

2.NBT.9

This math unit provides lesson plans and math group resources to use while teaching the standard 2.NBT.8, which states that students will be able to...

“Explain why addition and subtraction strategies work, using place value and the properties of operations.”

2nd Grade
EXPLAINING PLACE VALUE

Explaining Our Math
When we solve addition or subtraction problems, we can use different strategies to solve. It's important to explain the steps we take.

1. Choose a strategy.
2. Solve your problem.

553
-328
225

24 + 36 + 29

2.NBT.9

Created by Jessica Tobin

Using This Unit

Let's look at the structure of this unit.

Pre-Assessment

- A pre-assessment is included that will help give you an idea of where your students are with this specific standard. Give this pre-assessment prior to any lessons on the standard.

Daily Lessons

- Whole Group- The whole group lesson will typically involve an anchor chart or poster to discuss. This should take about five minutes to complete.
- Partner Practice- The whole group activity will be followed up with a partner practice activity. It will build on the knowledge the students learned or reviewed in the whole group lesson. This should take between 5-10 minutes.
- MATH Groups- There are four break-apart groups to do a day. Each rotation can last between 10-15 minutes depending on how long you get for your math block.
 - Math Writing*- 2 writing options are given each day (one full sized page OR a cut and glue strip for a math journal)
 - Apply Skills*- You will find a variety of practice resources here, such as printables, interactive notebooks, or partner activities.
 - Teacher Time- Small group differentiation can happen here. Most days will include a GREEN 'Remediation' activity, a BLUE 'On-Level' activity, and a PURPLE 'Enrichment' activity. Since there are four group activities and only differentiated levels, some groups will use the same material determined by their data and needs.
 - Hands-on Practice- These centers will give your students chances to get practice with manipulatives and other engaging activities.
- Exit Slip- Every single day will come with an exit slip for students to show what they learned that day. Teacher will cut apart the three strips.

Assessment

- This is to be completed after all lessons and math groups are taught.

Daily Lesson Plans

Each standards-based math unit comes with daily lessons. Some are 3 days, while others may be 5+ days, depending on how complex the standard is. There are **4 main components** of each daily lesson.

2 nd Grade Math: 2.NBT.9 Lesson #1	2.NBT.9 lesson 1
I can explain why my addition or subtraction strategy works.	
Explain why addition and subtraction strategies work, using place value and the properties of operations.	
Activities	
Whole Group	Teacher will introduce the math explanation anchor chart. He or she will discuss the steps for setting up their explanations. Then, teacher will model the process of choosing the best addition or subtraction strategy, solving, then explaining.
Partner Practice	Students will participate in a Mix-Pair-Share activity. They will mix up around the room, pair up with a new partner, and verbally share how the math problem may have been solved.
Math Groups	M- Students will write about addition and subtraction strategies. Teacher will choose the full-page writing sheet OR the cut-apart strips for math journals. A- Teacher will either copy the two printables front/back for students to complete with pencils or slide them into sheet protectors for students to complete with dry erase markers. T- Teacher time will not be differentiated today. Instead, teachers and students will get a guided lesson of the material while setting up their input and first output page of their interactive notebook. Students will cut and glue the two pages into their math notebooks, while discussing the math skill. H- Students will draw a task card and complete the related facts and fact families. Then, students will record their answers on the recording sheet and explain their math for each math skill.
Exit Slip	Students will complete an exit slip independently. Students will trade papers with a nearby classmate and grade their paper with a marker/pen while teacher reviews answers as a whole group.

Whole group activity: This activity will typically include an anchor chart mini poster, plus some sort of teacher modeling activity.




Partner practice: This will be a hands-on partner activity following the whole-group.

M.A.T.H. groups: (Explained in depth on next page) There are four groups/centers.

Exit slip: There are 3 exit slips to a page to cut out and administer for student learning.

M.A.T.H. Groups

Each day comes with four group activity suggestions and materials for 'M.A.T.H.' groups. This is your small group time, splitting the class up into four groups to rotate around the room, participating in different activities for 10-20 minutes a piece.

M	Math Writing	2 options... worksheet or cut/glue notebook strips	
A	Apply New Skills	Worksheet or interactive notebook activities to apply the skill learned in whole group	
T	Teacher Time	Differentiated time for 3 levels (remediation, on-level, enrichment)	<i>Differentiated not given for this standard.</i>
H	Hands-On Math	Engaging center to follow up on the whole group/partner practice	

Day 1 Activities

Here's a look at day 1's whole group, partner practice, MATH group activities, and exit slip.

2nd Grade
Math
2.NBT.9
Lesson #1

2.NBT.9 Lesson 1

Explain why addition and subtraction strategies work, using place value and the properties of operations.

Activities

Teacher will introduce the math explanation anchor chart. Then she will discuss the steps for solving at their explanations. Then, teacher will model the process of showing the first addition or subtraction strategy using their example.

Students will prepare a 1/2 page explanation. They will do it around the room, go up with a partner, and orally explain how the math problem was solved.

Teacher will allow students to ask questions. Teacher will answer the 1/2 page writing piece (1/2 the last page) using the math explanation.

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Explaining Our Math

When we solve addition and subtraction problems, we can use different strategies to solve. It's important to explain the steps we take.

1. Choose a strategy. Examples: give & take, base-ten blocks, expanded form, standard algorithm, open number line
2. Solve your problem.

Explain your math

STANDARD ALGORITHM WITH REBORROWING

$$\begin{array}{r} 4 \text{ } 13 \\ 553 \\ - 328 \\ \hline 225 \end{array}$$

ENDING LATTER THAN WITHIN THE PROBLEM

$$24 + 36 + 29$$

10 + 6 = 16
ONES

$$2 + 3 + 2 = 7 \text{ tens}$$

$$70 + 16 = 86$$

STANDARD ALGORITHM WITH REBORROWING

ENDING LATTER THAN WITHIN THE PROBLEM

ENDING FORM

$\begin{array}{r} 253 \\ + 384 \\ \hline 637 \end{array}$	$\begin{array}{r} 752 \\ - 248 \\ \hline 504 \end{array}$
$600 + 30 + 3$ $+ 200 + 20 + 6$ $800 + 50 + 9$	$\begin{array}{r} 32 \\ 56 \\ \hline 88 \end{array}$

Name: _____

2.NBT.9

625 + 238 was written on the board. Margot wanted to solve it with base-ten blocks. Tom wanted to solve it with expanded form. Will they get different answers? Show both of their work. Answer the question.

a. Explain Margot and Tom's strategies.

b. _____

Name: _____

2.NBT.9

625 + 238 was written on the board. Margot wanted to solve it with base-ten blocks. Tom wanted to solve it with expanded form. Will they get different answers? Show both of their work. Answer the question.

a. Explain Margot and Tom's strategies.

b. _____

Explaining My Math

235 + 366

Explain how you solved this problem.

814 - 263

Explain how you solved this problem.

Explaining My Math

53 + 36 + 22

Explain how you solved this problem.

25 + 28 + 32

Explain how you solved this problem.

2.NBT.9

I can explain why addition and subtraction strategies work.

Writing about math rule #1: Always explain your math, whether you add or subtract.

Writing about math rule #2: Always explain the place value strategies behind it.

Writing about math rule #3: When writing pretend that you are explaining your math to someone who doesn't know how to do math.

Take Notes:

Rule 1: _____

Rule 2: _____

Rule 3: _____

Writing About Math

Let's flip and use our place value strategy to solve.

$$\begin{array}{r} 39 \\ + 37 \\ \hline \end{array}$$

Write an explanation of how place value strategies helped your answer.

Do I Have-On-It!

Related Facts	Fact Families
$901 - 236 =$ $30 \dots$ $236 + \dots = 901$	$627 + 244 =$ \dots \dots \dots
Fact Families	Related Facts
$483 + 358 =$ \dots \dots \dots	$352 + 363 =$ $30 \dots$ $- 363 = 35$
Related Facts	Fact Families
$523 + 274 =$ $30 \dots$ $- 274 = 523$	$741 + 322 =$ \dots \dots \dots

Do I Have-On-It!

Related Facts	Fact Families
$842 - 320 =$ $30 \dots$ $320 + \dots = 842$	$543 + 153 =$ \dots \dots \dots
Fact Families	Related Facts
$853 - 263 =$ \dots \dots \dots	$424 + 447 =$ $30 \dots$ $- 424 = 447$
Related Facts	Fact Families
$800 - 553 =$ $30 \dots$ $553 + \dots = 800$	$258 + 256 =$ \dots \dots \dots

Do I Have-On-It!

Name: _____

Draw a fact card and solve the problems.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

Some of the problems above had related facts within them. How did you use those addition and subtraction strategies to solve the problem?

Some of the problems above had fact families within them. How did you use those addition and subtraction strategies to solve the problem?

2.NBT.9 Exit Slip #1

Solve the problem and explain your addition or subtraction strategy.

562 - 124

Name: _____

2.NBT.9 Exit Slip #1

Solve the problem and explain your addition or subtraction strategy.

562 - 124

Name: _____

2.NBT.9 Exit Slip #1

Solve the problem and explain your addition or subtraction strategy.

562 - 124

Name: _____

Day 2 Activities

Here's a look at day 2's whole group, partner practice, MATH group activities, and exit slip.

The collage features several educational materials:

- Lesson Plan:** A page titled "2nd Grade Math: 2.NBT.9 Lesson #2" explaining why addition and subtraction strategies work.
- Explaining Our Math:** A worksheet with two main tasks:
 - Choose a strategy. Explain how it works using an expanded form, standard algorithm, or open number line.
 - Solve your problem.
 It includes a number line for $325 + 123$ and a problem $32 + 47$ with its expanded form $30 + 49 = 79$.
- Work Mat:** A grid for solving problems like $253 + 325$ and $914 - 325$.
- Explaining My Math:** A worksheet where students explain their strategy for solving $507 + 326$ or $500 - 300 + 20 + 7 + 6$. It includes a word problem about Hank's money.
- Writing About Math:** A sheet with a large problem $908 - 352$ and a prompt: "Write an explanation of how place value strategies helped your answer."
- Math Cards:** A set of 12 cards with problems like $49 + 22 + 38$, $25 + 19 + 83 + 11$, $781 - 329$, $625 + 24$, $588 + 337$, $24 + 29$, $608 - 236$, and $27 + 35$.
- Exit Slips:** Three sheets labeled "2.NBT.9 Exit Slip #2" for students to show their work on problems like $326 + 326$.

Assessments

Each unit comes with a pre-assessment to give to students before you teach the standard. This will come before any introduction to the standard. There is also an assessment to give after your unit is complete.

Name: _____ Date: _____

2.NBT.9 Pre-Assessment

Solve the problem and explain your addition and subtraction strategies.

$53 + 36 + 22$

Explain how you solved this problem.

$315 - 232$

Explain how you solved this problem.

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Name: _____ Date: _____

2.NBT.9 Assessment

Solve the problem using addition and subtraction strategies. Then, explain.

$539 + 287$

Explain how you solved this problem.

$900 - 326$

Explain how you solved this problem.

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