Deal School Curriculum

Mathematics
Curriculum Guide
Kindergarten

Deal School
Deal, New Jersey

2018
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Course Introduction

The *Envisions Math* program fully aligns with the national Common Core State Standards for Kindergarten Mathematics. The program is distinguished by its focus on real-life problem solving, balance between whole-class and self-directed learning, emphasis on communication, facilitation of school-family cooperation, and appropriate use of technology.

The projects, class games, and computer games are designed to help students to revisit skills learned and apply what they learned to real life situations.

Purpose

Our purpose is to have all of our students acquire the mathematical skills, understandings, and attitudes that they will need to be successful in their careers and daily lives.

Assessments

Throughout the course students will demonstrate their knowledge daily during mental math and math message activities. Students will be assessed on daily quick checks, unit projects, written and self-assessments and open ended response problems.

Deal School Curriculum
Kindergarten Mathematics – Counting and Cardinality

Know number names and the count sequence.

NJSLS.MATH.CONTENT.K.CC.A.1

Count to 100 by ones and by tens.

NJSLS.MATH.CONTENT.K.CC.A.2

Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

NJSLS.MATH.CONTENT.K.CC.A.3

Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

Count to tell the number of objects.

NJSLS.MATH.CONTENT.K.CC.B.4

Understand the relationship between numbers and quantities; connect counting to cardinality.

NJSLS.MATH.CONTENT.K.CC.B.4.A

When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

NJSLS.MATH.CONTENT.K.CC.B.4.B

Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

NJSLS.MATH.CONTENT.K.CC.B.4.C

Understand that each successive number name refers to a quantity that is one larger.

NJSLS.MATH.CONTENT.K.CC.B.5

Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

Compare numbers.

NJSLS.MATH.CONTENT.K.CC.C.6

Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.1

Enduring Understandings	**Essential Questions**
1. Numbers can be represented in multiple ways. 2. The same operations can be applied in problem situations that seem quite different from another. 3. Being able to compute fluently	1. What makes an estimate reasonable? 2. What makes an answer exact? 3. What makes a strategy both effective and efficient? 4. What makes a solution optimal?

Learners will know…	Learners will be able to….
means making smart choices about which tools to use and when to use them. 4. Knowing the reasonableness of an answer comes from using good number sense and estimation strategies.	
Learners will know…	**Learners will be able to….**
● Each number has a name. ● Counting is the process of determining the number of objects in a set. ● The last number name said tells the number of objects counted. ● The number of objects is the same regardless of their arrangement or the order in which they were counted. ● Each successive number name refers to a quantity that is one larger. ● The number of objects in one group is greater than, less than, or equal to the number of objects in another group.	● Count to 100 by ones and by tens. ● Count forward beginning from a given number within the known sequence. ● Write numbers from 0 to 20. ● Represent a number of objects with a written numeral 0-20. ● Understand the relationship between numbers and quantities; connect counting to cardinality. ● When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. ● Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration. ● Given a number from 1-20, count out that many objects. ● Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Assessment Evidence
Formative Assessments Quick Checks Exit Slips Homework Checklist Assessments Center Products

Thumbs Up
Exit Slips
Think Pair Share
Turn and Talks
Student Self-Assessment
Class Discussion
Dry-Erase Board Assessment

<u>Summative Assessments</u>
Unit Assessments
Quizzes
Project Specific Rubrics
Group Project Products

<u>Benchmark Assessments</u>
Big Ideas Pre-Assessment
Big Ideas Post-Assessment
Big Ideas Course Benchmarks
LinkIt! Benchmark A
LinkIt! Benchmark B
LinkIt! Benchmark C

<u>Alternative Assessments</u>
Project Specific Rubrics
Group Project Products

Suggested Learning Plan

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- Warm Up/ Dig In
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  - Direct instruction and modeling.
  - Partner practice and discovery.
- Think and Grow
  - Guided practice
  - Student conferences
  - Reteaching
- Apply and Grow - Independent Practice
- Think and Grow - Modeling Real Life
- Differentiated instruction and homework assignment.

Connect and Grow: Centers for reteaching and independent practice.
Assessments: Concept testing and performance tasks.

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Chapter Assessments
Vocabulary Cards
Activities
Counting Stories
Blackline Masters
Literature Kits
Math Musicals
Youtube Videos
Jack Hartman - Let's Get Fit- Count to 100
https://www.youtube.com/watch?v=0TgLtF3PMOc

Jack Hartman- Count by 5's
https://www.youtube.com/watch?v=amxVL9KUmq8

Calendar Skills
Number Bingo
Dry Erase Boards
Smart Notebook
Shaving Cream
Sand Trays
Number Cards

Scope and Sequence/ Pacing Guide

https://docs.google.com/document/d/1rdWKaHExq3FGYEI_0C9aSHBtqCEwitZv-Pg14EyOOKQ/edit?usp=sharing

21st Century Life and Careers

Career Ready Practices
CRP2. Apply appropriate academic and technical skills

CRP4. Communicate clearly and effectively and with reason
CRP6. Demonstrate creativity and innovation.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity.

Personal Financial Literacy
9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for
future academic and career success.

Accommodations and Modifications

Gifted and Talented
- Provide appropriate challenge for a wide ranging skills and development.
- Participate in inquiry and project-based learning units of study.
- Provide options, alternatives and choices to differentiate and broaden the curriculum

English Language Learners
- Pair visual prompts with verbal presentations.
- Provide students with visual models, sentence stems, concrete objects, and hands-on material.
- Assign a picture or movement to vocabulary words

Students with IEPs/504s
- Review student individual education plan and/or 504 plan
- Establish procedures for accommodations and modifications for assessments as per IEP/504.
- Modify classroom environment to support academic and physical needs of the students per IEP/504.

At-Risk Learners
- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- Differentiated instruction
- Basic Skills
- Provide instructional interventions in the general education classroom.
- Preferential Seating
- Allow extra time to complete assignments or assessments
- Modified Assessments

Interdisciplinary Connection/Cross Curricular Opportunities
Literacy Connection

With adult support, students use trade books (read-alouds, big books) to learn about and discuss numbers.

3.2.K.4.RL.K.10 Actively engage in group reading activities with purpose and understanding.

3.2.K.1.RL.K.2 With prompting and support retell familiar stories including key details (e.g. who what where when why how).

3.6.K.1.W.K.2 Use a combination of drawing dictating and writing to compose informative explanatory texts in which they name what they are writing about and supply some information about the topic.

With adult support, students use vocabulary strategies to understand math vocabulary for each unit.

3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

3.8.K.1.SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A.Follow agreed-upon norms for discussions (e.g. listening to others with care and taking turns speaking about the topics and texts under discussion). B.Continue a conversation through multiple exchanges

Science Connection

With adult support, students will collect numerical data.
K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.
1.K-3.K.1.SEP-1 Make observations (firsthand or from media) to collect data that can be used to make comparisons.

K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

Integration of Technology

8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Deal School Curriculum
Kindergarten Mathematics – Geometry

Identify and describe shapes.
NJSLS.MATH.CONTENT.K.G.A.1
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
NJSLS.MATH.CONTENT.K.G.A.2
Correctly name shapes regardless of their orientations or overall size.
NJSLS.MATH.CONTENT.K.G.A.3
Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
Analyze, compare, create, and compose shapes.
NJSLS.MATH.CONTENT.K.G.B.4
Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
NJSLS.MATH.CONTENT.K.G.B.5
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
NJSLS.MATH.CONTENT.K.G.B.6
Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

Enduring Understandings	Essential Questions
Two- and three-dimensional objects can be described, classified, and analyzed by their attributes. An object in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape. 3. An object's location on a plane or in space can be described quantitatively. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other	1. Why do we compare contrast and classify objects? 2. How do decomposing and recomposing shapes help us build our understanding of mathematics? 3. How can transformations be described mathematically?

Learners will know…	Learners will be able to….
● Objects can be described in the environment using the names of the shapes. ● The relative positions of objects can be described in the environment using terms such as above, below, beside, in front of, behind, and next to. ● The names of shapes do not change regardless of their orientations or overall size.	● Describe objects in the environment using names of shapes. ● Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to. ● Correctly name shapes regardless of their orientations or overall size. ● Identify shapes as two-dimensional

● Shapes are described as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). ● Similarities and differences, parts, and other attributes are used to analyze and compare two- and three-dimensional shapes. ● Simple shapes can be combined to form larger shapes.	(lying in a plane, "flat") or three-dimensional ("solid"). ● Analyze two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). ● Compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). ● Model shapes in the world by building shapes from components (e.g., sticks and clay balls). ● Model shapes in the world by drawing shapes. ● Compose simple shapes to form larger shapes.

Assessment Evidence

Formative Assessments
Quick Checks
Exit Slips
Homework
Checklist Assessments
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Connect and Grow: Centers for reteaching and independent practice.
Assessments: Concept testing and performance tasks.

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Number Bingo
Dry Erase Boards
Smart Notebook
Shaving Cream
Sand Trays

21st Century Life and Careers

Career Ready Practices
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CRP4. Communicate clearly and effectively and with reason
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CRP11. Use technology to enhance productivity.

Personal Financial Literacy
9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Accommodations and Modifications

Gifted and Talented
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Interdisciplinary Connection/Cross Curricular Opportunities

<u>Literacy Connection</u>
With adult support, students use trade books (read-alouds, big books) to learn about and discuss geometric shapes.
3.2.K.4.RL.K.10 Actively engage in group reading activities with purpose and understanding.

3.2.K.1.RL.K.2 With prompting and support retell familiar stories including key details (e.g. who what where when why how).

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3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

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Integration of Technology
8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums). **8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.** **8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.**

Deal School Curriculum
Kindergarten Mathematics – Measurement and Data

Describe and compare measurable attributes.
NJSLS.MATH.CONTENT.K.MD.A.1
Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
NJSLS.MATH.CONTENT.K.MD.A.2
Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
Classify objects and count the number of objects in each category.
NJSLS.MATH.CONTENT.K.MD.B.3
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.1

Enduring Understandings	Essential Questions
1. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other.	1. How are measurement and counting related? 2. How does *what* we measure affect *how* we measure? 3. 3. How can space be defined through numbers/measurement?

Learners will know…	Learners will be able to….
● Objects are measurable by attributes such as length or weight**.** ● Two objects with a measurable attribute in common can be directly compared, to see which object has "more of"/"less of" the attribute, and describe the difference. ● Objects can be classified into given categories. ● The number of objects in each category can be counted and sorted.	● Describe measurable attributes of objects, such as length or weight. ● Describe several measurable attributes of a single object. ● Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. ● Classify objects into given categories. ● Count the numbers of objects in each category and sort the categories by count.

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8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Deal School Curriculum
Kindergarten Mathematics – Number and Operations in Base Ten

Extend the counting sequence.
NJSLS.MATH.CONTENT.1.NBT.A.1
Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.
NJSLS.MATH.CONTENT.1.NBT.B.2
Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
NJSLS.MATH.CONTENT.1.NBT.B.2.A
10 can be thought of as a bundle of ten ones — called a "ten."
NJSLS.MATH.CONTENT.1.NBT.B.2.B
The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
NJSLS.MATH.CONTENT.1.NBT.B.2.C
The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
NJSLS.MATH.CONTENT.1.NBT.B.3
Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

Use place value understanding and properties of operations to add and subtract.
NJSLS.MATH.CONTENT.1.NBT.C.4
Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
NJSLS.MATH.CONTENT.1.NBT.C.5
Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
NJSLS.MATH.CONTENT.1.NBT.C.6
Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used

Enduring Understandings	Essential Questions

1. Numbers can be represented in multiple ways. 2. The same operations can be applied in problem situations that seem quite different from another. 3. Being able to compute fluently means making smart choices about which tools to use and when to use them. 4. Knowing the reasonableness of an answer comes from using good number sense and estimation strategies.	1. What makes an estimate reasonable? 2. What makes an answer exact? 3. What makes a strategy both effective and efficient? 4. What makes a solution optimal?
Learners will know…	**Learners will be able to….**
● The two digits of a two-digit number represent amounts of tens and ones. ● 10 can be thought of as a bundle of ten ones — called a "ten." ● The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. ● The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). ● Two-digit numbers are compared based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. ● Adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, is done by using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. In adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to	● Count to 120, starting at any number less than 120. ● In this range, read and write numerals and represent a number of objects with a written numeral. ● Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. ● Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. ● Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. ● Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete

compose a ten. ● It is possible that given a two-digit number, mentally find 10 more or 10 less than the number, without having to count. ● Subtracting multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences) can by done by using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ● Relate the strategy to a written method and explain the reasoning used. ● Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ● Relate the strategy to a written method and explain the reasoning used**.**

Assessment Evidence

Formative Assessments
Quick Checks
Exit Slips
Homework
Checklist Assessments
Center Products
      Thumbs Up
      Exit Slips
      Think Pair Share
Turn and Talks
Student Self-Assessment
Class Discussion
Dry-Erase Board Assessment

Summative Assessments
Unit Assessments
Quizzes
Project Specific Rubrics
Group Project Products

Benchmark Assessments
Big Ideas Pre-Assessment
Big Ideas Post-Assessment
Big Ideas Course Benchmarks

LinkIt! Benchmark A
LinkIt! Benchmark B
LinkIt! Benchmark C

Alternative Assessments

Project Specific Rubrics
Group Project Products

Mathematics will be taught for 43 minutes per day with a format that resembles:

- Warm Up/ Dig In
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  - Direct instruction and modeling.
  - Partner practice and discovery.
- Think and Grow
  - Guided practice
  - Student conferences
  - Reteaching
- Apply and Grow - Independent Practice
- Think and Grow - Modeling Real Life
- Differentiated instruction and homework assignment.

Connect and Grow: Centers for reteaching and independent practice.
Assessments: Concept testing and performance tasks.

Big Ideas Math Modeling Real Life - Teacher Resources
https://www.bigideasmath.com/BIM/login

Big Ideas Math Manipulative Kit
Student Edition
Teaching Edition
Family Letters
Warm-Ups
Extra Practice
Reteach
Enrichment and Extension
Prerequisite Skills Practice
Pre and Post Course Assessments
Course Benchmark Assessments
Chapter Assessments
Vocabulary Cards
Activities

Counting Stories
Blackline Masters
Literature Kits
Math Musicals
Calendar Skills
Number Bingo
Dry Erase Boards
Smart Notebook
Shaving Cream
Sand Trays
Number Cards

Scope and Sequence/ Pacing Guide

https://docs.google.com/document/d/1rdWKaHExq3FGYEI_0C9aSHBtqCEwitZv-Pg14EyOOKQ/edit?usp=sharing

21st Century Life and Careers

Career Ready Practices
CRP2. Apply appropriate academic and technical skills
CRP4. Communicate clearly and effectively and with reason
CRP6. Demonstrate creativity and innovation.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity.

Personal Financial Literacy
9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for
future academic and career success.
.

Accommodations and Modifications

Gifted and Talented
- ● Provide appropriate challenge for a wide ranging skills and development.
- ● Participate in inquiry and project-based learning units of study.
- ● Provide options, alternatives and choices to differentiate and broaden the curriculum

English Language Learners
- ● Pair visual prompts with verbal presentations.
- ● Provide students with visual models, sentence stems, concrete objects, and hands-on material.
- ● Assign a picture or movement to vocabulary words

Students with IEPs/504s
- ● Review student individual education plan and/or 504 plan

- Establish procedures for accommodations and modifications for assessments as per IEP/504.
- Modify classroom environment to support academic and physical needs of the students per IEP/504.

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- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
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- Basic Skills
- Provide instructional interventions in the general education classroom.
- Preferential Seating
- Allow extra time to complete assignments or assessments
- Modified Assessments

Interdisciplinary Connection/Cross Curricular Opportunities

Literacy Connection

With adult support, students use trade books (read-alouds, big books) to learn about and discuss numbers.

3.2.K.4.RL.K.10 Actively engage in group reading activities with purpose and understanding.

3.2.K.1.RL.K.2 With prompting and support retell familiar stories including key details (e.g. who what where when why how).

3.6.K.1.W.K.2 Use a combination of drawing dictating and writing to compose informative explanatory texts in which they name what they are writing about and supply some information about the topic.

With adult support, students use vocabulary strategies to understand math vocabulary for each unit.

3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

3.8.K.1.SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A.Follow agreed-upon norms for discussions (e.g. listening to others with care and taking turns speaking about the topics and texts under discussion). B.Continue a conversation through multiple exchanges

Science Connection

With adult support, students will collect numerical data.
1.K-3.K.1.SEP-1 Make observations (firsthand or from media) to collect data that can be used to make comparisons.

K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Deal School Curriculum
Kindergarten Mathematics – Operations and Algebraic Thinking

Understand addition, and understand subtraction.

NJSLS.MATH.CONTENT.K.OA.A.1

Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

NJSLS.MATH.CONTENT.K.OA.A.2

Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

NJSLS.MATH.CONTENT.K.OA.A.3

Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).

NJSLS.MATH.CONTENT.K.OA.A.4

For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

NJSLS.MATH.CONTENT.K.OA.A.5

Demonstrate fluency for addition and subtraction within 5.

Enduring Understandings	Essential Questions
1. Change is fundamental to understanding functions. 2. Numbers or objects that repeat in predictable ways can be described or generalized. 3. An operation can be "undone" by its inverse. 4. Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.	1. How can change be described mathematically? 2. How are patterns of change related to the behavior of functions? 3. How do mathematical models/representations shape our understanding of mathematics?
Learners will know…	**Learners will be able to….**
● Addition and subtraction can be represented with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	● Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ● Solve addition and subtraction

● Using objects or drawings to represent the problem can do solving addition and subtraction word problems, and adding and subtracting within 10. ● Numbers less than or equal to 10 are decomposed into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). ● For any number from 1 to 9, there is another number that makes 10 when added to the given number by using objects or drawings, and record the answer with a drawing or equation.	word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. ● Decompose numbers less than or equal to 10 into pairs in more than one way. ● For any number from 1 to 9, find the number that makes 10 when added to the given number by using objects or drawings, and record the answer with a drawing or equation. ● Fluently add and subtract within 5.

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CRP6. Demonstrate creativity and innovation.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
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Personal Financial Literacy
9.1.4.B.1 - Differentiate between financial wants and needs.

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9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for
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Science Connection

With adult support, students will collect numerical data.

K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.
1.K-3.K.1.SEP-1 Make observations (firsthand or from media) to collect data that can be used to make comparisons.

K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

Integration of Technology

8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Annual Pacing Guide
Grade Level: Kindergarten
Subject: Math

September	October	November	December	January
(12 days) ount and Write Numbers 0 to 5	**(9 days)** Compare Numbers 0 to 5 **(15 days)** Count and Write Numbers 6 to 10	**(15 days)** Count and Write Numbers 6 to 10 **(9 days)** Compare Numbers to 10	**(9 days)** Compare Numbers to 10 **(12 days)** Compose and Decompose Numbers to 10	**(12 days)** Compose and Decompo Numbers to 10 **(12 Days)** Add Numbers Within 1

February	March	April	May	June
(12 Days) dd Numbers Within 10 **(11 Days)** ubtract Numbers Within 10	**(15 days)** Represent Numbers 11 to 19 **(10 days)** Count and Compare Numbers to 20	**(10 days)** Count to 100 **(11 days)** Identify Two Dimensional Shapes	**(11 days)** Identify Two Dimensional Shapes **(10 days)** Identify Three Dimensional Shapes and Positions	**(11 Days)** Measure and Compar Objects

Vorking document.

Update as needer

Annual Pacing Guide
Grade Level: Kindergarten
Subject: Math

Deal School Curriculum

Mathematics
Curriculum Guide
Grade 1

Deal School
Deal, New Jersey

2018
Board of Education

Dennis Melofchik, President
Kaye Jannarone, Vice President

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Donna Rienzo
David Tawil

Administration

Donato Saponaro, Jr.
Superintendent of Schools

Curriculum Writing Committee

<u>Administration</u>

Donato Saponaro, Jr.

<u>Consultant/Curriculum Development</u>

Nick Montesano

<u>Teacher(s)</u>

Alexis Moskov

<u>Developed and Written</u>

August – November 2014

<u>Revised</u>

December 2018

<u>Board Approved</u>

December 2018

Course Introduction

The *Envisions Math* program fully aligns with the national Common Core State Standards for Grade 1 Mathematics. The program is distinguished by its focus on real-life problem solving, balance between whole-class and self-directed learning, emphasis on communication, facilitation of school-family cooperation, and appropriate use of technology.

The projects, class games, and computer games are designed to help students to revisit skills learned and apply what they learned to real life situations.

Purpose

Our purpose is to have all of our students acquire the mathematical skills, understandings, and attitudes that they will need to be successful in their careers and daily lives.

Assessments

Throughout the course students will demonstrate their knowledge daily during mental math and math message activities. Students will be assessed on daily quick checks, unit projects, written and self-assessments and open-ended response problems.

Deal School Curriculum
Grade 1 Mathematics – Geometry

Reason with shapes and their attributes.

NJSLS.MATH.CONTENT.1.G.A.1

Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

NJSLS.MATH.CONTENT.1.G.A.2

Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

NJSLS.MATH.CONTENT.1.G.A.3

Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Enduring Understandings	**Essential Questions**
o- and three-dimensional objects can be described, classified, and analyzed by their attributes. bject in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape. bject's location on a plane or in space can be described quantitatively. ar measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other	1. Why do we compare contrast and classify objects? 2. How do decomposing and recomposing shapes help us build our understanding of mathematics? 3. How can transformations be described mathematically?
Learners will know…	**Learners will be able to….**
● Shapes are distinguished by both defining attributes and non-defining attributes. ● Shapes can be built and drawn possessing defining attributes. ● Compose two-dimensional shapes and three-dimensional shapes can be used to create a composite shape. ● New shapes can be composed of composite shapes.	● Distinguish between defining attributes versus non-defining attributes. ● Build and draw shapes to possess defining attributes. ● Compose two-dimensional shapes or three-dimensional shapes to create a composite shape ● Compose new shapes from the composite shape. ● Partition circles and rectangles

● Circles and squares can be partitioned into equal shapes. ● The partitions can be described using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. ● The whole can be described as two of or four of the shares. ● The shapes that result from such decomposing are equal shares creating smaller shapes.	into two and four equal shares. ● Describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. ● Describe the whole as two of, or four of the shares. ● Understand for these examples that decomposing into more equal shares creates smaller shares.

Assessment Evidence

Formative Assessment
Homework
      Thumbs Up
      Exit Slips
      Think Pair Share
      Group Reporters
      Learning Logs
      Reading Journals
      Turn and Talks
Group Project Products
Center Products
Writing Samples
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Class Discussion
Dry erase board assessment

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Unit Assessments
Weekly Assessments
Quick Checks
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    - Direct instruction and modeling.
    - Partner practice and discovery.
- Think and Grow
    - Guided practice
    - Student conferences
    - Reteaching
- Apply and Grow: Independent Practice
- Think and Grow: Modeling Real Life
- Differentiated instruction and homework assignment.

Review day:Connect and Grow: Centers for reteaching and independent practice.
Assessments day: Concept testing and performance tasks.

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Teaching Edition
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Pre-and Post-Course Tests
Course Benchmarks Tests
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Blackline masters
Big Ideas Math math manipulatives kit
Literature kits
Math Musicals
Big Ideas Math Center
Calendar Math

Addition/Subtraction Bingo
www.gonoodle.com

21st Century Life and Careers

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9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

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CPR2. Apply appropriate academic and technical skills
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9.1.4.B.1 Differentiate between financial wants and needs.

Accomodations and Modifications

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- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- Differentiated instruction
- Basic Skills
- Provide instructional interventions in the general education classroom.
- preferential seating

- organize and offer flexible small group learning activities
- modify assessments

ELA CONNECTIONS

3.9.K.3.NJSLSA.L6
Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

3.7.K.1.NJSLSA.SL1
Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.

3.7.K.2.NJSLSA.SL5
Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

3.5.K.2.NJSLSA.W6
Use technology including the Internet to produce and publish writing and to interact and collaborate with others.

SCIENCE CONNECTIONS

1.1-3.1.2.DCI-1
Seasonal patterns of sunrise and sunset can be observed described and predicted.

1.1-1.1.2.CC-1
Simple tests can be designed to gather evidence to support or refute student ideas about causes

1.2-4.2.1.DCI-2
Asking questions making observations and gathering information are helpful in thinking about problems.

Integration of Technology

8.1.2.A.4
Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.E.1
Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1
Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Deal School Curriculum
Grade 1 Mathematics – Measurement and Data

Measure lengths indirectly and by iterating length units.

NJSLS.MATH.CONTENT.1.MD.A.1

Order three objects by length; compare the lengths of two objects indirectly by using a third object.

NJSLS.MATH.CONTENT.1.MD.A.2

Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

Tell and write time.

NJSLS.MATH.CONTENT.1.MD.B.3

Tell and write time in hours and half-hours using analog and digital clocks.

Represent and interpret data.

NJSLS.MATH.CONTENT.1.MD.C.4

Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Enduring Understandings	Essential Questions
1. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other.	1. How are measurement and counting related? 2. How does *what* we measure affect *how* we measure? 3. 3. How can space be defined through numbers/measurement?
Learners will know…	**Learners will be able to….**
● Objects may be ordered by length. ● Length may be used to compare objects. ● The length of an object can be expressed as a whole number of length units, by laying multiple copies of a shorter object, end to end. ● The length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. ● Digital and analog clocks help	● Order three objects by length. ● Compare the lengths of two objects indirectly by using a third object. ● Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object, end to end. ● Understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. ● Tell and write time in hours and half-hours using analog and digital clocks.

us to tell time by the hour and the half-hour. ● Data is organized, represented, and interpreted with multiple categories. ● Data can be examined by the total number of data points, how many in each category, and how many more or less are in one category than in another.	● Organize, represent, and interpret data with up to three categories ● Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

<div align="center">

Assessment Evidence

</div>

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Enrichment and extension
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Big Ideas Math Center
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Addition/Subtraction Bingo

Scope and Sequence/pacing Guide
https://docs.google.com/document/d/1dPMeRhhS_pupNVilZSqx0QcFXuTsYQdLA_Nt6HeJmLw/edit?usp=sharing

21st Century Life and Careers

Career Awareness, Exploration, and Preparation
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Career Ready Practices
CPR2. Apply appropriate academic and technical skills
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CPR6. Demonstrate creativity and innovation
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them
CRP11. Use technology to enhance productivity

Personal Financial Literacy
9.1.4.B.1 Differentiate between financial wants and needs

Accomodations and Modifications

Gifted and Talented
- Provide appropriate challenge for a wide ranging skills and development.
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3.7.K.1.NJSLSA.SL1
Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.

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Simple tests can be designed to gather evidence to support or refute student ideas about causes

1.2-4.2.1.DCI-2
Asking questions making observations and gathering information are helpful in thinking about problems.

Integration of Technology

8.1.2.A.4
Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.E.1
Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1

Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Deal School Curriculum
Grade 1 Mathematics – Number and Operations in Base Ten
Desired Outcomes

Extend the counting sequence.
NJSLS.MATH.CONTENT.1.NBT.A.1
Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
Understand place value.
NJSLS.MATH.CONTENT.1.NBT.B.2
Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
NJSLS.MATH.CONTENT.1.NBT.B.2.A
10 can be thought of as a bundle of ten ones — called a "ten."
NJSLS.MATH.CONTENT.1.NBT.B.2.B
The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
NJSLS.MATH.CONTENT.1.NBT.B.2.C
The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
NJSLS.MATH.CONTENT.1.NBT.B.3
Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
Use place value understanding and properties of operations to add and subtract.
NJSLS.MATH.CONTENT.1.NBT.C.4
Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
NJSLS.MATH.CONTENT.1.NBT.C.5
Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
NJSLS.MATH.CONTENT.1.NBT.C.6
Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Enduring Understandings	Essential Questions
1. Numbers can be represented in multiple ways. 2. The same operations can be applied in problem situations that seem quite different from another. 3. Being able to compute fluently means making smart choices about which tools to use and when to use them. 4. Knowing the reasonableness of an answer comes from using good number sense and estimation strategies.	1. What makes an estimate reasonable? 2. What makes an answer exact? 3. What makes a strategy both effective and efficient? 4. What makes a solution optimal?
Learners will know…	**Learners will be able to….**

● The two digits of a two-digit number represent amounts of tens and ones.
● 10 can be thought of as a bundle of ten ones — called a "ten."
● The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
● The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
● Two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
● Adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction allows one to add within 100.
● When adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
● To subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or
	● Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
	● Understand that the two digits of a two-digit number represent amounts of tens and ones.
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	    o 10 can be thought of as a bundle of ten ones — called a "ten."
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	● Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
	● Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or

zero differences), one can use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ● All strategies can be related to a written method to explain the reasoning used.	drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction ● Relate the strategy to a written method and explain the reasoning used. ● Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. ● Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. ● Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used.

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Deal School Curriculum
Grade 1 Mathematics – Operations and Algebraic Thinking
Desired Outcomes

Represent and solve problems involving addition and subtraction.
NJSLS.MATH.CONTENT.1.OA.A.1
Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.1
NJSLS.MATH.CONTENT.1.OA.A.2
Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
Understand and apply properties of operations and the relationship between addition and subtraction.
NJSLS.MATH.CONTENT.1.OA.B.3
Apply properties of operations as strategies to add and subtract.2 Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) (students need not use formal terms for these properties)
NJSLS.MATH.CONTENT.1.OA.B.4
Understand subtraction as an unknown-addend problem. For example, subtract 10 - 8 by finding the number that makes 10 when added to 8.
Add and subtract within 20.
NJSLS.MATH.CONTENT.1.OA.C.5
Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
NJSLS.MATH.CONTENT.1.OA.C.6
Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
Work with addition and subtraction equations.
NJSLS.MATH.CONTENT.1.OA.D.7
Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 - 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.
NJSLS.MATH.CONTENT.1.OA.D.8
Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 +? = 11, 5 = _ - 3, 6 + 6 = _.

Enduring Understandings	Essential Questions
1. Change is fundamental to understanding functions. 2. Numbers or objects that repeat in predictable ways can be described or generalized. 3. An operation can be "undone" by its inverse. 4. Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.	1. How can change be described mathematically? 2. How are patterns of change related to the behavior of functions? 3. How do mathematical models/representations shape our understanding of mathematics?
Learners will know…	**Learners will be able to….**
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Big Ideas Math Center
Calendar Math
Addition/Subtraction Bingo
www.gonoodle.com

21st Century Themes and Skills

Career Awareness, Exploration, and Preparation
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Career Ready Practices
CPR2. Apply appropriate academic and technical skills
CPR4. Communicate clearly and effectively and with reason
CPR6. Demonstrate creativity and innovation
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them
CRP11. Use technology to enhance productivity

Personal Financial Literacy
9.1.4.B.1 Differentiate between financial wants and needs

Accomodations and Modifications

Gifted and Talented
- Provide appropriate challenge for a wide ranging skills and development.
- Participate in inquiry and project-based learning units of study.

English Language Learners
- Pair visual prompts with verbal presentations.
- Provide students with visual models, sentence stems, concrete objects, and hands-on material.

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- Review student individual education plan and/or 504 plan
- Establish procedures for accommodations and modifications for assessments as per IEP/504.
- Modify classroom environment to support academic and physical needs of the students per IEP/504.

At-Risk Learners
- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- Differentiated instruction
- Basic Skills
- Provide instructional interventions in the general education classroom.
- preferential seating
- organize and offer flexible small group learning activities
- modify assessments

Interdisciplinary Connections/Cross Curricular Opportunities

ELA CONNECTIONS

3.9.K.3.NJSLSA.L6
Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

3.7.K.1.NJSLSA.SL1
Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.

3.7.K.2.NJSLSA.SL5
Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

3.5.K.2.NJSLSA.W6
Use technology including the Internet to produce and publish writing and to interact and collaborate with others.

SCIENCE CONNECTIONS

1.1-3.1.2.DCI-1
Seasonal patterns of sunrise and sunset can be observed described and predicted.

1.1-1.1.2.CC-1
Simple tests can be designed to gather evidence to support or refute student ideas about causes

1.2-4.2.1.DCI-2
Asking questions making observations and gathering information are helpful in thinking about problems
.

Integration of Technology

8.1.2.A.4
Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.E.1
Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1
Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Annual Pacing Guide
Grade Level:
Subject:

MATH

September	October	November	December	January
3 days) Addition and btraction Situations	(13 days) Fluency and Strategies within 10 (12 days) More Addition and Subtraction Situations	(continued) More Addition and Subtraction Situations (12 days) Add Numbers within 20	(continued) Add Numbers within 20 (11 days) Subtract Numbers within 20	(13 days) Count and Write Numbers to 120 (10 days) Compare 2 digit Numbers

February	March	April	May	June
ontinued) ompare 2 digit umbers 2 days) d and Subtract Tens	(10 days) Add Two-Digit Numbers (9 days) Measure and Compare Lengths	(9 days) Represent and Interpret Data (8 days) Tell Time	(continued) Tell Time (13 days) Two and Three Dimensional Shapes	(7 days) Equal Shares

Deal School Curriculum

Mathematics
Curriculum Guide
Grade 2

Deal School
Deal, New Jersey

Deal School
Deal, New Jersey

2018
Board of Education

Dennis Melofchik, President
Kaye Jannarone, Vice President

Michael Sorrentino
Donna Rienzo
David Tawil

Administration

Donato Saponaro, Jr.
Superintendent of Schools

Curriculum Writing Committee

<u>Administration</u>

Donato Saponaro, Jr.

<u>Consultant/Curriculum Development</u>

Nick Montesano

<u>Teacher(s)</u>

Francie Illiano

<u>Developed and Written</u>

August – November 2014

<u>Revised</u>

December 2018

<u>Board Approved</u>

December 2018

Course Introduction

The *Envisions Math* program fully aligns with the national Common Core State Standards for Grade 2 Mathematics. The program is distinguished by its focus on real-life problem solving, balance between whole-class and self-directed learning, emphasis on communication, facilitation of school-family cooperation, and appropriate use of technology.

The projects, class games, and computer games are designed to help students to revisit skills learned and apply what they learned to real life situations.

Purpose

Our purpose is to have all of our students acquire the mathematical skills, understandings, and attitudes that they will need to be successful in their careers and daily lives.

Assessments

Throughout the course students will demonstrate their knowledge daily during mental math and math message activities. Students will be assessed on daily quick checks, unit projects, written and self-assessments and open-ended response problems.

Deal School Curriculum
Grade 2 Mathematics – Geometry

Reason with shapes and their attributes.

NJSLS.MATH.CONTENT.2.G.A.1

Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

NJSLS.MATH.CONTENT.2.G.A.2

Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

NJSLS.MATH.CONTENT.2.G.A.3

Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Enduring Understandings	Essential Questions
o- and three-dimensional objects can be described, classified, and analyzed by their attributes. bject in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape. bject's location on a plane or in space can be described quantitatively. ar measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other	1. Why do we compare contrast and classify objects? 2. How do decomposing and recomposing shapes help us build our understanding of mathematics? 3. How can transformations be described mathematically?
Learners will know...	**Learners will be able to....**

● Shapes has specified attributes, which can be recognized and drawn.
● Attributes allow for the recognition and identity of triangles, quadrilaterals, pentagons, hexagons, and cubes.
● A rectangle can be partitioned into rows and columns of same-size squares and count to find the total number of them.
● Circles and rectangles can be partitioned into two, three, or four equal shares.
● The shares of a rectangle can be described using the words halves,
	● Recognize and draw shapes having specified attributes.
	● Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
	● Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
	● Partition circles and rectangles into two, three, or four equal shares.
	    o Describe the shares using the words halves, thirds, half of, a third of, etc.
	    o Describe the whole as two halves, three thirds, four fourths.

| thirds, half of, a third of, etc.
● Equal shares of identical wholes need not have the same shape. | o Recognize that equal shares of identical wholes need not have the same shape. |

● **Formative Assessment**
● Homework
● Think Pair Share
● Group Reporters
● Thumbs Up
● Exit Slips
● Learning Logs
● Reading Journals
● Turn and Talks
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● Dry Erase Boards

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● Project Specific Rubrics
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● Class Discussion
● Dry erase board assessment
● Unit Tests

Benchmark Assessment
● LinkIt A
● LinkIt B
● LinkIt C
● Big Ideas Pre-Assessment
● Big Ideas Post-Assessment
● Course Benchmark Tests
●
Alternative Assessments
● Project Specific Rubrics
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- Pre and Post Course Tests
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- Vocabulary Cards
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Scope and Sequence/Pacing Guide

https://docs.google.com/document/d/1p1UYQJ9i7pJ5bpWmQMY2b6_zmMPmbUmnkc5hLnJxGOs/edit?usp=sharing

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CRP4. Communicate clearly and effectively and with reason

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9.1.4.B.1 Differentiate between financial wants and needs.

9.1.4.A.1 Explain the difference between a career and a job and identify various jobs in the community and the related earnings.

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9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.

9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

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3.5.K.2.NJSLSA.W6
Use technology including the Internet to produce and publish writing and to interact and collaborate with others.

3.5.K.3.NJSLSA.W9
Draw evidence from literary or informational texts to support analysis reflection and research.

3.3.2.3.RI.2.7
Explain how specific illustrations and images (e.g. a diagram showing how a machine works) contribute to and clarify a text.

Science Connections

1.2-1.1.1.CC-1
Patterns in the natural and human designed world can be observed

1.2-1.1.2.CC-1
Simple tests can be designed to gather evidence to support or refute student ideas about causes

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8.1.2.E.1
Use digital tools and online resources to explore a problem or issue.

Deal School Curriculum
Grade 2 Mathematics – Measurement and Data

Measure and estimate lengths in standard units.

NJSLS.MATH.CONTENT.2.MD.A.1

Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

NJSLS.MATH.CONTENT.2.MD.A.2

Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

NJSLS.MATH.CONTENT.2.MD.A.3

Estimate lengths using units of inches, feet, centimeters, and meters.

NJSLS.MATH.CONTENT.2.MD.A.4

Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

NJSLS.MATH.CONTENT.2.MD.B.5

Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

NJSLS.MATH.CONTENT.2.MD.B.6

Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Work with time and money.

NJSLS.MATH.CONTENT.2.MD.C.7

Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

NJSLS.MATH.CONTENT.2.MD.C.8

Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?

Represent and interpret data.

NJSLS.MATH.CONTENT.2.MD.D.9

Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

NJSLS.MATH.CONTENT.2.MD.D.10

Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems1 using information presented in a bar graph.

Enduring Understandings	Essential Questions
1. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other.	1. How are measurement and counting related? 2. How does *what* we measure affect *how* we measure? 3. 3. How can space be defined through numbers/measurement?
Learners will know…	**Learners will be able to….**
- Length is estimated and measured in standard units. - Addition and subtraction is used to solve word problems involving lengths that are given in the same units and equations with a symbol for the unknown number to represent. - Analog and digital clocks are used to tell time to the nearest five minutes, using am and pm. - Dollar bills, quarters, dimes, nickels, and pennies, and $ and ¢ symbols are used to solve word problems involving money. - Measurement data is generated by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. - Making a line plot, where the horizontal scale is marked off in whole-number units, shows measurements. - Picture graphs and bar graphs are used to represent data.	- Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. - Measure the length of an object twice, using length units of different lengths for the two measurements. - Describe how the two measurements relate to the size of the unit chosen. - Estimate lengths using units of inches, feet, centimeters, and meters. - Measure to determine how much longer one object is than another. - Express the length difference in terms of a standard length unit. - Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units and equations with a symbol for the unknown number to represent the problem. - Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, - Represent whole-number sums and differences within 100 on a number line diagram. - Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

	● Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. ● Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. ● Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. ● Draw a picture graph and a bar graph to represent a data set with up to four categories. ● Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. ●

Assessment Evidence

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● Center Products
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<u>**Alternative Assessments**</u>
- Project Specific Rubrics
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Suggested Learning Plan

Mathematics will be taught for 43 minutes per day with a format that resembles:
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  - Direct instruction and modeling.
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  - Guided practice
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21st Century Life and Careers

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Interdisciplinary Connections/Cross Curricular Opportunities

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Deal School Curriculum
Grade 2 Mathematics – Operations and Algebraic Thinking
Desired Outcomes

Represent and solve problems involving addition and subtraction.
NJSLS.MATH.CONTENT.2.OA.A.1
Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1
Add and subtract within 20.
NJSLS.MATH.CONTENT.2.OA.B.2
Fluently add and subtract within 20 using mental strategies.2 By end of Grade 2, know from memory all sums of two one-digit numbers.
Work with equal groups of objects to gain foundations for multiplication.
NJSLS.MATH.CONTENT.2.OA.C.3
Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
NJSLS.MATH.CONTENT.2.OA.C.4
Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Enduring Understandings	Essential Questions
1. Change is fundamental to understanding functions. 2. Numbers or objects that repeat in predictable ways can be described or generalized. 3. An operation can be "undone" by its inverse. 4. Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.	1. How can change be described mathematically? 2. How are patterns of change related to the behavior of functions? 3. How do mathematical models/representations shape our understanding of mathematics?
Learners will know…	**Learners will be able to….**
● Addition and subtraction within 100 is used to solve one- and two-step word problems involving situations of adding to,	● Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and

taking from, putting together, taking apart, and comparing, with unknowns in all positions. ● Metal strategies help one fluently add and subtract within 20. ● The number of objects in a group is either odd or even. ● Addition is used to find the total number of objects arranged in rectangular arrays.	comparing, with unknowns in all positions. ● Fluently add and subtract within 20 using mental strategies. ● By end of Grade 2, know from memory all sums of two one-digit numbers. ● Determine whether a group of objects (up to 20) has an odd or even number of members. ● Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns ● Write an equation to express the total as a sum of equal addends

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Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.

3.7.K.2.NJSLSA.SL5
Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

3.5.K.2.NJSLSA.W6
Use technology including the Internet to produce and publish writing and to interact and collaborate with others.

3.5.K.3.NJSLSA.W9
Draw evidence from literary or informational texts to support analysis reflection and research.

3.3.2.3.RI.2.7
Explain how specific illustrations and images (e.g. a diagram showing how a machine works) contribute to and clarify a text.

Science Connections

1.2-1.1.1.CC-1
Patterns in the natural and human designed world can be observed

1.2-1.1.2.CC-1
Simple tests can be designed to gather evidence to support or refute student ideas about causes

1.2-4.2.1.DCI-2
Asking questions making observations and gathering information are helpful in thinking about problems.

Integration and Technology
8.1.2.A.4

Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).

8.1.2.B.1
Illustrate and communicate original ideas and stories using multiple digital tools and resources.

8.1.2.E.1
Use digital tools and online resources to explore a problem or issue.

Deal School Curriculum

Grade 2 Mathematics –
Number and Operations in Base Ten

Desired Outcomes

Understand place value.
NJSLS.MATH.CONTENT.2.NBT.A.1
Understand that the three digits of a three-digit number represent amounts hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 on Understand the following as special cases:
NJSLS.MATH.CONTENT.2.NBT.A.1.A
100 can be thought of as a bundle of ten tens — called a "hundred."
NJSLS.MATH.CONTENT.2.NBT.A.1.B
The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, thr four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
NJSLS.MATH.CONTENT.2.NBT.A.2
Count within 1000; skip-count by 5s, 10s, and 100s.
NJSLS.MATH.CONTENT.2.NBT.A.3
Read and write numbers to 1000 using base-ten numerals, number names, a expanded form.
NJSLS.MATH.CONTENT.2.NBT.A.4

Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
Use place value understanding and properties of operations to add and subtract.
NJSLS.MATH.CONTENT.2.NBT.B.5
Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
NJSLS.MATH.CONTENT.2.NBT.B.6
Add up to four two-digit numbers using strategies based on place value and properties of operations.
NJSLS.MATH.CONTENT.2.NBT.B.7
Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
NJSLS.MATH.CONTENT.2.NBT.B.8
Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
NJSLS.MATH.CONTENT.2.NBT.B.9
Explain why addition and subtraction strategies work, using place value and the properties of operations.1

Enduring Understandings	Essential Questions	
1. Numbers can be represented in multiple ways. 2. The same operations can be applied in problem situations that seem quite different from another. 3. Being able to compute fluently means making smart choices about which tools to use and when to use them. 4. Knowing the reasonableness of an answer comes from using good number sense and estimation strategies.	1. What makes an estimate reasonable? 2. What makes an answer exact? 3. What makes a strategy both effective and efficient? 4. What makes a solution optimal?	
Learners will know…	**Learners will be able to….**	
● The three digits of a three-digit number represent amounts of hundreds, tens, and ones. ● It is possible to count within 1000; skip-count by 5s, 10s, and 100s. ● Two three-digit numbers can be	● Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. ○ 100 can be thought of as a bundle of ten tens — called a "hundred."	

- compared based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
- Adding and subtracting within 100 is accomplished using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Up to four two-digit numbers can be added using strategies based on place value and properties of operations.
- It is possible to add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- All strategies used for adding and subtracting can be related to a written method.
- In adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
- Addition and subtraction strategies work, using place value and the properties of operations.
- Mental addition can be used to add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

- o The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds.
- Count within 1000; skip-count by 5s, 10s, and 100s.
- Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
- Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
- Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Add up to four two-digit numbers using strategies based on place value and properties of operations.
- Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Relate the strategy to a written method.
- Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
- Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
- Explain why addition and subtraction strategies work, using place value and the properties of

	operations.	
Assessment Evidence		

Formative Assessment
- Homework
- Think Pair Share
- Group Reporters
- Thumbs Up
- Exit Slips
- Learning Logs
- Reading Journals
- Turn and Talks
- Exit Slips
- Checklist Assessments
- Center Products
- Pre-Assessments
- Student Self-Assessment
- Dry Erase Boards

Summative Assessment
- Project Specific Rubrics
- Group Project Products
- Peer review
- Quizzes
- Class Discussion
- Dry erase board assessment
- Unit Tests
-

Benchmark Assessment
- LinkIt A
- LinkIt B
- LinkIt C
- Big Ideas Pre-Assessment
- Big Ideas Post-Assessment
- Course Benchmark Tests

Alternative Assessments
- Project Specific Rubrics
- Group Project Products

Suggested Learning Plan	

Mathematics will be taught for 43 minutes per day with a format that resembles:

- Warm-Up/Dig In
- Explore and Grow
    Direct instruction and modeling.
    - Partner practice and discovery.
- Think and Grow
    - Guided practice
    - Student conferences
    - Reteaching
- Apply and Grow/Independent Practice
- Think and Grow: Modeling Real Life
- Differentiated instruction and homework assignment.:

Connect and Grow: Centers for reteaching and independent practice.
Assessments: Concept testing and performance tasks.

Suggested Learning Resources	

Big Ideas Math Student Edition
Big Ideas Math.com Centers
Big Ideas Math Manipulative Kits
Literature Kits
Math Musicals
Family Letter
Warm-Ups
Extra Practice
Reteach
Enrichment and Extension
Prerequisite Skills Practice
Pre and Post Course Tests
Course Benchmark Tests
Chapter Tests
Vocabulary Cards
Activities
Blackline Masters
Addition and Subtraction Bingo
Dry Erase Boards

Scope and Sequence/Pacing Guide	

https://docs.google.com/document/d/1p1UYQJ9i7pJ5bpWmQMY2b6_zmMPmbUmnkc5hLnJxGOs/edit?usp=sharing

21st Century Themes and Skills	

Career Ready Practices
    CRP2. Apply appropriate academic and technical skills
    CRP4. Communicate clearly and effectively and with reason

CRP6. Demonstrate creativity and innovation
CRP8. Utilize Critical Thinking to Make Sense of Problems and Persevere in Solving Them
CRP11.   Use technology to enhance productivity

Personal Financial Literacy

9.1.4.B.1 Differentiate between financial wants and needs.
9.1.4.A.1 Explain the difference between a career and a job and identify various jobs in the community and the related earnings.

Career Awareness, Exploration and Preparation

9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.

9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Accommodations and Modifications

Gifted and Talented
- Provide appropriate challenge for a wide ranging skills and development.
- Participate in inquiry and project-based learning units of study.
-

English Language Learners
- Pair visual prompts with verbal presentations.
- Provide students with visual models, sentence stems, concrete objects, and hands-on material.
-

Students with IEPs/504s
- Review student individual education plan and/or 504 plan
- Establish procedures for accommodations and modifications for assessments as per IEP/504.
- Modify classroom environment to support academic and physical needs of the students per IEP/504.

At-Risk Learners
- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- Differentiated instruction
- Basic Skills
- Provide instructional interventions in the general education classroom.
- Preferential seating
- Modify assessments

Interdisciplinary Connections/Cross Curricular Opportunities

English Language Arts

3.9.K.3.NJSLSA.L6
Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

3.7.K.1.NJSLSA.SL1
Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.

3.7.K.2.NJSLSA.SL5
Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

3.5.K.2.NJSLSA.W6
Use technology including the Internet to produce and publish writing and to interact and collaborate with others.

3.5.K.3.NJSLSA.W9
Draw evidence from literary or informational texts to support analysis reflection and research.

3.3.2.3.RI.2.7
Explain how specific illustrations and images (e.g. a diagram showing how a machine works) contribute to and clarify a text.

Science Connections

1.2-1.1.1.CC-1
Patterns in the natural and human designed world can be observed

1.2-1.1.2.CC-1
Simple tests can be designed to gather evidence to support or refute student ideas about
causes

1.2-4.2.1.DCI-2
Asking questions making observations and gathering information are helpful in thinking about problems.

Integration of Technology

8.1.2.A.4
Demonstrate developmentally appropriate navigation skills in virtual

environments (i.e. games museums).

8.1.2.B.1

Illustrate and communicate original ideas and stories using multiple digital tools and resources.

8.1.2.B.1

Illustrate and communicate original ideas and stories using multiple digital tools and resources.

8.1.2.E.1

Use digital tools and online resources to explore a problem or issue.

Grade 2
Math Pacing Guide

September	October	November	December	January
days) umbers and Arrays 3 days) uency and Strategies thin 20	(11 days) Addition to 100 Strategies (11 days) Fluently add to 100	(12 days) Subtraction to 100 Strategies	(11 days) Fluently Subtract within 100	(9 days) Understand Place Valu to 1,000 (10 days) Count and Compare Numbers to 1,000

February	March	April	May	June
3 days) ld Numbers Within 000. 3 days) btract numbers within 000.	(12 days) Measure and Estimate Length	(8 days) Solve Length Problems (11 days) Represent and Interpret Data	(14 days) Money and time	(12 days) Identify and Partition Shapes

Grade 2
Math Pacing Guide

Deal School Curriculum

Mathematics
Curriculum Guide
Grade 3

Deal School
Deal, New Jersey

2018
Board of Education

Dennis Melofchik, President
Kaye Jannarone, Vice President

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Donato Saponaro, Jr.
Superintendent of Schools

Curriculum Writing Committee

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<u>Teacher(s)</u>

Heather Campo

<u>Developed and Written</u>

August – November 2014

<u>Revised</u>

December 2018

<u>Board Approved</u>

December 2018

Course Introduction

The *Envisions Math* program fully aligns with the national Common Core State Standards for Grade 3 Mathematics. The program is distinguished by its focus on real-life problem solving, balance between whole-class and self-directed learning, emphasis on communication, facilitation of school-family cooperation, and appropriate use of technology.

The projects, class games, and computer games are designed to help students to revisit skills learned and apply what they learned to real life situations.

Purpose

Our purpose is to have all of our students acquire the mathematical skills, understandings, and attitudes that they will need to be successful in their careers and daily lives.

Assessments

Throughout the course students will demonstrate their knowledge daily during mental math and math message activities. Students will be assessed on daily quick checks, unit projects, written and self-assessments and open-ended response problems.

Deal School Curriculum
Grade 3 Mathematics – Geometry

Reason with shapes and their attributes.
NJSLS.MATH.CONTENT.3.G.A.1
Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
NJSLS.MATH.CONTENT.3.G.A.2
Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.

Enduring Understandings	Essential Questions
1. Two- and three-dimensional objects can be described, classified, and analyzed by their attributes. 2. An object in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape. 3 . An object's location on a plane or in space can be described quantitatively. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other	1. Why do we compare contrast and classify objects? 2. How do decomposing and recomposing shapes help us build our understanding of mathematics? 3. How can transformations be described mathematically?

Learners will know…	Learners will be able to….

● Shapes in different categories may share attributes, and that the shared attributes can define a larger category.
● Rhombuses, rectangles, and squares as examples of quadrilaterals.
● Rhombuses, rectangles, and squares can be partitioned into parts with equal areas.
● The area of each of these equal parts can be expressed as a unit fraction of the whole.
	● Understand that shapes in different categories may share attributes, and that the shared attributes can define a larger category.
	   o Recognize rhombuses, rectangles, and squares as examples of quadrilaterals.
	   o Draw examples of quadrilaterals that do not belong to any of these subcategories.
	   o Partition shapes into parts with equal areas.

	o Express the area of each part as a unit fraction of the whole.

Formative Assessment
Homework
Checklist Assessments
Center Products
       Thumbs Up
       Exit Slips
       Think Pair Share
       Turn and Talks
Graphic Organizers
Peer review
       Group Reporters
       Learning Logs
       Math Journals
       Writing Samples
Student Self-Assessment
Class Discussion
Summative Assessment
Project Specific Rubrics
Group Project Products
Quizzes
Unit Assessment
Benchmark
LinkIt! Benchmark A
LinkIt! Benchmark B
LinkIt! Benchmark C
Big Ideas Pre-Assessment
Big Ideas Post-Assessment
Course Benchmark Tests
Alternative Assessment
Project Specific Rubrics
Group Project Products

Suggested Learning Plan

Mathematics will be taught for 43 minutes per day with a format that resembles:

- Warm Up/Dig In
- Explore and Grow
    - Direct instruction and modeling.
    - Partner practice with review of math problems.
- Think and Grow
    - Guided practice

- o Student conferences
- o Reteaching
- ● Apply and Grow/Independent Practice
- ● Think and Grow/Modeling Real Life
- ● Guided small group practice and differentiation.
- ● Small groups rotate between teacher, IPad and games, and additional independent paper and pencil practice.
- ● Exit slips
- ● Differentiated instruction and homework assignment.:

Connect and Grow: Center for re-teaching and independent practice
Assessments: Concept testing and performance tasks.

Suggested Learning Resources

• Big Ideas Math Modeling Real Life 3rd Grade
Big Ideas Math Ready-Made Centers 3rd Grade
Student Edition Consumable Book
Teacher's Edition
Family Letter
Extra Practice
Re-teach
Enrichment and Extension
Chapter Self Assessment
Big Ideas Math Manipulatives
Prerequisite Skills Practice
Pre- and Post- Course Tests
Course Benchmark Tests
Chapter Tests
Vocabulary Cards
Math Musicals
Literature Kit

www.bigideasmath.com
www.xtramath.com

Scope and Sequence/Pacing Guide

https://docs.google.com/document/d/1XC_LJJYSp7qa2vDNkGtFvcOc7ogeEegxUYuT77N76EE/edit?usp=sharing

21st Century Life and Careers

Career Ready Practices
CRP2. Apply appropriate academic and technical skills
CRP 4. Communicate clearly and effectively and with reason
CRP 6. Demonstrate creativity and innovation
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them

CRP 11. Use technology to enhance productivity
Personal Financial Literacy
9.1.4.B.3 Explain what a budget is and why it is important.
Career Awareness Exploration and Preparation
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Accommodations and Modifications

Gifted and Talented
- Provide appropriate challenge for a wide ranging skills and development.
- Participate in inquiry and project-based learning units of study.
- Provide options, alternatives, and choices

English Language Learners
- Pair visual prompts with verbal presentations.
- Provide students with visual models, sentence stems, concrete objects, and hands-on material.
- Assign a picture or movement to vocabulary words

Students with IEPs/504s
- Review student individual education plan and/or 504 plan
- Establish procedures for accommodations and modifications for assessments as per IEP/504.
- Modify classroom environment to support academic and physical needs of the students per IEP/504.

At-Risk Learners
- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- Differentiated instruction
- Basic Skills
- Provide instructional interventions in the general education classroom.
- Preferential seating
- Modified assessments

Interdisciplinary Connections/Cross Curricular Opportunities

Science Connections
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Literacy Connections
3.9.K.1.NJSLSA.L1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in

gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression

3.1.K.3.NJSLSA.R7 Integrate and evaluate content presented in diverse media and formats including visually and quantitatively as well as in words.

3.7.K.1.NJSLSA.SL2 Integrate and evaluate information presented in diverse media and formats including visually quantitatively and orally.

3.7.K.2.NJSLSA.SL4 Present information findings and supporting evidence such that listeners can follow the line of reasoning and the organization development and style are appropriate to task purpose and audience.

3.10.3.2.L.3.3 Use knowledge of language and its conventions when writing speaking reading or listening. A.Choose words and phrases for effect. B.Recognize and observe differences between the conventions of spoken and written standard English.

3.10.3.3.L.3.6 Acquire and use accurately grade-appropriate conversational general academic and domain-specific words and phrases including those that signal spatial and temporal relationships (e.g. After dinner that night we went looking for them).

3.8.3.1.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one in groups and teacher led) with diverse partners on grade 3 topics and texts

3.8.3.2.SL.3.6 Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Integration of Technology

8.1.5.D.2 Analyze the resource citations in online materials for proper use.

8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Deal School Curriculum
Grade 3 Mathematics – Measurement and Data

Solve problems involving measurement and estimation.

NJSLS.MATH.CONTENT.3.MD.A.1

Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

NJSLS.MATH.CONTENT.3.MD.A.2

Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.2

Represent and interpret data.

NJSLS.MATH.CONTENT.3.MD.B.3

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

NJSLS.MATH.CONTENT.3.MD.B.4

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

CCSS.MATH.CONTENT.3.MD.C.5

Recognize area as an attribute of plane figures and understand concepts of area measurement.

NJSLS.MATH.CONTENT.3.MD.C.5.A

A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

NJSLS.MATH.CONTENT.3.MD.C.5.B

A plane figure, which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

NJSLS.MATH.CONTENT.3.MD.C.6

Measure areas by counting unit squares (square cm, square m, square in, square ft, and non- standard units).

NJSLS.MATH.CONTENT.3.MD.C.7

Relate area to the operations of multiplication and addition.

NJSLS.MATH.CONTENT.3.MD.C.7.A

Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

CCSS.MATH.CONTENT.3.MD.C.7.B
Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
CCSS.MATH.CONTENT.3.MD.C.7.C
Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
CCSS.MATH.CONTENT.3.MD.C.7.D
Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
Geometric measurement: recognize perimeter.
CCSS.MATH.CONTENT.3.MD.D.8
Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Enduring Understandings	Essential Questions
1. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other.	1. How are measurement and counting related? 2. How does *what* we measure affect *how* we measure? 3. 3. How can space be defined through numbers/measurement?
Learners will know…	**Learners will be able to….**
● Time can be told and written to the nearest minute. ● Time intervals can be measured in minute. ● Liquid volumes and masses can by measured and estimated using standard units of grams (g), kilograms (kg), and liters (l). ● Adding, subtracting, multiplying, and dividing can solve one-step word problems involving masses or volumes that are given in the same units. ● Data is represented on a picture graph or scaled bar graph with several categories. ● Information presented in scaled bar graphs can be used to solve	● Tell and write time to the nearest minute and measure time intervals in minutes. ● Solve word problems involving addition and subtraction of time intervals in minutes. ● Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). ● Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. ● Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. ● Solve one- and two-step "how many more" and "how many less"

- one- and two-step "how many more" and "how many less" problems.
- Measurement data can be generated by measuring lengths using rulers marked with halves and fourths of an inch. This data can be shown by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
- Area is an attribute of plane figures.
- A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
- A plane figure, which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
- Areas can be measured by counting unit squares.
- The area of a rectangle with whole-number side lengths can be measured by tiling it, showing that the area is the same as would be found by multiplying the side lengths.
- Side lengths are multiplied to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems.
- Tiling is used to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c.
- The distributive property in mathematical reasoning can be used area to represent models.

- problems using information presented in scaled bar graphs.
- Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.
- Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
- Recognize area as an attribute of plane figures and understand concepts of area measurement.
  - A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
- A plane figure, which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
- Measure areas by counting unit squares.
- Relate area to the operations of multiplication and addition.
- Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c.

- Area is additive. - Decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems, can find areas of rectilinear figures. - Real world and mathematical problems are solved involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	- Use area models to represent the distributive property in mathematical reasoning. - Recognize area as additive. - Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. - Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Assessment Evidence

Formative Assessment
Homework
Checklist Assessments
Center Products
          Thumbs Up
          Exit Slips
          Think Pair Share
          Turn and Talks
Graphic Organizers
Peer review
          Group Reporters
          Learning Logs
          Math Journals
          Writing Samples
Student Self-Assessment
Class Discussion
Summative Assessment
Project Specific Rubrics
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Quizzes
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Benchmark
LinkIt! Benchmark A
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LinkIt! Benchmark C
Big Ideas Pre-Assessment
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Course Benchmark Tests
<u>Alternative Assessment</u>
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Mathematics will be taught for 43 minutes per day with a format that resembles:

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- Think and Grow
  - Guided practice
  - Student conferences
  - Reteaching
- Apply and Grow/Independent Practice
- Think and Grow/Modeling Real Life
- Guided small group practice and differentiation.
- Small groups rotate between teacher, IPad and games, and additional independent paper and pencil practice.
- Exit slips
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Connect and Grow: Center for re-teaching and independent practice
Assessments: Concept testing and performance tasks.

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21st Century Life and Careers

Career Ready Practices

CRP2. Apply appropriate academic and technical skills

CRP 4. Communicate clearly and effectively and with reason

CRP 6. Demonstrate creativity and innovation

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them

CRP 11. Use technology to enhance productivity

Personal Financial Literacy

9.1.4.B.3 Explain what a budget is and why it is important.

Career Awareness Exploration and Preparation

9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Accommodations and Modifications

Gifted and Talented
- Provide appropriate challenge for a wide ranging skills and development.
- Participate in inquiry and project-based learning units of study.
- Provide options, alternatives, and choices

English Language Learners
- Pair visual prompts with verbal presentations.
- Provide students with visual models, sentence stems, concrete objects, and hands-on material.
- Assign a picture or movement to vocabulary words

Students with IEPs/504s
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- Establish procedures for accommodations and modifications for assessments as per IEP/504.
- Modify classroom environment to support academic and physical needs of the students per IEP/504.

At-Risk Learners
- Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- Differentiated instruction
- Basic Skills

- Provide instructional interventions in the general education classroom.
- Preferential seating
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Interdisciplinary Connections/Cross Curricular Opportunities

Science Connections

3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Literacy Connections

3.9.K.1.NJSLSA.L1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression

3.1.K.3.NJSLSA.R7 Integrate and evaluate content presented in diverse media and formats including visually and quantitatively as well as in words.

3.7.K.1.NJSLSA.SL2 Integrate and evaluate information presented in diverse media and formats including visually quantitatively and orally.

3.7.K.2.NJSLSA.SL4 Present information findings and supporting evidence such that listeners can follow the line of reasoning and the organization development and style are appropriate to task purpose and audience.

3.10.3.2.L.3.3 Use knowledge of language and its conventions when writing speaking reading or listening. A.Choose words and phrases for effect. B.Recognize and observe differences between the conventions of spoken and written standard English.

3.10.3.3.L.3.6 Acquire and use accurately grade-appropriate conversational general academic and domain-specific words and phrases including those that signal spatial and temporal relationships (e.g. After dinner that night we went looking for them).

3.8.3.1.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one in groups and teacher led) with diverse partners on grade 3 topics and texts

3.8.3.2.SL.3.6 Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

Integration of Technology

8.1.5.D.2 Analyze the resource citations in online materials for proper use.

8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Deal School Curriculum
Grade 3 Mathematics – Number and Operations - Fractions

Develop understanding of fractions as numbers.

NJSLS.MATH.CONTENT.3.NF.A.1

Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

NJSLS.MATH.CONTENT.3.NF.A.2

Understand a fraction as a number on the number line; represent fractions on a number line diagram.

NJSLS.MATH.CONTENT.3.NF.A.2.A

Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.

NJSLS.MATH.CONTENT.3.NF.A.2.B

Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

NJSLS.MATH.CONTENT.3.NF.A.3

Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

NJSLS.MATH.CONTENT.3.NF.A.3.A

Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

NJSLS.MATH.CONTENT.3.NF.A.3.B

Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.

NJSLS.MATH.CONTENT.3.NF.A.3.C

Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.

NJSLS.MATH.CONTENT.3.NF.A.3.D

Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Enduring Understandings	**Essential Questions**
1. Change is fundamental to understanding functions.	1. How can change be described mathematically?

2. Numbers or objects that repeat in predictable ways can be described or generalized. 3. An operation can be "undone" by its inverse. 4. Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.	2. How are patterns of change related to the behavior of functions? 3. How do mathematical models/representations shape our understanding of mathematics?
Learners will know…	**Learners will be able to….**
● A fraction 1/b is the quantity formed by 1 part when a whole is partitioned into b equal parts; understand. ● A fraction a/b is the quantity formed by a parts of size 1/b. ● A fraction is represented as a number on the number line.	● Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. ● Understand a fraction as a number on the number line; represent fractions on a number line diagram. ● Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. ● Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. ● Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
Assessment Evidence	

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21st Century Life and Careers

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in groups and teacher led) with diverse partners on grade 3 topics and texts
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Visual and Performing Arts
1.3.5.D1 Work individually and collaboratively to create two and three dimensional works of art that make cohesive visual statements and that employ the elements of art and principles of design
Integration of Technology
8.1.5.D.2 Analyze the resource citations in online materials for proper use. 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Deal School Curriculum
Grade 3 Mathematics – Number and Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.[1]
NJSLS.MATH.CONTENT.3.NBT.A.1
Use place value understanding to round whole numbers to the nearest 10 or 100.
NJSLS.MATH.CONTENT.3.NBT.A.2
Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
NJSLS.MATH.CONTENT.3.NBT.A.3
Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

Enduring Understandings	**Essential Questions**
1. Numbers can be represented in multiple ways. 2. The same operations can be applied in problem situations that seem quite different from another. 3. Being able to compute fluently means making smart choices about which tools to use and when to use them. 4. Knowing the reasonableness of an answer comes from using good number sense and estimation strategies.	1. What makes an estimate reasonable? 2. What makes an answer exact? 3. What makes a strategy both effective and efficient? 4. What makes a solution optimal?
Learners will know…	**Learners will be able to….**
● Place value understanding is used to round whole numbers to the nearest 10 or 100. ● Strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction are used to fluently add and subtract within 1000. ● Strategies based on place value and properties of operations can be used to multiply one-digit	● Use place value understanding to round whole numbers to the nearest 10 or 100. ● Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. ● Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies

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21st Century Life and Careers

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Deal School Curriculum
Grade 3 Mathematics – Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division.
NJSLS.MATH.CONTENT.3.OA.A.1
Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5×7.
NJSLS.MATH.CONTENT.3.OA.A.2
Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
NJSLS.MATH.CONTENT.3.OA.A.3
Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1
NJSLS.MATH.CONTENT.3.OA.A.4
Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \_ \div 3$, $6 \times 6 = ?$
Understand properties of multiplication and the relationship between multiplication and division.
NJSLS.MATH.CONTENT.3.OA.B.5
Apply properties of operations as strategies to multiply and divide.2 Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)
CCSS.MATH.CONTENT.3.OA.B.6
Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.
Multiply and divide within 100.
NJSLS.MATH.CONTENT.3.OA.C.7
Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
Solve problems involving the four operations, and identify and explain patterns in arithmetic.
NJSLS.MATH.CONTENT.3.OA.D.8

Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.3
NJSLS.MATH.CONTENT.3.OA.D.9
Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

Enduring Understandings	Essential Questions
1. Change is fundamental to understanding functions. 2. Numbers or objects that repeat in predictable ways can be described or generalized. 3. An operation can be "undone" by its inverse. 4. Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.	1. How can change be described mathematically? 2. How are patterns of change related to the behavior of functions? 3. How do mathematical models/representations shape our understanding of mathematics?
Learners will know…	**Learners will be able to….**

● Multiplication and division are used to represent and solve problems.
● Properties of operations are strategies to multiply and divide.
● Division is an unknown-factor problem.
● Strategies such as the relationship between multiplication and division or properties of operations can be used to fluently multiply and divide within 100.
● Addition, subtraction, multiplication and division are used to solve problems.
● These problems are represented using equations with a letter standing for the unknown quantity.
	● Represent and solve problems involving multiplication and division.
	  o Interpret products of whole numbers.
	  o Interpret whole-number quotients of whole numbers.
	  o Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.
	  o Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
	● Understand properties of multiplication and the relationship between multiplication and

● The reasonableness of answers can be assessed using mental computation and estimation strategies including rounding.
● Arithmetic patterns can be identified and explained using properties of operations.
	division.
	   o Apply properties of operations as strategies to multiply and divide.
	   o Understand division as an unknown-factor problem.
	● Multiply and divide within 100.
	   o Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations.
	   o By the end of Grade 3, know from memory all products of two one-digit numbers.
	● Solve problems involving the four operations, and identify and explain patterns in arithmetic.
	   o Solve two-step word problems using the four operations.
	   o Represent these problems using equations with a letter standing for the unknown quantity.
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English Language Learners
● Pair visual prompts with verbal presentations.
● Provide students with visual models, sentence stems, concrete objects, and

hands-on material.
- ● Assign a picture or movement to vocabulary words

Students with IEPs/504s
- ● Review student individual education plan and/or 504 plan
- ● Establish procedures for accommodations and modifications for assessments as per IEP/504.
- ● Modify classroom environment to support academic and physical needs of the students per IEP/504.

At-Risk Learners
- ● Provide Title 1 services to students not meeting academic standards in ELA and/or Math.
- ● Differentiated instruction
- ● Basic Skills
- ● Provide instructional interventions in the general education classroom.
- ● Preferential seating
- ● Modified assessments

Interdisciplinary Connections/Cross Curricular Opportunities

Science Connections

3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Literacy Connections

3.9.K.1.NJSLSA.L1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression

3.1.K.3.NJSLSA.R7 Integrate and evaluate content presented in diverse media and formats including visually and quantitatively as well as in words.

3.7.K.1.NJSLSA.SL2 Integrate and evaluate information presented in diverse media and formats including visually quantitatively and orally.

3.7.K.2.NJSLSA.SL4 Present information findings and supporting evidence such that listeners can follow the line of reasoning and the organization development and style are appropriate to task purpose and audience.

3.10.3.2.L.3.3 Use knowledge of language and its conventions when writing speaking reading or listening. A.Choose words and phrases for effect. B.Recognize and observe differences between the conventions of spoken and written standard English.

3.10.3.3.L.3.6 Acquire and use accurately grade-appropriate conversational general academic and domain-specific words and phrases including those that signal spatial and temporal relationships (e.g. After dinner that night we went looking for them).

3.8.3.1.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one in groups and teacher led) with diverse partners on grade 3 topics and texts

3.8.3.2.SL.3.6 Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
Integration of Technology
8.1.5.D.2 Analyze the resource citations in online materials for proper use. 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Annual Pacing Guide
Grade Level:
Subject:

Annual Pacing Guide
Grade Level: 3
Subject: Math

September	October	November	December	January
(1 Days) Understand Multiplication and Division (0 Days) Multiplication Facts and Strategies	(continued) Multiplication Facts and Strategies (13 Days) More Multiplication Facts and Strategies	(14 Days) Division Facts and Strategies	(8 Days) Patterns and Fluency (9 Days) Relate Area to Multiplication	(9 Days) Round and Estimate Numbers (16 Days) Add and Subtract Multi-Digit Numbers

February	March	April	May	June
(continued) Add and Subtract Multi-Digit Numbers (Days) Multiples and Problem Solving (Days) Understand Fractions	(continued) Understand Fractions (12 Days) Understand Fraction Equivalence and Comparison	(13 Days) Understand Time, Liquid, Volume, and Mass (8 Days) Classify Two-Dimensional Shapes	(continued) Classify Two-Dimensional Shapes (11 Days) Represent and Interpret Data	(continued) Represent and Interpret Data (10 Days) Find Perimeter and Area

Working document.

Update as needed.

Annual Pacing Guide
Grade Level:
Subject: