

Standard Addressed by these Number Talks:

**5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Pose these number sentences to students and ask them to solve them mentally. The student's role is to demonstrate fluent strategies for solving these problems. The teacher's role is to pose the problem, give students a few minutes to solve the problems and then lead a discussion about how they solved the problems. Teachers will need to write down students' thinking using number sentences that will show how students solved the problems. You need not pose all at once, but instead do a few each week during the unit (posing one problem in one setting, or a string of problems that build on each other in one setting or over the course of a week). Conversations may range from 10-20 minutes in length. See the article *Number Talks Build Numerical Reasoning* (October 2011 • teaching children mathematics) for more information.

Standard	Number Talk Problem Sets	Rationale
<b>5.NBT.7</b> Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	$0.5 + 0.5$ $0.25 + 0.25$ $0.75 + 0.25$ $0.75 + 0.5$ $0.75 + 0.75$	Because of the structure of the base-ten system, students should use the same place value understanding for adding decimals that they used for adding whole numbers.
<b>5.NBT.7</b> Add, <b>subtract</b> , multiply, and divide decimals to hundredths, using <i>concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</i>	$1 - 0.5$ $1 - 0.75$ $0.75 - 0.5$ $1.5 - 0.75$ $2.5 - 1.25$	Because of the structure of the base-ten system, students should use the same place value understanding for subtracting decimals that they used for subtracting whole numbers.
<b>5.NBT.7</b> Add, subtract, <b>multiply</b> , and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	$10 \times 0.1$ $30 \times 0.1$ $300 \times 0.1$  $0.3 \times 0.1$ $0.3 \times 0.01$ $0.3 \times 0.04$  $4 \times 0.25$ $8 \times 0.25$ $0.4 \times 0.25$ $0.8 \times 0.25$	<p>These number talks encourage students to examine our place value system and what it means to multiply by a number less than one.</p> <p>Try to refrain from teaching student tricks such as multiple the two numbers and then add the number of decimal places in the problem to the answer. Students can carry out this procedure with very little understanding and the goal is to make sense of the problem and use <i>strategies based on place value, properties of operations, and/or the relationship between addition and subtraction</i>, to solve these problems.</p>

<p><b>5.NBT.7</b> Add, subtract, multiply, and <b>divide</b> decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	$1 \div 0.1$ $10 \div 0.1$ $4 \div 0.1$ $4 \div 0.2$ $4 \div 0.5$ $4 \div 0.01$	<p>As with the previous number talks, please focus students on the conceptual understanding and not on tricks and rote procedures that they carry out with no understanding. Being able to use inverse operations (that multiplication and division are inversely related) will help students to see what is happening when we divide by a number less than one. If students are struggling, ask them how many 0.1 are in 1 to get them thinking.</p>
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