Grade 2 Task Extensions

Created using the Ten Plus One depth and complexity strategies

1. Extension: Write a number story for 37 + 19.
   Original task: 37 + 19
   Strategy: Write a story.

2. Extension: Draw a diagram to show 13 – 9 and its value.
   Original task: 13 – 9
   Strategy: Draw a picture.

3. Extension: Explain why 103 is an odd number.
   Original task: Is 103 odd or even?
   Strategy: Explain why.

4. Extension: Show another way to add 37 and 19.
   Original task: 37 + 19
   Strategy: Find another way.

5. Extension: Create five different rectangles, and compare and contrast them.
   Original task: Identify the rectangles (in a collection of geometric figures).
   Strategy: Compare and contrast.

6. Extension: What equals 300 when rounded to the nearest hundred?
   Original task: Round 278 to the nearest hundred.
   Strategy: Start with the answer.

7. Extension: Round _____ to the nearest _____.
   Original task: Round 67 to the nearest hundred.
   Strategy: Remove information.

8. Extension: Find half of 38.
   Original task: Make a drawing to show one half.
   Strategy: Solve to learn.

9. Extension: Continue the pattern: 13 – 9 = 4 13 – 8 = 5 13 – 7 = 6
   Original task: 13 – 9
   Strategy: Build a pattern.

10. What happens to 13 – 9 if you increase both numbers by 5?
    Original task: 13 – 9
    Strategy: Ask "What if...?"

Grade 2 Task Extensions (with notes)
Created using the Ten Plus One depth and complexity strategies

1. Extension: Write a number story for 37 + 19.
   Original task: 37 + 19
   Strategy: Write a story.
   Notes: In early grades, asking students to write a number story may not always feel like much of an extension, because it is already a typical part of instruction (and standards). However, students should always be able to do this with a calculation before they are considered proficient in the concept. You can also extend the task by increasing the complexity (using larger numbers or numbers with more digits), but do not teach them procedures for these calculations. Insist that students develop (and justify) their own strategies!

2. Extension: Draw a diagram to show 13 – 9 and its value.
   Original task: 13 – 9
   Strategy: Draw a picture.
   Notes: As with Strategy 1, asking students in the early grades to draw pictures or diagrams may not always feel much like an extension, but students should always be able to justify an answer to a calculation with a drawing as part of showing proficiency with a concept. Otherwise, it is not clear that they understand its meaning. Ideally, students—and advanced students especially—should be able to produce a *variety* of drawings: number lines, real world objects, hundreds charts, base ten blocks, etc. that show a flexible, well-rounded understanding. The drawings may also show a variety of meanings for subtraction: take away, how much more, how far apart, unknown part of a whole, etc.

3. Extension: Explain why 103 is an odd number.
   Original task: Is 103 odd or even?
   Strategy: Explain why.
   Notes: Many students have a quick strategy—just look at the ones digit. However, true proficiency involves the ability to answer the question using the *meaning* of the concept of an odd number (the fact that when you make pairs, there is one left over). Students may also connect this to a pattern—the fact that successive counting numbers are even, odd, even, odd, etc.

4. Extension: Show another way to add 37 and 19.
   Original task: 37 + 19
   Strategy: Find another way.
   Notes: Students who complete tasks quickly have sometimes learned one procedure but may not realize that they could have found a value in numerous other ways. It is reasonable to expect advanced students to create *many* strategies and to be able discuss the advantages and disadvantages of each in a particular situation. Some strategies could involve using diagrams and pictures. Others will involve using grouping and number properties: 37 + 19 = 37 + 20 – 1 37 + 19 = 40 + 20 – 3 – 1 37 + 19 = (30 + 10) + (7 + 9) 37 + 19 = 36 + 20 37 + 19 = 37 + 10 + 3 + 6 37 + 19 = 40 + 19 – 3 37 + 19 = 40 + 16 etc.

5. Extension: Create five different rectangles. Compare and contrast them.
   Original task: Identify the rectangles (in a collection of geometric figures).
   Strategy: Compare and contrast.
   Notes: Alternatively, you could simply give students examples of rectangles to compare and contrast. However, asking students to create their own examples before comparing them adds an additional layer of thinking. Encourage variety! Rectangles may be large, medium-sized, or small. Some rectangles may look "long and skinny" (the length and width are very different). Others may look more compact (more square-like). Some may actually *be* squares (because a square is a special type of rectangle). Also, students should draw rectangles in a variety of orientations; sides need not be vertical/horizontal! As students compare and contrast, they begin to understand the properties of rectangles and to prepare the way for defining them.

6. Extension: What equals 300 when rounded to the nearest hundred?

   Original task: Round 278 to the nearest hundred.

   Strategy: Start with the answer.

   Notes: Tasks created from this strategy should be accessible to most students. However, advanced students should (1) create a larger number of responses, (2) incorporate more complexity and variety into their responses, and (3) organize their responses into patterns, and extend the patterns.

7. Extension: Round _____ to the nearest _____.

   Original task: Round 67 to the nearest hundred.

   Strategy: Remove information.

   Notes: In this case, you may replace the number, the place value, or both at your discretion. You may remove the information (and create the blanks) yourself or you may ask students to do so. Afterward, you (or the student) fill in the blank(s) to create a new problem(s) that will extend the student's thinking. If the student does it, you will need to check that the changes make a worthwhile task for them.

8. Extension: Find half of 38.

   Original task: Make a drawing to show one half.

   Strategy: Solve to learn.

   Notes: This is the one situation in which you are giving students a task that accelerates them into an upcoming topic or standard. There are a few key points: (1) The task should be a natural "next step" in the student's learning progression, (2) You do *not* teach them how to carry out the task, (3) Students use their current knowledge to develop their own strategies. The third point assumes that you have chosen a task for which the student has the necessary conceptual foundation. For example, in this case, students must know what "one half" means, but they have never been given strategies for finding half of a number. You can increase the complexity of the task by choosing a larger number and/or an odd number (or possibly even a non-whole number).

9. Extension: Continue the pattern: 13 – 9 = 4 13 – 8 = 5 13 – 7 = 6

   Original task: 13 – 9

   Strategy: Build a pattern.

   Notes: You may give students a pattern and ask them to extend it, or you may ask them to create their own patterns. As students continue this pattern, they should observe and talk about what stays the same and what changes. The minuend stays the same. Each subtrahend decreases by 1. Each difference increases by 1. Students may explain what causes this pattern. You may also encourage them continue until they reach negative numbers. Eventually, they may write 13 – 1 = 12 13 – 0 = 13 13 – -1 = 14. In this way, students may begin to explore what it means to subtract a negative number by making connections to their existing knowledge. Be sure not to teach them rules for this, though! As a follow up, students may suggest other changes like the one in the next example.

10. Extension: What happens to 13 – 9 if you increase both numbers by 5?

    Original task: 13 – 9

    Strategy: Ask "What if...?"

    Notes: One of the most important parts of understanding the concept of subtraction is to know and explain the effects of changing the minuend, subtrahend, or both. One of the key properties of subtraction is that when the minuend and subtrahend are both increased or decreased by the same amount, the difference remains the same. Students may learn to use this as a strategy to simplify calculations. For example, they may rewrite 174 – 99 as 175 – 100. As with the previous examples, you may increase the complexity by having students decrease both numbers until one or both of them becomes negative! Or they may increase/decrease by fractional amounts.