Teacher Guide to Clarification

**2.NBT.9**

**Explain why addition and subtraction strategies using drawings or objects**

2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations 1.

1 Explanations may be supported by drawings or objects

**Solve Problems and Explain Why Strategies Work**

The teacher strategy is to provide opportunity for students to problem solve and explain how their place value or properties of operations work?

This standard allows students to apply and demonstrate their understanding of addition and subtraction strategies and to explain how they work.

Daily Discourse would allow for students to practice the articulation of their thinking. Students will also be use Mathematical Practice 3 when understanding the reasoning of others and critiquing correct or incorrect reasoning.

Example of MP 3

**I have 134 books in my library. I want to have a total of 260 books in my library. How many books will I need?**

Student example- explaining their reasoning with place value strategies and decomposing and composing

I know I need at least 100 more books and that will bring me to 234 books. I can then add 6 more books to make 240 books. Now I can see that I need 20 more books to make 260. Altogether I need 126 books.

Critique the reasoning –

Sam said he can subtract 134 from 260 to find the total number. His work is below, is he correct?

260 – 130 = 130 and 130 minus 4 is 124. You will need 124 more books.

More explanation and examples form FLIPBOOKS



Kansas Association of Teachers of Mathematics (KATM) Flipbooks. Questions or to send feedback: melisa@ksu.edu. Retrieved from: <http://katm.org/wp/wp-content/uploads/flipbooks/2FlipBookedited.pdf>

**Coherence and Connections: Need to Know**

|  |  |  |
| --- | --- | --- |
| Below Grade Level  | At Grade Level | Above Grade Level |
| 1.OA.31.OA.4 | **2.NBT.9**2.NBT.72.NBT.8 | 3.NBT.2 |

In the previous **Numbers and Operations in Base Ten** domain standards, students learn the strategies and skills at a concrete and conceptual level. This standard is asking students to explain why the strategies work, specifically, using place value and the properties of operations. Students need the opportunity to solve problems and explain why their strategies work.

Grade 2 students use their understanding of place value to add and subtract within 1,000 (e.g., 237 + 616 or 822 – 237). They can explain what they are doing as they add and subtract. They become fluent in addition and subtraction within 100.

* For word problems, students extend their ability by solving two-step problems using addition, subtraction or both operations. They also master more advanced one-step addition and subtraction problems in this grade (such as take from with start unknown)

*PARCC Draft Model Content Frameworks: Mathematics Grades K-2* (2013, December).
 Retrieved May 10, 2014, from <http://parcconline.org/sites/parcc/files/PARCCMCFMathematicsNovember2012V3_FINAL_0.pdf>

**Classroom Resources**

**Daily Discourse** would be a great way to implement this standard in your class. Student could also work in pairs, in order to engage all students and then be prepared to explain their reasoning (how they thought about their problem) and how they solved it. Teachers will want to honor all the strategies students use in order to Add and Subtract. Examples of these strategies are: making ten, decomposing and composing numbers, using concrete models like open number lines, ten-frames, Rekenreks, and place value strategies.

PPT

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**Hot Questions**

1 Sam has a total of 2 dozen cookies. 10 of the cookies were homemade. The other cookies were store bought. How many cookies were store bought? Explain how you solved the problem.

 24 cookies

|  |  |
| --- | --- |
| 10 Homemade | ? Store bought cookies |

10 + ? = 24

2 Kurt added 54 + 28, he claims there will be 4 ones in the final sum. Is he correct? Explain how know.

Example: Kurt needs to add 8 ones plus 4 more ones. There will only be 2 ones left over, because when you combine 8 and 4 more ones 2 of the ones make the 8 a ten and then you have 2 ones left over.

3 If I take 55 from 62, I will have three ones left. Do you agree or disagree? Explain why.

Remember students have not learned how to regroup or borrow

Example, I disagree, you will have 7 ones, because I can count up from 55, 7 ones to make 62.

PARCC K-2 Content Model Frameworks - 1st grade Formative Assessment Example
<http://parcconline.org/sites/parcc/files/PARCC%20DRAFT%20K-1%20Prototype%20Mathematics%20Task%20-%20Word%20Problems.pdf>

This example does a good job of outlining the questioning strategies required by the teacher. Feel free to adapt for 2nd grade.

**Additional Resources**

K- 5 Teaching Resources – could be used as homework or center activity

<http://www.k-5mathteachingresources.com/support-files/finding-sums.pdf>

Hawaii Standards Tool Kit –

Stamps - incorporating 2.nbt.5

<http://standardstoolkit.k12.hi.us/stamps-2-nbt-5-2-nbt-9/>

Class Problem - incorporating 2.nbt.5

<http://standardstoolkit.k12.hi.us/class-problem-2-nbt-5-2-nbt-9/>