Just In Time Quick Check
Standard of Learning (SOL) 5.1

Strand: Number and Number Sense

Standard of Learning (SOL) 5.1
The student, given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth.

Grade Level Skills:
- Given a decimal through thousandths, round to the nearest whole number, tenth, or hundredth.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:
- VDOE Mathematics Instructional Plans (MIPS)
  - 5.1 Decimal Rounding (word)/PDF Version
- VDOE Co-Teaching Mathematics Instruction Plans (MIPS)
  - 5.1 Decimal Rounding (word)/PDF Version
- VDOE Algebra Readiness Formative Assessments
  - SOL 5.1 (Word) / PDF
- VDOE Algebra Readiness Remediation Plans
  - Rounding with Number Lines (Word) / PDF
- VDOE Word Wall Cards: Grade 5 (Word) | (PDF)
  - Decimal Place Value
  - Round
- VDOE Number Sense Progression (Word), page 17, from 2017 Mathematics SOL Institutes

Supporting and Prerequisite SOL: 4.1c, 4.3a, 4.3b, 3.1a, 3.1b

SOL 5.1 - Just in Time Quick Check

1. Use a number line to round 1.65 to the nearest whole number.

2. Round 0.98 to the nearest tenth.

3. Complete the table below:

Number to Round	Round to the nearest whole number	Round to the nearest tenth	Round to the nearest hundredth
4.635			

4. Write a number that will round to 4.68. Explain how you know that it will round to 4.68.

5. Select all of the numbers that will round to 3.91 when rounded to the nearest hundredth.

   4.912   3.921   3.913   3.916   3.914   3.908

6. Maria rounded $1.67 to $2.00. Derek rounded it to $1.70. Who rounded $1.67 correctly? Explain your thinking using pictures, numbers, and words.

SOL 5.1 - Just in Time Quick Check Teacher Notes
Common Errors/Misconceptions and their Possible Indications

1. Use a number line to round 1.65 to the nearest whole number.

Some students may have a misconception about what the upper and lower boundary should be on the number line when rounding to the nearest whole number. Many students struggle with place names, values, and patterns within numbers. These students may have difficulty recognizing that 1.65 comes between 1 and 2. Some students may incorrectly place 1 as the upper boundary while other students may struggle with the idea of rounding to the whole number and then incorrectly label the boundaries as 1.60 and 1.70 (or 1.6 and 1.7).

Also, some students may be able to determine the boundaries, but then incorrectly round this number to one, not understanding that rounding is determining the whole number that the selected number is closest to.

If students have been taught a rounding rule or trick this may make it difficult for them to model rounding on a number line and may impede their understanding of evaluating the number as a whole value for they have been conditioned to simply look at digits in isolation without evaluating the complete value of a number. They may also forget about the whole number because they are focusing only on the tenths place to help them determine the selected numbers' closeness to a whole.

Students struggling with this concept may benefit from experiences locating decimal numbers on a number line and determining the upper and lower boundaries and then moving on to creating number lines to show the decimal that is to be rounded. This allows students to start with concrete experiences before moving onto more abstract ideas.

2. Round 0.98 to the nearest tenth.

Some students may have a misconception about what the upper and lower boundary numbers are when rounding to the nearest tenth of a number. Many students struggle with place names, values, and patterns within numbers. Students may not have enough experience with counting in tenths, leading them to round 0.98 to .10 instead of 1.0. These students may benefit from experiences rounding tenths on a number line as well as extra practice with counting in tenths. Relating amounts to money can be a concrete way for students to represent the idea of rounding decimals.

3. Complete the table below:

Number to Round	Round to the nearest whole number	Round to the nearest tenth	Round to the nearest hundredth
4.635			

Some students may focus on digits rather than thinking of the number as a whole. This may result in these students forgetting to include the other digits when rounding to a specific place. For example, the student may write just a 6 when rounding to the nearest tenth instead of including the whole number. These students may benefit from continuing to practice rounding numbers using a tool such as a number line to see visually the number they are rounding.

4. Write a number that will round to 4.68. Explain how you know that it will round to 4.68.

Some students may struggle determining what place this number is rounded to and then determining the range of numbers that would round to this number. Possible teaching strategies could be to give students a target number and have them determine all of the other numbers that would round to the target number.

5. Select all of the numbers that will round to 3.91 when rounded to the nearest hundredth.

    4.912   3.921   3.913   3.916   3.914   3.908

Some students may struggle with starting from the rounded number and then thinking about numbers that may round to that number. Another possibility is that students may focus on the rounded decimal portion and forget to look at the whole number (for example, selecting 4.912, without realizing that the whole number is incorrect because they only see the .91.) Teachers may wish to give these students a number and have them determine numbers that would round to the given number.

6. Maria rounded $1.67 to $2.00. Derek rounded it to $1.70. Who rounded $1.67 correctly? Explain your thinking using pictures, numbers, and words.

Both students are correct. Students need to be able to justify and explain their answer for whom they think rounded correctly. This is an open-ended question, so look for the explanation and the tools the students used to explain themselves – student explanations should justify their reasoning for choosing to round in a specific way. For example, some students may choose $2.00 because money is frequently rounded to the whole dollar while other students may choose $1.70 because it is more precise or closer to the exact answer.

Students may benefit from concrete examples relating money to decimals. Students would also benefit from frequent opportunities to explain and justify their thinking.