Just In Time Quick Check
Standard of Learning (SOL) 5.3b

Strand: Number and Number Sense

Standard of Learning (SOL) 5.3b
The student will identify and describe the characteristics of even and odd numbers.

Grade Level Skills:
- Identify which numbers are even or odd.
- Demonstrate with concrete or pictorial representations and explain orally or in writing why a number is even or odd.
- Demonstrate with concrete or pictorial representations, and explain orally or in writing why the sum or difference of two numbers is even or odd.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:
- VDOE Mathematics Instructional Plans (MIPS)
  - 5.3b - Partners and Leftovers: Exploring Odd and Even Numbers (Word) / PDF
- VDOE Algebra Readiness Formative Assessments
  - SOL 5.3b (Word) / PDF
- VDOE Algebra Readiness Remediation Plans
  - Even or Odd (Word) / PDF
- VDOE Word Wall Cards: Grade 5 (Word) | (PDF)
  - Even and Odd Numbers

Supporting and Prerequisite SOL: N/A

SOL 5.3b - Just in Time Quick Check

1. Circle all of the numbers in this list that are odd.

   12   20   56   91   15   33

   71   27   17   50   85   43

2. Draw a model that represents an even number. How do you know that the number is even? Explain your thinking using words, pictures, and numbers.

3. Look at the model. Will the sum of the two numbers shown in the model be even or odd?

   Explain your thinking.

4. Will the difference between an odd number and an even number be odd or even? Draw a model that explains your thinking.

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Common Errors/Misconceptions and their Possible Indications

1. Circle all of the numbers in this list that are odd.

    12 20 56 91 15 33

    71 27 17 50 85 43

    Some students may focus on specific digits rather than thinking about the number as a whole when determining whether the number is even or odd. For example, a student that is focusing on the digits may look at an odd number in the tens place (like the 1 in 12) and decide that the number is odd.

    Some students may be confused when they see the number 0 in the ones place. With a focus on digits, the 0 in a number like 50 can be confusing because it is hard to visualize 0 breaking into two groups. Other students may confuse even and odd with prime and composite. For example, some may know that numbers that end in 5 are divisible by 5 and assume that divisibility means the number is even.

    Teachers may wish to use counters or base ten blocks to represent even and odd numbers. Base ten blocks provide a concrete representation that allows students to build each number and then attempt to break each number into two equal groups, determining if the number is even or if it has one leftover, making it an odd number.

    Some students may be ready to move from the concrete materials to a pictorial representation. These students may benefit from using grid paper to represent numbers and determine if they are odd or even.

2. Draw a model that represents an even number. How do you know that the number is even? Explain your thinking using words, pictures, and numbers.

    Some students may struggle with determining how to draw a model that shows that the number is even.   These students may benefit from using concrete materials to model breaking numbers apart into two equal groups (or pairs of two). Use classroom objects to separate into groups. Have students pair up and see if there is a remainder, or a person without a partner. Objects like base ten blocks, tiles, or any type of counter can be used to explore numbers and determine if they are even or odd.

3. Look at the model. Will the sum of the two numbers shown in the model be even or odd?

    Explain your thinking.

    Some students may have the misconception that the sum of two odd numbers will be odd because both numbers are odd. These students may benefit from practice using concrete objects to model adding two odd numbers. As students build two odd numbers that each have an "odd" piece remaining after pairing up the other counters and then combine those two numbers, they should discover that the two "odd" pieces will pair up in the sum. Teachers may also need to reinforce the meanings of the terms sum and difference.

4. Will the difference between an odd number and an even number be odd or even? Draw a model that explains your thinking.

Some students may have the misconception that the difference is odd when problems involve odd numbers and that the difference is even when problems involve even numbers. Some students may also struggle with thinking about the difference of an odd and an even number without being given specific numbers. These students may benefit from multiple opportunities to create their own problems involving subtraction of odd and even numbers and then use concrete materials to model finding the solutions to those problems.