

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i>

Using this template: The italicized words are meant to guide teachers in their planning and can be replaced with lesson details.

Prerequisites Skills:

- *There are points on a number line between whole numbers*
- *Understanding fraction notation and vocabulary*
- *The relationship between the numerator and denominator*
- *Fractions are equal parts of a whole*
- *Number lines need anchor numbers; using “landmarks” and scale to place numbers on a number line*
- *Where fractions and decimals exist in real life*

Misconceptions:

What gaps and misconceptions might students have that need to be addressed?

- *The larger the denominator, the larger the number*
- *Hundredths are larger than tenths*
- *Where fractions and decimals exist*
- *You cannot write whole numbers as fractions or decimals*

Language Building:

Language of division (e.g. square one that has been divided into ten parts)

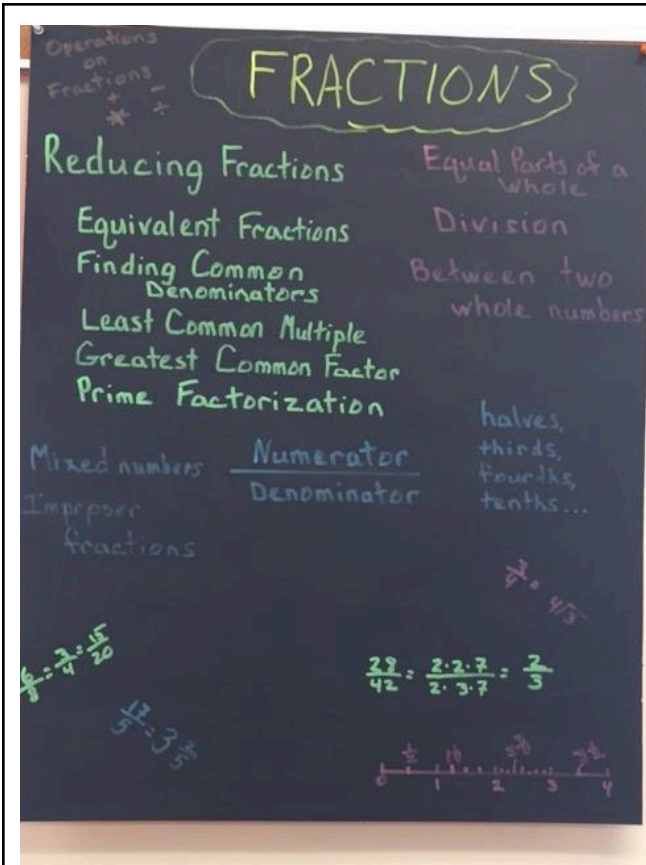
WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i>

Numerator, denominator, vincular, fraction bar (have an anchor chart)
Equal parts, whole
*Hundred**ths** versus hundreds, thousand**ths** versus thousands*

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<p><i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i></p>



WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i>

Low Floor High Ceiling Anchor:

[Positive Pie Task](#)

[Dining Out Decimals Tasks](#)

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<p><i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i></p>

DAY: One

STRUCTURE	PLAN/ACTIVITIES	OBSERVATIONS/NOTES/QUESTIONING
MATERIALS	<p><i>10 by 10 grid</i> cut squares</p> <p><i>10 by 1 grids</i></p> <p>Closure card</p>	
<p>“WARM UP” FORMATIVE ASSESSMENT</p> <p>0 - 5 minutes 10:05 - 10:10</p>	<p><i>Introduce the Learning target: I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000 (tool building).</i></p> <p><i>Pop & Drop Counting. Start with 0.3 and count up by 0.2. Get around the classroom twice. Pop each time we get to a whole number (they can say the whole number and then sit but still say a number when their turn comes up again).</i></p>	<p>Write the word <i>tenths</i> on the board to emphasize the “th” and the pronunciation. Emphasize importance of enunciation when they pronounce the decimal.</p> <p>Emphasize that the purpose is getting used to the language. We will not get into the weeds of the pattern (not this time!).</p> <p>Looking for students who are struggling with “ths.”</p>
“LAUNCH”	<i>Introduce the new Square One -</i>	1. What’s different about square 1 today?

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<p><i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i></p>

<p>INTUITIVE HOOK</p> <p>15-20 minutes 10:10 - 10:30</p>	<p><u>Tenths</u></p> <ul style="list-style-type: none"> ● Give each student the 10/10 by 1 square one first (tenths) (ask them question 1 at right) ● Shade in 1 piece (ask questions 2-6 at right) ● Shade in 3 pieces (ask questions 2-6 at right) ● Shade in 5 pieces. (ask questions 2-6 at right) <p><u>Hundredths</u></p> <ul style="list-style-type: none"> ● Give each student a 10/10 by 10/10 square one (ask them question 1 at right) ● Shade in 1 piece (ask questions 2-6 at right) ● Shade in 3 pieces (ask questions 2-6 at right) ● Shade in 5 pieces. (ask questions 2-6 at right) <p>Create an anchor chart with this vocabulary: Fractions, decimals, equal parts of a whole, numerator, denominator, base 10 (decimals are a fraction in base 10), vincular, tenths, hundredths</p>	<ol style="list-style-type: none"> 2. How many pieces has the area been split into? How do you know? 3. What part of the fraction does this describe? (denominator) 4. What part of the fraction does this describe? (numerator) 5. What if I asked you to shade in 5 tenths? What changes on the model? What changes in way we write the fraction? 6. Does this remind you of any other fractions that we've built? <p>-----</p> <ol style="list-style-type: none"> 7. What do you notice about tenths and hundredths? Why is that? (Look for students to be able to say that hundredths take up less of the whole area than tenths do) What do you think thousandths would look like?
---	--	---

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<p><i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i></p>

<p>CONCEPT BUILDING</p> <p>20 minutes 10:30 - 10:50</p>	<p><i>These are special fractions because the denominator is a multiple of 10.</i></p> <p><i>Writing the fractions as decimals.</i></p> <p><i>Explicitly use the three examples we've worked with earlier in the lesson. Model how they will write all three on one card. Make these models available for reference.</i></p> <p><u><i>Guided Practice:</i></u> <i>Model these two examples together as a whole class using the (0.7, 0.40). Each student completes the model and writes the fraction, decimal, and word form on the card.</i></p>	<p>8. Does anyone know another way I can write this fraction (three tenths)?</p> <p>9. What are all of the ways I can write this fraction (three tenths)? (word, fraction, decimal)</p> <p>During guided practice, ask individuals:</p> <ol style="list-style-type: none"> 1. Which version of square one makes the most sense to use? Why? 2. How will you write that as a fraction? How will you write this in word form? How will you write this as a decimal?
<p>PRACTICE</p> <p>10:50-11:00 10 minutes</p>	<ol style="list-style-type: none"> 1. Give each student an index card with a fraction or word on it. Shade the following on your square one, giving them each an index card. 	<p>Ask individuals: Which version of square one makes the most sense to use? Why? How will you write that as a fraction? How will you write this in word form?</p>

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<p><i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i></p> <p><i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i></p>

	<p><i>2. Talk with a partner about what it is. Work with your partner to make sure each card has the fraction notation, decimal notation and word. Decide with your partner who has the greater value.</i></p> <p><i>3. Then the class will line up in order (next day if there is not time).</i></p>	
<p>“EXIT CARD” FORMATIVE ASSESSMENT</p> <p>11:00-11:10</p> <p>10 minutes</p>	<p><u>Closure card:</u></p>	

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i>

VISUAL SPACE (WORD WALL, WHITEBOARD & NOTEBOOK) PLAN

Visual aspects are integrated into instruction. The teacher explicitly refers to words on the word wall, definitions, learning objectives, etc. rather than just posting them or using them as decoration.

Word Wall:

Instructional Questions:

Learning Objectives, Math Practices and Norms:

Anchor Charts:

Examples:

Conjectures:

WCSU Math Lesson and Unit Planning - Grade 5 Lesson Study

Essential Questions	<i>How are fractions and decimals related? How are they the same and how are they different?</i>
WCSU Performance Indicator(s) (Non-Negotiables)	<i>5.2 Solves addition and subtraction problems for decimal numbers</i>
Learning Targets	<i>I can demonstrate understanding of decimal notation for fractions with denominators of 10, 100, or 1000.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using square one 10x10 grid.</i> <i>I can model quantities for ones, tenths, hundredths, and thousandths using an open number.</i>