

1st Quarter



2nd Grade Mathematics Instructional Resources

Overview

District Instructional Guidelines for Math



1st Quarter Scoring Guides

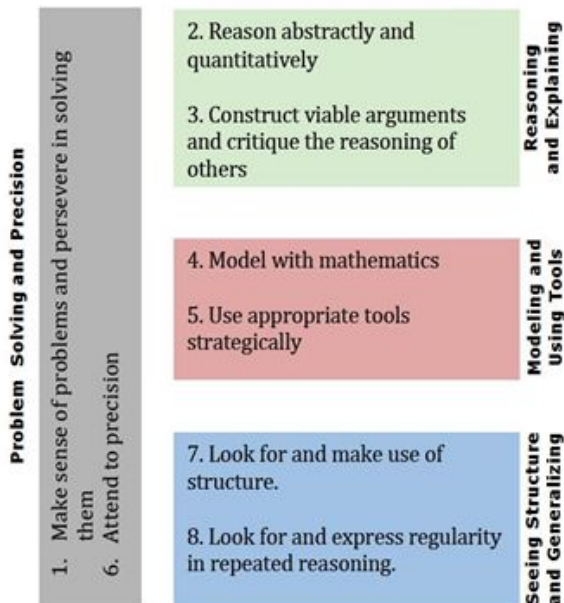
Log into your @rps30 account to access

Math - 90 min.

Students should be engaged in problem solving or investigations for a larger portion of math instruction.

	Standards Driven
• Problem Solving & Investigations in Geometry, Measurement, and Data • Number Concepts, Fluency, Inspecting Equations <i>Includes but not limited to:</i> Number Talks, Number and Counting Routines, Reading and Writing Numerals, True/False statements, Examining Equality • Targeted Differentiation and Practice	• AR Mathematics Standards • Standards for Mathematical Practice

Standards for Mathematical Practice



Standards for Mathematical Practice in 2nd Grade

Scoring the Practices:

Proficiency Matrix

Student "look fors"

Teacher resources:

Teacher Question Starters

Questions to Promote the Practices

Practices w/Visual Explanations Posters Grades 2-3

"I Can" Statement Posters A

"I Can" Statement Posters B

Essential Question 1

How can I decompose (break-apart) numbers to help me add and subtract?

Numbers within 100

★ 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
- Represent a strategy with a related equation including a symbol for the unknown number

★ 2.NBT.B.5 Add and subtract within 100 with *computational fluency* using strategies based on *place value*, properties of operations, and the relationship between addition and subtraction *The subtraction standard in 1st grade was limited to subtracting with multiples of 10. Concrete models and drawings should be encouraged as students extend their reasoning with addition and subtraction within 100.*

→ 2.NBT.B.6 Add up to four two-digit numbers using strategies based on *place value* and properties of operations

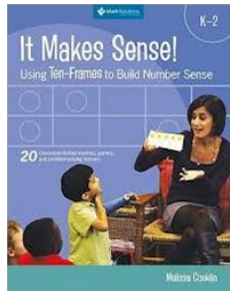
★ 2.MD.B.6 Represent *whole numbers* as lengths from 0 on a *number line diagram* with equally spaced points corresponding to the numbers 0, 1, 2, ..., and solve addition and subtraction problems within 100 on the *number line diagram* *Students should use number lines as a tool in solving addition/subtraction problems within 100.*

★ 2.NBT.B.9 Explain why addition and subtraction strategies work, using *place value* and the properties of operations

Note: 2.NBT.B.9 Explanations could be supported by drawings or objects.

EQ 1: How can I decompose (break apart) numbers to help me add and subtract?

Routines, Number Work, Number Talks

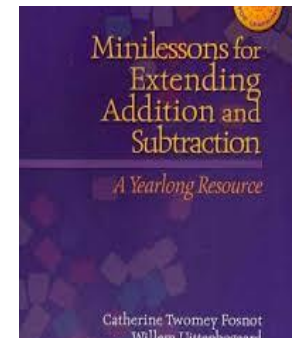


P-2 Riddles (2.OA.A.1; 2.NBT.B.5) p.167-172
Reproducibles A, D

P-5 Partial Sums (2.OA.A.1; 2.NBT.B.5) p. 198-210
Reproducibles B, C, 22, 23, 24

Around the Circle (2.OA.A.1; 2.NBT.B.5)
p.11-17 A1-A11

The Open Number Line with Connecting Cubes (2.MD.B.6)
p. 18-33 B1-B15



EQ 1: How can I decompose (break apart) numbers to help me add and subtract?

Problems to Pose:

2.OA.A.1 *Log into your @rps30 account to access*

[Join-Result Unknown](#)

[Separate-Start Unknown](#)

[Part-Part Whole, Part Unknown](#)

[Compare](#)

[Problem Type Template](#)

[Add to - Result Unknown](#)

[Take from - Result Unknown](#)

2.NBT.B.5 *Log into your @rps30 account to access*

[Join-Result Unknown](#)

[Join-Change Unknown](#)

[Separate-Result Unknown](#)

[Separate-Change Unknown](#)

[Part-Part Whole, Whole Unknown](#)

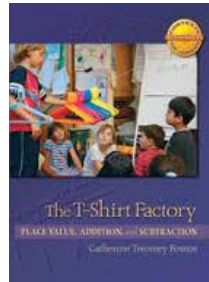
[Problem Type Template](#)

[Multi-Digit Addition Strategies](#)

[Multi-Digit Addition Strategies-Revisited](#)

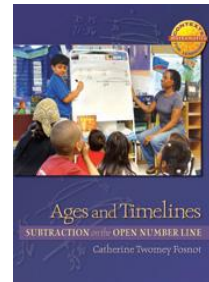
[Subtraction Story Problems](#)

Contexts for Learning:



The T-Shirt Factory:
Place Value Addition
and Subtraction
(2.OA.A.1; 2.NBT.B.5)
Days 1, 2, 3, & 4

Ages and Timelines
(2.NBT.B.5)
Days 1, 2, 3, & 4



Problem Solving Resources:

[Problem Types Chart](#)

[Strategy Levels for Problem Types](#)

[Open Strategy Sharing Template](#)

Continuum of Strategies:

[Multi-digit Addition](#)

[Multi-digit Subtraction](#)

Lessons and Tasks:

2.OA.A.1

[Addition Strategies](#)

[Building Towers of 10](#)

[How Many More Fish](#)

[Our Number Riddles](#)

2.MD.B.6

[Hopping Backward to Solve Problems](#)

[Where Will I Land?](#)

[Frog and Toad on the Number Line](#)

[Daisies \(addition\)](#) *Assessment task*

[M & M Candies \(subtraction\)](#)

Assessment task

EQ 1: How can I decompose (break apart) numbers to help me add and subtract?

Multimedia Resources



Videos/Songs
[Counting On](#) BrainPop Jr.

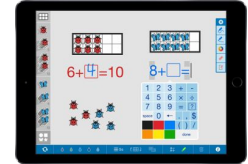
Interactive Manipulatives

[Rekenrek \(Mathrack\)](#)

[Number Frames](#)

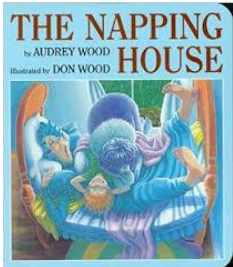
[Number Line](#)

[Free Math Apps \(for variety of platforms\)](#)



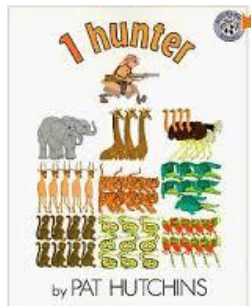
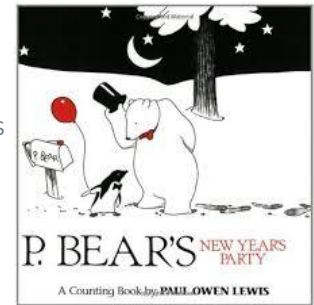
Literature Connections

Log into your @rps30 account to access the literature lesson resources:



[The Napping House](#) by Audrey Wood
[YouTube - read aloud](#)

[P. Bear's New Year's Party](#) by Paul Owen Lewis



[One Hunter](#) by Pat Hutchins

[Two of Everything](#) by Lily Toy Hong
[YouTube - read aloud](#)



Essential Question 2

How can I use facts I know to help me solve facts I don't know?



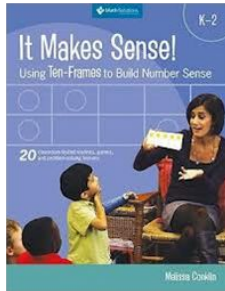
2.OA.B.2 Q1 Focus: *Maintain computational fluency within 10 (from 1st Grade). Students should be using a variety of strategies to add and subtract within 20. Strategies could include: counting on, making ten, decomposing a number leading to a ten, using the relationship between addition and subtraction, and creating equivalent but easier or known sums.*

- Fluently add and subtract within 20 using mental strategies
- By the end of Grade 2, know from memory all *sums* of two one-digit numbers

Note: 2.OA.B.2 Fact fluency means that students should have automaticity when recalling these facts.

EQ 2: How can I use facts I know to help me solve facts I don't know?

Routines, Number Work, Number Talks



R-4 Number Strings p.22-33

Reproducibles B, D

R-5 Adding Nine p.34-45

Reproducibles B, D

R-6 Sums of More than Ten p.46-63

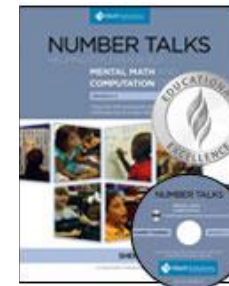
Reproducibles D, 4, 6

P-2 Riddles p.167-172

Reproducibles A, D

P-3 Mystery Sums p.175-179

Reproducibles B, 20



Counting All/Counting On: Number Sentences p.106

Doubles/Near Doubles: Number Sentences p. 111

[Associated SMART Notebook](#) Log into your @rps30 account to access

Making Tens: Number Sentences p.117; p.126-128

[Associated SMART Notebook](#) Log into your @rps30 account to access

Making Landmark or Friendly Numbers p.118

[Associated SMART Notebook](#) Log into your @rps30 account to access

These can be revisited throughout the year to maintain and promote fluency within 20

EQ 2: How can I use facts I know to help me solve facts I don't know?

Mastering the Basic Math Facts: Addition & Subtraction

These lessons can be referred to throughout the year according to the needs of your students.

Lessons can be modified to be taught without the literature connection, if it's not available.

Log into your @rps30 account to access the resources listed with the lessons

Chapter 7: Using Tens

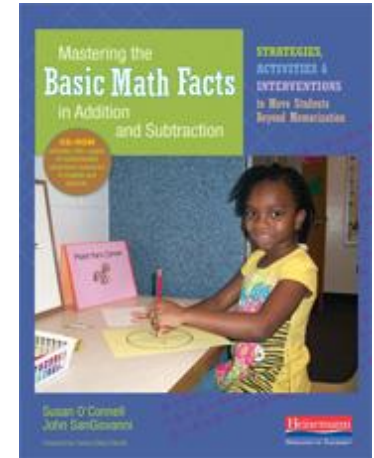
Addition Lesson - p.111-120 Literature Connection: *Diary of a Worm*

Connecting to Subtraction - p.124-125 Literature Connection: *Diary of a Worm*

Teacher Resources (also found on included CD-ROM): [Addition Double Ten-Frame](#) [Subtraction Double Ten-Frame](#)



[Vimeo read aloud](#)

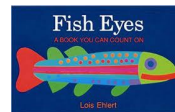


Chapter 8: Using Doubles

Addition Lesson - p.127-133 Literature Connection: *Fish Eyes*

Connecting to Subtraction - p.137-139 Literature Connection: *Fish Eyes*

Teacher Resources (also found on included CD-ROM): [Near-Doubles Trains](#) [Part-Part-Whole Mat](#)



[YouTube read aloud](#)

Review/Maintenance/Intervention

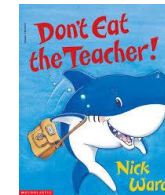
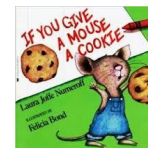
Chapter 4: Adding Ten

Addition Lesson - p.65-70 Literature Connection: *If you Give a Mouse a Cookie*

Connecting to Subtraction - p.72-74 Literature Connection: *Don't Eat the Teacher!*

Teacher Resources (also found on included CD-ROM): [Cookie Template](#) [10 More Chocolate Chips Recording Sheet](#) [Sammy Word Problems](#)

[YouTube read aloud](#)



[YouTube read aloud](#)

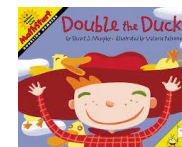
Chapter 5: Doubles

Addition Lesson - p.77-84 Literature Connection: *Double the Ducks*

Connecting to Subtraction - p.88-89 Literature Connection: *Martha Blah, Blah*

Teacher Resources (also found on included CD-ROM): [Double the Animals](#) [Spinners](#) [Part-Part-Whole Mat](#) [Doubles for Ducks](#)

[YouTube read aloud](#)



EQ 2: How can I use facts I know to help me solve facts I don't know?

Lessons and Tasks:

[Building Toward Fluency](#)

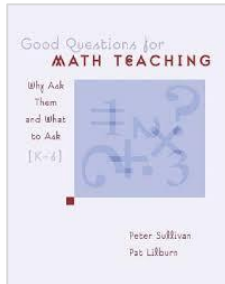
[Hitting the Target Number](#)

[Order is Important](#)

Good Questions for
Math Teaching K-6

Operations (K-2)

p. 41 Q: 4 & 5



Practice and Fluency

Log into your @rps30 account to access the following:

[Find Ten](#)

[Making Ten](#)

[Four in a Row Subtraction](#)

[Sum Search](#)

[Plus 10 Bingo](#)

Mastering the Basic Math Facts: Addition & Subtraction

Log into your @rps30 account to access linked resources

Building Automaticity Activities:

[Adding Ten](#)

Finger Facts p.70

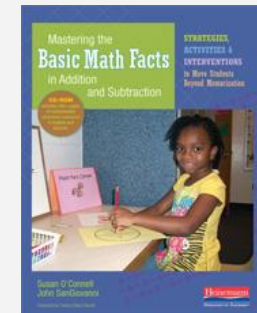
[Linking Cubes Addition](#) p.71

[Linking Cubes Subtraction](#) p.74

[Doubles](#)

Roll and Double It p.82

[Double Ten-Frames](#) p.86



Essential Question 3

How can I build three-digit numbers in more than one way?

★ **2.NBT.A.1** *Q1 and Q2: build a foundational place value understanding of three-digit numbers in order to add/subtract these numbers in third and fourth quarter.*

- Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 726 equals 7 hundreds, 2 tens, and 6 ones
- Understand that 100 can be thought of as a group of ten tens — called a "hundred"
- Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine groups of 100

→ **2.NBT.A.2**

- Count within 1000
- Skip-count by 5s, 10s, and 100s beginning at zero

→ **2.NBT.A.3**

- Read and write numbers to 1000 using base-ten numerals, number names, and a variety of *expanded forms*
- Model and describe numbers within 1000 as groups of 10 in a variety of ways

EQ 3: How can I build three-digit numbers in more than one way?

Problems to Pose:

2.NBT.A.1

Log into your @rps30 account to access

Measurement Division

Multiplication

Problem Type Template

Problem Solving Resources:

Problem Types Chart

Strategy Levels for Problem Types

Open Strategy Sharing Template

Lessons and Tasks:

Making 124

Party Favors

Base Ten Pictures

Building Base Ten Numbers

High Roller

Number Hop

Place Value Play

Practice and Fluency

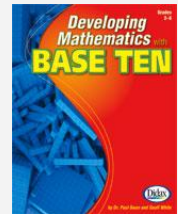
Developing Mathematics with Base Ten

Base Ten Challenges p.32

Longs and Minis p.33

Make My Number p.35-36

Renaming Numbers p.39-40



Log into your @rps30 account to access the following:

Base Ten Concentration

Counting Collections

Make Six Numbers

Numeral Writing Barrier Game

Multimedia Resources

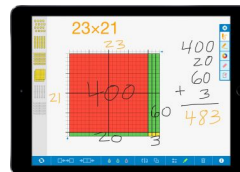


Videos/Songs

Place Value BrainPop Jr.

Interactive Manipulatives

Number Pieces (place value blocks)

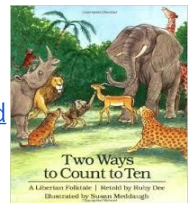


Literature Connections

Log into your @rps30 account to access

Two Ways to Count to Ten

by Ruby Dee YouTube read aloud



Essential Question 4

How can attributes help me identify shapes?



2.G.A.1 *Note: 2.G.A.1 Sizes are compared directly or visually, not compared by measuring.*

- Recognize and draw shapes having specified *attributes* (e.g., number of angles, number of sides, or a given number of equal faces)
- Identify triangles, quadrilaterals, pentagons, hexagons, and cubes

EQ 4: How can attributes help me identify shapes?

Lessons and Tasks:

[Greedy Shapes](#)

[Shape Robot](#)

[Polygons](#)

[The Shape of Things](#)

[Don's Shapes](#)

[Piece it Together](#)

[The Shape of Things - POM](#)

[What is a Triangle?](#) Is It a Triangle Assessment

What is a Triangle? [Resource 1](#) [Resource 2](#)

Log into your @rps30 account to access the following:

[Sorting Shapes](#)

[My Shape Riddle](#)

[Skeletal Models](#)

Blackline Masters of shapes

[Triangles 1](#); [Triangles 2](#)

[Quadrilaterals 1](#); [Quadrilaterals 2](#)

[Tangrams 1](#); [Tangrams 2](#); [Tangram Pieces](#)

[Pentagons](#) [Hexagons](#) [Cubes](#) [Squares](#)

[Attribute Blocks](#) [3D "skeletons"](#)

Pattern Blocks: [Color](#) [Grayscale](#)

Polygons: [Sheet A](#) [Sheet B](#) [Sheet C](#)

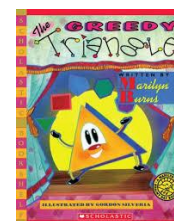
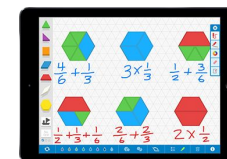
Multimedia Resources

Interactive Manipulatives & Games

[Geometric Solids](#)

[Shape Tool](#)

[Pattern Shapes](#) (pattern blocks)



Literature Connections

Log into your @rps30 account to access

[The Greedy Triangle](#)

by Marilyn Burns

[YouTube read aloud](#)