.
- Number lines can help with skip counting.
- Ordering three or more numbers is similar to comparing two numbers because each number must be compared to each of the other numbers.


## Essential Questions:

- How can numbers to 100 be shown and compared?
- How are number patterns helpful in reading and writing numbers to 1,000 ?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

## -Cumulative Project: "Magic Numbers"

Students will draw 3 numbers from a "magic hat," each representing a place value of a 3-digit number.
Students will write their "magic number" on their own "magic hat" in standard form.
Students will then show the expanded form and word name of the number on their project paper.

| Students will draw place value models to represent their numbers. <br> Students will create number patterns, stemming from their numbers, showing the numbers that come before and after their number, as well as skip counting patterns by 10 and 100 . <br> Students will show three other number to compare to their numbers using $>,<$, and $=$. -Unit test. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Resources: <br> enVision Math <br> Literacy: <br> A Fair Bear Share by Stuart J. Murphy <br> Even Steven and Odd Todd by Kathryn Cristaldi <br> How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000 by Helen Nolan <br> Online State resources <br> http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119 <br> http://www.iste.org/standards/nets-for-students.aspx <br> Links: <br> www.pearsonsuccessnet.com <br> www.nlvm.usu.edu/ <br> www.coolmath4kids.com <br> www.aplusmath.com/ <br> www.kidsnumbers.com <br> www.factmonster.com <br> www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html <br> www.primarygames.com/fractions/start.htm <br> http://www.harcourtschool.com/thinkmath/index.html |  |  |  |  |  |
| Topic/ Selection | Suggested Timeline per topic | General Objectives | Instructional Activities | 谷 $\begin{aligned} & \text { Suggested } \\ & \text { Benchmarks/ } \\ & \text { Assessments }\end{aligned}$ | New Jersey Student Learning Standards |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Building One Thousand | 1 day | Students will count by hundreds to 1,000 . | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how given a set of objects, groups of on hundred can be identified, and a number can be written based on the amount of groups. | -Performance task: Circle and count groups of one hundred. <br> Write the total amount in standard form. <br> -Independent practice <br> -Centers <br> -Teacher observation -Teacher created "quick" assessment -Leveled homework | Math: 2.NBT.1.b,a,2 <br> Technology: <br> 8.1.2.A. 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Counting Hundreds, Tens and Ones | 1 day | Students will display numbers up to 1,000 using place value models. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how place value models can be used to count and represent numbers. | -Performance task: Fill in a place value chart and write the standard form of a number up to 999 . -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: 2.NBT.1,b,3 Technology: 8.1.2.A. 5 |
| Reading and Writing Numbers to 1,000 | 1 day | Students will identify and record 3 digit numbers in expanded, | Display (using the document camera and Smartboard, Smart | -Performance task: Write word name, standard form, and | Math: 2.NBT.3,1a,b Technology: $\text { 8.1.2.A. } 5$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | standard and number <br> word form. | Exchange activities, <br> bulletin board sets, etc.) <br> number words and <br> corresponding standard <br> form of each. <br> Demonstrate how a <br> number can be written as a <br> simple addition sentence <br> using the values of each <br> digit as the addends. <br> Given a form of the <br> number, identify which <br> form is shown, and write <br> the other forms of the <br> number. | expanded form of <br> numbers 0-999. <br> -Independent <br> practice |
| :--- | :--- | :--- | :--- | :--- | :--- |
| -Centers |  |  |  |  |  |
| observation |  |  |  |  |  |
| -Teacher created |  |  |  |  |  |
| "quick" assessment |  |  |  |  |  |
| -Leveled |  |  |  |  |  |
| homework |  |  |  |  |  |,

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  | find, identify, and apply number patterns. | Smartboard, Smart <br> Exchange activities, bulletin board sets, etc.) on a number chart how numbers can be located using patterns. | Use a number chart to locate numbers. <br> -Independent <br> practice <br> -Centers <br> -Teacher <br> observation <br> -Teacher created <br> "quick" assessment <br> -Leveled <br> homework | $\begin{aligned} & \text { Technology: } \\ & \text { 8.1.2.A. } 5 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Skip Counting by $5 \mathrm{~s}, 10 \mathrm{~s}$, and 100 s to 1,000 . | 1 day | Students will skip count by different amounts on a number line and use the patterns to identify the numbers that come next. | Review skip counting. Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) use of a number line to identify patterns, then fill in missing numbers. | -Performance task: Fill in missing numbers on a number line. -Independent practice -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework | Math: <br> 2.NBT. 2 <br> Technology: <br> 8.1.2.A. 5 |
| Comparing 3digit numbers | 1 day | Students will compare three-digit numbers using symbols. | Review (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) greater than, less than, and equal signs. Practice identifying the value of the | -Performance task: Correctly compare numbers using symbols. <br> -Independent practice -Centers <br> -Teacher observation | Math: <br> 2.NBT. 4 <br> Technology: $\text { 8.1.2.A. } 5$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics
$\left.\begin{array}{|l|l|l|l|l|l|}\hline & & & \begin{array}{l}\text { numbers based on digits in } \\ \text { each place. }\end{array} & \begin{array}{l}\text {-Teacher created } \\ \text { "quick" assessment } \\ \text {-Leveled } \\ \text { homework }\end{array} & \\ \hline \begin{array}{l}\text { Ordering } \\ \text { Numbers and } \\ \text { Identifying } \\ \text { Patterns }\end{array} & 2 \text { days } & \begin{array}{l}\text { Students will order } \\ \text { three-digit numbers } \\ \text { from least to greatest } \\ \text { and greatest to least, } \\ \text { and solve problems } \\ \text { by finding number } \\ \text { patterns. }\end{array} & \begin{array}{l}\text { Demonstrate (using the } \\ \text { document camera and } \\ \text { Smartboard, Smart } \\ \text { Exchange activities, } \\ \text { bulletin board sets, etc.) } \\ \text { how when a given a set of } \\ \text { numbers, they can be } \\ \text { placed in order depending } \\ \text { on their place values. } \\ \text { Demonstrate how when a } \\ \text { set of 3-digit numbers all } \\ \text { end in the same digit, a } \\ \text { skip counting pattern of } \\ \text { tens or hundreds can be } \\ \text { identified. }\end{array} & \begin{array}{l}\text {-Performance task: } \\ \text { Correctly order } \\ \text { numbers and } \\ \text { identify number } \\ \text { patterns. } \\ \text {-Independent } \\ \text { practice } \\ \text {-Centers } \\ \text {-Teacher } \\ \text { observation } \\ \text {-Teacher created } \\ \text { "quick" assessment }\end{array} & \begin{array}{l}\text { Math: } \\ \text {-Leveled } \\ \text { homework }\end{array} \\ \text { 2.NBT.4,2 } \\ \text { Technology: } \\ \text { 8.1.2.A.5 }\end{array}\right]$.

## Suggested Modifications for Special Education, English Language Learners and Gifted Students:

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: higher place values, written explanations, and projects. Material and instruction should be modified for below level learners and ELL: vocabulary cards, manipulatives, and larger fonts, fewer items in sets, smaller numbers, and number lines.

## Suggested Technological Innovations/ Use: <br> Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc. <br> Cross Curricular/ 21 ${ }^{\text {st }}$ Century Connections:

## Sayreville Public Schools Curriculum

Second Grade Mathematics
$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The activities included in this unit provide students with the foundation necessary for understanding all other mathematical concepts, as well as concepts in the sciences and social studies.

## Unit 8: Addition and Subtraction of Three-Digit Numbers

Summary of the Unit: This unit reinforces the concept that there is more than one way to add and subtract numbers. The traditional algorithms, (as well as the expanded algorithm for addition), part-part-whole models, and place value models, along with mental math are all used to teach the concept. Regrouping will be taught, and the relationship between addition and subtraction will be reinforced. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope for this unit is 17 days.

## Enduring Understanding:

$\Gamma$ There are a variety of ways to add three digit numbers.
$\lceil$ There is more than one way to do a mental calculation. Techniques for doing addition or subtraction calculations mentally involve changing the numbers or the expression so the calculation is easy to do mentally.
$\lceil$ The standard addition algorithm for three-digit numbers breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and then the hundreds.
$\sqcap$ There is a variety of ways to subtract three-digit numbers.
$\lceil$ The standard subtraction algorithm for three-digit numbers breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and then the hundreds.

## Essential Questions:

$\square$ How does knowing about shapes help you interact withyour world?
$\square$ How can structures be created by combining other shapes?
$\sqcap$ How can the shapes which form a structure be identified?

## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

Cumulative Project: "Big Problems Class Book"
Students will create, illustrate and solve their own two-question 3-digit addition and subtraction story problems.
Students should identify, in writing, which strategies they used to solve their problems.
Students work should be collected and bound together in a class book.

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| -Unit test. <br> Resources: <br> enVision Math <br> Literacy: <br> 17 Kings and 42 Elephants by Margaret Mahy <br> Shark Swimathon by Stuart J. Murphy <br> Lights Out! By Lucille Recht Penner <br> Coyotes All Around by Stuart J. Murphy <br> Online State resources <br> http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=1 <br> http://www.iste.org/standards/nets-for-students.aspx <br> Links: <br> www.pearsonsuccessnet.com <br> www.nlvm.usu.edu/ <br> www.coolmath4kids.com <br> www.aplusmath.com/ <br> www.kidsnumbers.com <br> www.factmonster.com <br> www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html <br> www.primarygames.com/fractions/start.htm <br> http://www.harcourtschool.com/thinkmath/index.html |  |  |  |  |  |
| Topic/ Selection | Suggested Timeline per topic | General Objectives | Instructional Activities | Suggested Benchmarks/ Assessments | New Jersey Student Learning Standards |
| Adding Multiples of 100 to a ThreeDigit Number | 1 day | Students will mentally add multiples of 100 to a three-digit number. | Review (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) adding multiples of 100 and practice. | -Performance task: <br> Mentally add hundreds to a 3digit number to find the sum. -Independent practice | Math: <br> 2.NBT.7,8,9 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics
$\left.\begin{array}{|l|l|l|l|l|l|}\hline & & & & \begin{array}{l}\text {-Centers } \\ - \text { Teacher } \\ \text { observation } \\ - \text { Teacher } \\ \text { created "quick" } \\ \text { assessment }\end{array} \\ \text {-Leveled } \\ \text { homework }\end{array}\right]$.

Sayreville Public Schools Curriculum
Second Grade Mathematics
$\left.\begin{array}{|l|l|l|l|l|l|}\hline & & & & \begin{array}{l}\text {-Teacher } \\ \text { observation } \\ - \text { Teacher } \\ \text { created "quick" } \\ \text { assessment }\end{array} \\ \text {-Leveled } \\ \text { homework }\end{array}\right]$.

Sayreville Public Schools Curriculum Second Grade Mathematics

|  |  |  | together to find a sum <br> within a given range. | -Teacher <br> observation <br> -Teacher <br> created "quick" <br> assessment <br> -Leveled <br> homework |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Review and <br> Summative <br> Assessment | 6 days | Students will <br> demonstrate <br> comprehension of <br> concepts taught <br> throughout the unit. | Review concepts, <br> introduce cumulative <br> project and give <br> guidelines, administer <br> test, and present <br> projects. | Review and <br> Summative <br> Assessment | Math: 2.OA.1, <br> 2.NBT.5,6,7,8,9 <br> ELA-Literacy.RI.2.1 |

## Suggested Modifications for Special Education, English Language Learners and Gifted Students:

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: larger amounts, written explanations, projects. Material and instruction should be modified for below level learners and ELL: vocabulary cards, manipulatives, touch points, larger fonts, fewer items in sets, smaller numbers, number lines.

## Suggested Technological Innovations/ Use: <br> Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.

Cross Curricular/ 21 $^{\text {st }}$ Century Connections:
$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The strategies included in this unit help to provide students with the understanding that there is more than one way to solve problem. One of the goals is that students will learn to be flexible in situations when they are working with others who may have a different approach to solving a problem.

## Unit 9: Money

Summary of the Unit: In this unit, students will learn the essentials of working with money. They will learn to identify each coin and its value, determine the value of mixed coins and dollar bill amounts, and use the dollar and cents signs correctly. They will also understand that money amounts can be represented using different combinations of coins and dollars, and they will solve problems involving money. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope of this unit is 12 days.

## Enduring Understanding:

- Specific coins or bills each have a unique value. The size of a coin does not indicate its value.
- Money amounts can usually be counted in different ways. When counting money, it is usually easier to start with the coinor bill with the greatest value.
- The amount of money can often be represented using different combinations of coins and bills.
- The process for adding and subtracting money, written using dollar and cent notations, is the same as adding or subtracting


## Essential Questions:

- How and why should I order a set of money in order to find the total value?
- How many different ways can I show a particular amount of money?
- Why is it important for me to understand these concepts for your everyday life?

| Each menu should include a list of beverages, main course meals, and desserts. <br> All items should be priced using correct place value and money symbols. <br> Students create five different customer's bills which show a beverage, a main course meal, and a dessert. <br> All items' prices should be listed on the bill and then totaled to show the full amount of the meal. <br> The bills should then show how much money was used to pay, and the correct amount of change due to each customer. <br> -Unit test |  |  |
| :--- | :--- | :--- |
| Resources: <br> enVision Math <br> Literacy: <br> Alexander Who Used To Be Rich Last Sunday by Judith Viorst <br> Dinosaur Deals by Stuart J. Murphy <br> The Penny Pot by Stuart J. Murphy <br> Online State resources <br> http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119 <br> http://www.iste.org/standards/nets-for-students.aspx |  |  |
| Links: <br> www.pearsonsuccessnet.com <br> www.nlvm.usu.edu/ <br> www.coolmath4kids.com <br> www.aplusmath.com/ <br> www.kidsnumbers.com <br> www.factmonster.com <br> www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html <br> www.primarygames.com/fractions/start.htm <br> http://www.harcourtschool.com/thinkmath/index.html <br> www.pearsonsuccessnet.com | Suggested <br> Topic/ Selection | General <br> Timeline <br> Objectives <br> per topic |

## Sayreville Public Schools Curriculum

Second Grade Mathematics

|  |  | of coins, <br> separately and in <br> groups, including <br> half-dollars, <br> quarters, dimes, <br> nickels, and <br> pennies. | each coin (using the <br> document camera and <br> Smartboard, Smart <br> Exchange activities, <br> bulletin board sets, <br> etc.). | Identify the name and value of <br> each coin. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" <br> assessment <br> -Leveled homework | Technology: <br> 8.1.2.A.5 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Counting Coins | 1 day | Students will be <br> able to order and <br> find the sum of a <br> collection of coins <br> including half- <br> dollars, quarters, <br> dimes, nickels, <br> and pennies | Demonstrate (using the <br> document camera and <br> Smartboard, Smart <br> Exchange activities, <br> bulletin board sets, etc. <br> ordering a group of <br> coins from greatest to <br> least value and adding <br> on to find the total. | -Performance Task: <br> Order coins and add on to find <br> the total value. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick", <br> assessment <br> -Leveled homework | Math: 2.MD.8 <br> Technology: <br> 8.1.2.A.5 |
| Ways to Show <br> the Same <br> Amount | 2 days | Students will <br> group different <br> sets of coins to <br> show the same <br> amount of money. | Display (using the <br> document camera and <br> Smartboard, Smart <br> Exchange activities, <br> bulletin board sets, etc. <br> a set of coins and count <br> its value. Demonstrate <br> how a coin can be <br> replaced with others <br> and not change value of <br> the original set. <br> Repeat the activity <br> using different money <br> amounts up to a dollar. | -Performance Task: <br> Draw different combinations of <br> coins for the same amount of <br> money. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick", <br> assessment <br> -Leveled homework | Math: 2.MD.8 <br> Technology: <br> 8.1.2.A.5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

| Counting and Writing Dollars and Cents | 1 day | Students will count money amounts greater than one dollar, and write the amount using a dollar sign and decimal point. | Show (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) a group of money using a dollar bill and coins. Model ordering and counting money from greatest to least value. Demonstrate proper use of dollar sign and decimal point rather than the cents symbol. | -Performance Task: <br> Count money and write the total amount using a dollar sign and decimal point. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" <br> assessment <br> -Leveled homework | Math: 2.MD. 8 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Adding Money Amounts | 1 day | Students will calculate the sum of money amounts with dollars and cents using the correct symbols. | Create a classroom store. Using priced items, students select two items for the teacher to buy. The teacher demonstrates how to arrange the money amounts as an addition problem, keeping the place values and money symbols aligned, and writing the sum properly. | -Performance Task: <br> Choose items to purchase and record items, prices, and totals. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment <br> -Leveled homework | Math: 2.MD. 8 |
| Subtracting <br> Money Amounts | 1 day | Students will subtract money amounts with dollars and cents | Create a classroom store. Using priced items, students select two items for the teacher to buy. The | -Performance Task: <br> Choose an item to purchase and find the correct amount of change from their "allowance." Record items, prices, and differences. | Math: 2.MD. 8 |

Sayreville Public Schools Curriculum Second Grade Mathematics

|  |  | using the correct <br> symbols. | teacher demonstrates <br> how to arrange the <br> money amounts as a <br> subtraction problem, <br> placing the larger <br> amount on top, keeping <br> the place values and <br> money symbols <br> aligned, and writing the <br> difference properly. | -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" <br> assessment <br> -Leveled homework |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Review and <br> Summative <br> Assessment | 5 days | Students will <br> demonstrate <br> comprehension of <br> concepts taught <br> throughout the <br> unit. | Review concepts, <br> introduce cumulative <br> project and give <br> guidelines, administer <br> test, and present <br> projects. | Review and Summative <br> Assessment | Math: <br> 2.MD.8 <br> ELA- <br> Literacy.RI.2.1 |
| Sugger |  |  |  |  |  |

## Suggested Modifications for Special Education, English Language Learners and Gifted Students:

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: larger money amounts, written explanations, projects. Material and instruction should be modified for below level learners and ELL: vocabulary cards, manipulatives, touch points, larger fonts, and fewer items.

## Suggested Technological Innovations/ Use: <br> Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.

## Cross Curricular/ $21^{\text {st }}$ Century Connections:

$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The activities included in this unit expose students to real life situations related to employment, everyday living and cultural diversity.

## Unit 10: Time, Data, and Graphing

Summary of the Unit: In this unit, students will learn the essentials of telling time, and collecting, organizing, and analyzing data. They will learn to tell time on digital and analog clocks, as well as the many ways to say the time shown on a clock. They will recognize that data collected can be shown in different ways, but still provide the same information. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope for this unit is 13 days.

## Enduring Understanding:

- Time can be given to the nearest five minutes. Time can be expressed using different units that are related to each other. A.M. and P.M. are used to designate certain time periods.
- Time can be expressed before or after the hour.
- Data can be organized in different ways.
- The lengths of objects can be organized in different ways. A line plot can be used as a visual representation of the relative lengths of objects.
- Each type of graph is most appropriate for certain kinds of data. Pictographs and bar graphs make it easy to comparedata.


## Essential Questions:

- When and why do we need to know how to tell the time on digital and analog clocks?
- How would our lives change without using time as a reference?
- Why is knowing how to gather data and record the information on graphs useful?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

-Cumulative Project: "Our Class's Daily Life"

Collect data about each student's daily schedule. For example, what time they wake up, do homework, have dinner, brush their teeth, and go to bed.
Students record their individual times on a data sheet.
The class shares their schedules with each other, and each child records tally marks on a graph specific to each task, showing how many students perform each task at a particular time.
Tally charts can then be transformed into either a pictograph, or a bar graph.
Students write a report about their data project.
-Unit test

## Resources:

enVision Math

## Literacy:

What Time Is It? by Sheila Keenan
Super Sand Castle Saturday by Stuart J. Murphy
It's About Time by Stuart J. Murphy

## Online State resources

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com
www.nlvm.usu.edu/
www.coolmath4kids.com
www.aplusmath.com/
www.kidsnumbers.com
www.factmonster.com
www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html
www.primarygames.com/fractions/start.htm

| Topic/ Selection | Suggested <br> Timeline <br> per topic | General <br> Objectives | Instructional Activities | Suggested <br> Benchmarks/ <br> Assessments | New Jersey <br> Student <br> Learning <br> Standards |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Telling Time to <br> Five Minutes | 2 days | Students will <br> associate numerals <br> on an analog clock | Display the numbers on a <br> clock as a straight number <br> line which skip counts by | -Performance task: <br> Show and write times <br> on a clock. | Math: 2.MD.7 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  | face with increments of five minutes. | fives. The number line should show how the numerals 1-12 on a clock are associated with the numbers 5-60/00. <br> Use a model clock (and individual student clocks) to show different times. Count together to identify the time shown. | -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Telling Time Before and After the Hour | 2 days | Students will read and express time in terms of quarter and half past an hour and before an hour. | Create student clocks. Partition clocks into quarters and halves. Identify numbers and minutes at the end of each part. Discuss and practice use of vocabulary and written expression for times before and after the hour. | -Performance task: Show and write times before and after an hour on a clock. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: 2.MD. 7 <br> Technology: <br> 8.1.2.A. 5 |
| Organizing Data | 4 days | Students will represent a set of data in a tally chart, bar graph, pictograph and line plot. | Day 1: Take a class survey on the Smartboard, allowing students to choose an item from a set to cast their vote. Arrange survey results on a tally chart. Analyze results. <br> Day 2: Use data collected on Day 1 to create a bar graph. Analyze results, and compare graphs. <br> Day 3: Use data collected on Day 1 to create a pictograph | -Performance task: <br> Display data on various graphs. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: 2.MD. 10 <br> Technology: <br> 8.1.2.A. 5 |

Sayreville Public Schools Curriculum Second Grade Mathematics

|  |  |  | using each symbol to <br> represent one, then two <br> votes. Analyze results and <br> compare graphs. <br> Day 4: Use data collected on <br> Day 1 to create a line plot. <br> Analyze results and compare <br> graphs. |  |
| :--- | :--- | :--- | :--- | :--- |

## Sayreville Public Schools Curriculum

## Unit 11: Geometry

Summary of the Unit: In this unit, students will be taught the study of shapes in space and spatial relationships. Being in their visual level of development, tactile and visual exploration of shapes in this unit will help with the students' understanding of geometry in their environment. This is important because it offers students to opportunities to relate math to the real world, as spatial ability is related to problem solving ability. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope of this unit is 13 days.

## Enduring Understanding:

- Three-dimensional or solid figures have length, width, and height. Many can be described, classified, and analyzed by their faces or flat surfaces, edges, and vertices. Many everyday objects closely approximate standard geometric solids.
- A shape can be identified by the number of its sides, vertices, angles.
- Some shapes can be combined to make new shapes. Some shapes can be decomposed into other shapes.
- Rectangles can be partitioned into equal squares.
- A region can be divided into equal-sized parts in different ways. Equal-sized parts of a region have the same area but not necessarily the same shape.


## Essential Questions:

- How does knowing about shapes help you interact with your world?
- How can structures be created by combining other shapes?
- How can the shapes which form a structure be identified?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

-Cumulative Project:
Students will search through magazines, newspapers, and images on the internet for examples of both plane and solid figures.
Students will glue the pictures to a poster, and identify the shapes and their attributes.
-Unit test.

## Resources:

enVision Math

## Literacy:

Captain Invincible and the Space Shapes by Stuart J. Murphy
All About Shapes by Irene Yates
Give Me Half by Stuart J. Murphy

## Online State resources:

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com
www.nlvm.usu.edu/
www.coolmath4kids.com
www.aplusmath.com/
www.kidsnumbers.com
www.factmonster.com
www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html
www.primarygames.com/fractions/start.htm
http://www.harcourtschool.com/thinkmath/index.html

| Topic/ Selection | Suggested <br> Timeline <br> per topic | General Objectives | Instructional Activities | Suggested <br> Benchmarks/ <br> Assessments | New <br> Jersey <br> Student <br> Learning <br> Standards |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Faces, Vertices, and <br> Edges | 1 day | Students will explore <br> solid figures and <br> identify them by the <br> amount of faces, <br> vertices, and edges. | Define and discuss terms. <br> Display (using the document <br> camera and Smartboard, Smart <br> Exchange activities, bulletin <br> board sets, solid figures, etc.) | -Performance task: <br> Identify and count <br> faces, vertices and <br> edges on geometric <br> solids. | Math: 2.G.1 <br> Technology <br> : 8.1.2.A.5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | solid figures and discuss attributes of each. | -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Relating Plane Shapes to Solid Figures | 1 day | Students will explore and identify the plane shapes that form the flat surfaces of solid figures. | Define and discuss terms. Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how when you trace around the edges of face on a 3dimensional figure, a plane shape can be seen. | -Performance task: Identify plane shapes that form the faces of geometric solids. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: 2.G. 1 <br> Technology <br> : 8.1.2.A. 5 |
| Polygons and Angles | 1 day | Students will explore, identify and draw polygons, and list their attributes. | Define and discuss terms. Discuss and display (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) polygons and their attributes. | -Performance task: <br> Identify polygons and their attributes. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | Math: 2.G. 1 <br> Technology $\text { : 8.1.2.A. } 5$ |
| Making New Shapes | 1 day | Students will combine shapes together to make new shapes, (trapezoids, parallelograms, and hexagons), and identify the number | Define and discuss terms. Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, pattern blocks, etc.) how some | -Performance task: Create new shapes and identify their attributes. <br> -Independent practice <br> -Centers <br> -Teacher observation | $\begin{aligned} & \text { Math: 2.G. } 1 \\ & \text { Technology } \\ & \text { : 8.1.2.A. } \end{aligned}$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  | of sides and vertices in each shape. | shapes can be put together to create new shapes. | -Teacher created "quick" assessment -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cutting Shapes Apart | 1 day | Students will separate a shape to create new shapes. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, pattern blocks, etc.) how some shapes can be separated to create new shapes. | -Performance task: Create new shapes and identify their attributes. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{array}{\|l} \hline \text { Math: 2.G. } 1 \\ \text { Technology } \\ \text { : 8.1.2.A.5 } \end{array}$ |
| Dividing Rectangles into Equal Squares | 1 day | Students will divide rectangles into equal squares and count how many squares are needed to completely partition the rectangle. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, pattern blocks, etc.) how a rectangle can be can be separated into rows and columns of squares. Write corresponding number sentences for rows and columns. | -Performance task: <br> Divide rectangles and write number sentences. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{array}{\|l} \hline \text { Math: 2.G. } 2 \\ \text { Technology } \\ \text { : 8.1.2.A. } 5 \end{array}$ |
| Wholes and Equal Parts | 1 day | Students will determine whether a shape has been divided into equal or unequal parts. IF the parts are equal, they will count and name the number of parts. | Define and discuss terms. Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, paper shapes, etc.) how a shape can be partitioned into halves, thirds, and fourths. | -Performance task: Partition shapes to show equal parts. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created <br> "quick" assessment <br> -Leveled homework | $\begin{array}{\|l} \hline \text { Math: 2.G. } 3 \\ \text { Technology } \\ \text { : 8.1.2.A.5 } \end{array}$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics
$\left.\begin{array}{|l|l|l|l|l|l|}\hline & & & & & \\ \hline \text { Use Reasoning } & 1 \text { day } & \begin{array}{l}\text { Students will use } \\ \text { clues to solve riddles } \\ \text { about plane shapes } \\ \text { and solid figures. }\end{array} & \begin{array}{l}\text { Share clues about attributes of } \\ \text { plane and solid figures and have } \\ \text { students choose the figure being } \\ \text { described in a set. }\end{array} & \begin{array}{l}\text {-Performance task: } \\ \text { Choose a figure } \\ \text { based on a } \\ \text { description. } \\ \text {-Independent practice } \\ \text {-Centers } \\ \text {-Teacher observation } \\ \text {-Teacher created } \\ \text { "quick" assessment } \\ \text {-Leveled homework }\end{array} & \text { Math: 2.G.1 }\end{array}\right\}$

## Suggested Modifications for Special Education, English Language Learners and Gifted Students:

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: written explanations, construction/deconstruction of shapes using puzzles, projects. Material and instruction should be modified for below level learners and ELL: vocabulary cards, manipulatives, and larger fonts, fewer items in sets, real life items, and geometric solids.

## Suggested Technological Innovations/ Use:

Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.
Cross Curricular/ $21^{\text {st }}$ Century Connections:
$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.
Developing children's geometric concepts and spatial sense is beneficial to them in other areas of math and the real world.

## Unit 12: Measurement

Summary of the Unit: In this unit, students will learn the essentials of measurement. They will learn to measure objects using different units. They will recognize that measurements can be taken and shown in different ways, but still provide the same information. The unit culminates with a project that includes all of these concepts, as well as writing for math. The approximate scope of this unit is 14 days.

## Enduring Understanding:

- The length of some objects is measureable.
- The length of any object can be used as a measurement unit for length, but a standard unit, such as an inch or centimeter, is always the same length.
- The length of any object can be used as a measurement unit for length, but a standard unit is always the same length.
- Measurement is a process of comparing a unit to the object being measured. The length of any object can be used asa measurement unit for length.
- Measurements in the same unit like inches can be added or subtracted in the same way as adding and subtracting whole numbers. The measurement unit needs to be written with the sum or difference.
- The length of two objects can be compared by subtracting to find the difference.


## Essential Questions:

- If you wanted to build your own playground, how would figure out how much space you had, and how many pieces of equipment would fit in your playground?
- How would you calculate different type of measurements without a ruler?
- Why is it important to know how to convert units of measurement?


## Summative Assessment and/ or Summative Criteria to demonstrate mastery of the Unit.

-Cumulative Project: "Rooms in My Home"
Students will choose three rooms in their home.
Students will find the perimeter of each room.
Students will convert measurement to different units and discuss which units require more and fewer to measure.
Students will compare the sizes of each room, explaining how they know how to order the room from largest to smallest.
Students write a report about their measurement projects.
-Unit test

## Resources:

enVision math

## Literacy:

Measuring Penny by Loreen Leedy

## Online State resources

http://www.p21.org/index.php?option=com_content\&task=view\&id=254\&Itemid=119
http://www.iste.org/standards/nets-for-students.aspx

## Links:

www.pearsonsuccessnet.com
www.nlvm.usu.edu/
www.coolmath4kids.com
www.aplusmath.com/
www.kidsnumbers.com
www.factmonster.com
www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html
www.primarygames.com/fractions/start.htm

| Topic/ Selection | Suggested <br> Timeline per <br> topic | General Objectives | Instructional <br> Activities | Suggested <br> Benchmarks/ <br> Assessments | New Jersey <br> Student <br> Learning <br> Standards |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Exploring Length | 1 day | Students will measure the <br> length of objects using <br> nonstandard units | Demonstrate (using <br> the document <br> camera and | -Performance Task: <br> Measure objects using <br> nonstandard units, and | Math: 2.MD.1 <br> Technology: <br> 8.1.2.A.5 |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  |  | Smartboard, Smart Exchange activities, bulletin board sets, etc.) how to measure items using various classroom objects instead of standard units of measure. | record objects and lengths. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment <br> -Leveled homework |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Inches | 1 day | Students will estimate and measure items using an inch ruler. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how to measure classroom objects using an inch ruler. | -Performance Task: Measure objects using an inch ruler, and record objects and lengths. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment <br> -Leveled homework | $\begin{aligned} & \text { Math: 2.MD.1, } \\ & \text { 2.MD.3 } \\ & \text { Technology: } \\ & \text { 8.1.2.A.5 } \end{aligned}$ |
| Centimeters and Meters | 2 days | Students will estimate and measure length and height using a centimeter ruler and meter stick. | Demonstrate (using the document camera and Smartboard, Smart Exchange activities, bulletin board sets, etc.) how to measure classroom objects using a centimeter ruler. | -Performance Task: <br> Measure objects using a centimeter ruler meter stick, and record objects and lengths. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment -Leveled homework etc.) | Math: 2.MD.1, <br> 2.MD. 3 <br> Technology: <br> 8.1.2.A. 5 |
| Inches, Feet and Yards | 2 days | Students will estimate and measure items that are | Demonstrate (using the document camera and | Performance Task: Measure classroom objects using a ruler, | $\begin{aligned} & \text { Math: 2.MD.3, } \\ & \text { 2.MD.1 } \end{aligned}$ |

Sayreville Public Schools Curriculum
Second Grade Mathematics

|  |  | about an inch, foot, and yard. | Smartboard, Smart Exchange activities, bulletin board sets, etc.) how to measure classroom objects using a ruler, yard stick, and tape measure | yard stick, and tape measure and record objects and lengths. <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment <br> -Leveled homework etc.) | Technology: 8.1.2.A. 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Comparing, Adding and Subtracting Units of Measure | 3 days | Students will measure objects using various units of measure. Students will compare the measurement of the same objects using different units. <br> Students will add distances to find perimeter. <br> Students will subtract measurements to find the difference of two objects' measurements. | Teacher will guide students through measurement of classroom objects and use of mathematical operations to compare, add, and subtract measurements. | -Performance Task: <br> Find the lengths and heights of classroom objects, and determine which units require more or less to measure them. Find the perimeter of an object. <br> Measure and find the difference in length of two objects <br> -Independent practice <br> -Centers <br> -Teacher observation <br> -Teacher created "quick" assessment <br> -Leveled homework etc.) | $\begin{aligned} & \text { Math: 2.MD.2, } \\ & \text { 2.MD.4, } \\ & \text { 2.MD.5 } \end{aligned}$ |
| Review and Summative Assessment | 5 days | Students will demonstrate comprehension of concepts taught throughout the unit. | Review concepts, introduce cumulative project and give guidelines, administer test, and present projects. | Review and Summative Assessment | $\begin{aligned} & \hline \text { Math: 2.MD.1- } \\ & 5 \\ & \text { ELA- } \\ & \text { Literacy.RI.2.1 } \end{aligned}$ |

## Suggested Modifications for Special Education, English Language Learners and Gifted Students: <br> \section*{Suggested Modifications for Special Education, English Language Learners and Gifted Students:}

Modifications should be consistent with 504s and IEPs. Enrichment/extension activities should be provided for advanced learners: larger objects, conversion to other units of measure, written explanations, and projects. Material and instruction should be modified for below level learners and ELL: vocabulary cards, manipulatives, and smaller objects.

## Suggested Technological Innovations/ Use:

Smartboard and document camera, ipads, ChromeBooks, Smart Exchange, Brainpop Jr., etc.

## Cross Curricular/ 21 ${ }^{\text {st }}$ Century Connections:

$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problemsolving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. The activities included in this unit enrich writing in the math classroom, as well as broaden students' understanding of the diversity among their classmates. The activities also help them acquire useful spatial skills and understanding.

## Cross Curricular/ $21{ }^{\text {st }}$ Century Connections:

$9.121^{\text {st }}$ Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem-
solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

