TCM | Teacher Created Materials

Texas Student Success in Mathematics

Grade 5 Sample

Texas Student Success in Mathematics

Sample 5th Grade Math Pacing Plan (2 Hours, 50 Minutes)

TEK Focus	Whole-Group Instruction #1 (20 Minutes)	Small-Group Rotation #1 (20 Minute Rotations)		Independent Practice (15 minutes)	Whole-Group Instruction #2 (20 Minutes)	Small-Group Rotation #2 (20 Minute Rotations)		Independent Practice (15 minutes)	Closure (20 Minutes)
		Teacher Station	Independent Station			Teacher Station	Independent Station		
Day 1 — **5.4F** Simplify numerical expressions that do not involve exponents, including up to two levels of grouping.	**Lesson 1** "Simplify It!" and "What Comes First?"	**Lesson 1** "Refocus"	**Lesson 1** "Quick Check" and Game Play	**Lesson 1** "Independent Practice"	**Lesson 2** "Expressive Expressions" and "Examining Expressions"	**Lesson 2** "Refocus"	**Lesson 2** "Quick Check" and Game Play	**Lesson 2** "Independent Practice"	**Lesson 1** "Pita Pan" and "Reflection"
Day 2 — **5.2B** Compare and order two decimals to thousandths and represent comparisons using the symbols >, <, or =.	**Lesson 5** "Check Out that Place Value?" and "Compare These!"	**Lesson 5** "Refocus"	**Lesson 5** "Quick Check" and Game Play	**Lesson 5** "Independent Practice"	**Lesson 6** "Nifty Number Lines" and "Closer to…"	**Lesson 6** "Refocus"	**Lesson 6** "Quick Check" and Game Play	**Lesson 6** "Independent Practice"	**Lesson 6** "Run Grandpa, Run!" and "Reflection"
Day 3 — **5.3K** Add and subtract positive rational numbers fluently. **5.3H** Represent & solve addition & subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations.	**Lesson 9** "Valuing Place Value" and "Line 'Em Up"	**Lesson 9** "Refocus"	**Lesson 9** "Quick Check" and Game Play	**Lesson 9** "Independent Practice"	**Lesson 13** "Cupcake Contest" and "Box It Up"	**Lesson 13** "Refocus"	**Lesson 13** "Quick Check" and Game Play	**Lesson 13** "Independent Practice"	**Lesson 13** "Got Oil?" and "Reflection"
Day 4 — **5.3K** Add and subtract positive rational numbers fluently. **5.3H** Represent & solve addition & subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations.	**Lesson 14** "Morning Run" and "How Much Farther?"	**Lesson 14** "Refocus"	**Lesson 14** "Quick Check" and Game Play	**Lesson 14** "Independent Practice"	**Lesson 15** "Real World Fractions" and "Fraction Word Problems"	**Lesson 15** "Refocus"	**Lesson 15** "Quick Check" and Game Play	**Lesson 15** "Independent Practice"	**Lesson 15** "Mindy's Stuffed Animals" and "Reflection"

TCM | Teacher Created Materials

Comparing Decimals to the Thousandths

Learning Objectives

Number and Operations in Base Ten

- Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

Mathematical Practices and Processes

- Model with mathematics.
- Attend to precision.
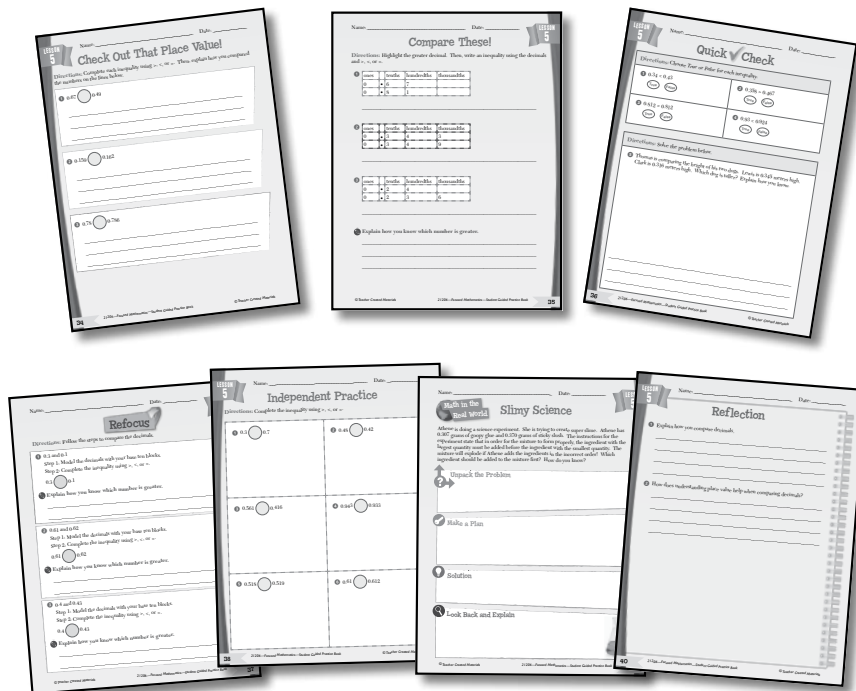- Look for and make use of structure.

Progress Monitoring

The *Student Guided Practice Book* pages below can be used to formally and informally assess student understanding of the concepts.

Materials

- *Student Guided Practice Book* (pages 34–40)
- Math Fluency Game Sets
- Digital Math Fluency Games
- Number Cards (filename: numbers.pdf)
- Hundredths Grid (filename: hundredths.pdf)
- base ten block punchouts
- number cube
- sticky notes
- tape

Student Misconceptions

When comparing decimals, students may incorrectly assign meaning to the number based on the whole number base ten system (e.g., ones, tens, hundreds, etc.). Students may mistakenly think 0.177 is the greater number when comparing 0.27 to 0.177, for example. They are likely comparing 27 and 177 and disregarding the decimal point. These students need a better understanding of decimal place values.

Comparing Decimals to the Thousandths *(cont.)*

Warm-Up ⟳ 10 min.

1. Divide the class into two teams. In the front of the room, place a deck of number cards facedown along with a number cube. Have one person from each team come to the front of the room.

2. Roll the number cube. The number that is rolled is the number of cards each player must take from the deck. Each player arranges his or her cards to create the greatest number possible. Players write their numbers on the board. The team with the greatest number wins a point for that round. A new representative for each team comes to the front of the room for the next round of play.

3. After the pair of numbers has been displayed, discuss the value of each number and its digits. Encourage students to attend to place value during the discussion. For example, *54,210 is greater than 33,220.*

Language and Vocabulary ⟳ 10 min.

1. Write the vocabulary terms on sticky notes and place them on the board.

compare   equal   greater than   less than   tenths   hundredths   thousandths

2. Write these sentence frames on the board.

   • *The underlined digit in 0.2$\underline{1}$3 is the _____ place.*

   • *The underlined digit in 0.3$\underline{7}$ is the _____ place.*

   • *The underlined digit in 1.26$\underline{8}$ is the _____ place.*

   • *345,678 is _____ 456,309*

   • *54,912 is _____ 45,834*

   • *6,001 is _____ to 6,001*

   • *When you _____ numbers, you need to look at the place value of each digit.*

3. Review each vocabulary term and its definition with the class. Pass out the vocabulary sticky notes to pairs or small groups of students.

4. Read a sentence frame. Say, "Look at the word on your sticky note. If you think your word correctly completes this sentence, come up and place the sticky note on the board." When the word has been placed, reread the sentence for accuracy and meaning. Ask if the rest of the class agrees with the word choice. Continue working through each of the sentence frames.

Comparing Decimals to the Thousandths *(cont.)*

Whole-Group Lesson ⏱ 40 min.

Focus

1. The following lesson will address this focus question:

   How can you compare two decimal numbers to determine which number is greater?

2. You may wish to write the focus question on the board and read it aloud to students. Explain that you will revisit the focus question at the end of the lesson.

I Do

1. Say, "Today we are going to compare decimal numbers." Write the following numbers on the board: *0.35* and *0.17*. Say, "A hundredths grid for decimals can help us compare these two numbers." Provide each pair of students with a copy of the Hundredths Grid sheet. Have pairs label one grid *0.35* and the other *0.17*. Then, tape a grid under each decimal on the board.

2. Say, "The decimal 0.35 is composed of three tenths and five hundredths. I can show this on the hundredths grid by filling in three strips of tenths and five hundredths." Model shading in the grid. Have students do the same on their grids. Ask, "In 0.17, how many tenths strips do we need to fill?" *(one)* "How many hundredths squares do we need to fill?" *(seven)* Have students fill in 0.17 on their grids. Fill in your grid so students can check their work.

3. Ask, "Which grid shows the greater number? How do you know?" *(More of the grid is shaded for 0.35.)* If no students suggest studying the place value of the number, say, "When we compare decimals, we always start by comparing the digit with the greatest value. These decimals include tenths and hundredths. Which value is greater?" *(tenths)* Underline the tenths place on both decimals. Then, point to the grids. Say, "If I compare the three tenths for 0.35 and one tenth for 0.17, I know that three tenths is greater than one tenth. That makes 0.35 the greater decimal."

4. Write *0.357* and *0.571* on the board. Ask, "What do you know about these two numbers?" *(Both numbers are decimals or part of a whole and extend to the thousandths place.)*

Whole-Group Lesson *(cont.)*

I Do *(cont.)*

5. Ask, "How do I determine which is the greater number?" Some students may suggest using a model like a hundredths chart, while others may suggest comparing the numbers using place value. Validate all responses, but encourage students to make the connection between comparing numbers and the value of each digit. Underline the tenths of each number. Say, "The tenths is the greatest place in both numbers. The number *0.357* has three tenths, and *0.571* has five tenths. Five tenths is greater than three tenths, so 0.571 is greater than 0.357." Write *0.357 < 0.571* on the board.

6. Now, write *0.45* and *0.412* on the board. Ask, "What do you notice about these two decimal numbers?" (*They have a different number of digits.*) Ask, "What can I do to make both decimals have the same number of digits?" (*Add a zero at the end of the decimal 0.45.*) Say, "Inserting a zero at the end of a decimal number does not change the value of the number. Now how do I compare these two numbers?" (*Look to the greatest place value.*) Have a student volunteer underline the tenths of each number. Ask, "Since both numbers have four tenths, how do I compare them?" (*Compare the next greatest place, the hundredths.*) Underline the hundredths of both numbers. Say, "There are five hundredths in 0.450 and one hundredth in 0.412. Although the numbers have the same number of tenths, 0.450 is greater because it has more hundredths." Write *0.45 > 0.412* on the board.

Language Support

Require students to read decimals correctly. It is important for you to model this by reading decimals correctly throughout all lessons that include decimals. Remind students that the decimal point is read as *and*. When reading the number, tell students to "chunk" the whole-number part of the number then "chunk" the decimal part of the number. For example, 36.125 is read as *thirty-six and one hundred twenty-five thousandths*.

Comparing Decimals to the Thousandths *(cont.)*

Whole-Group Lesson *(cont.)*

We Do

1. Refer students to the Check Out that Place Value! activity sheet (*Student Guided Practice Book*, page 34). Say, "Let's compare more decimals together." Have a student volunteer read Question 1: *0.67 (is greater than, less than, or equal to) 0.49.*

2. Say, "We have two decimals, 0.67 and 0.49. Tell your partner how to determine which number is greater." Allow students to share their ideas. If no one suggests it, explain that students should look at the digit with the greatest place value, the tenths. Have a student volunteer underline the tenths in each number and tell which number is greater. Encourage students to use place value knowledge and terms in their explanation. For example, "Both numbers are decimals and have digits to the hundredths place. The greatest place value for both numbers is the tenths place. The number 0.67 has six tenths and 0.49 has four tenths. Six tenths is greater than four tenths, so 0.67 is greater than 0.49." Have students use the correct comparison symbol to show the relationship between the two numbers: 0.67 > 0.49.

3. Have students explain how they compared the numbers. To help students explain their reasoning, provide them with the following sentence frames:

   - *If the numbers are two decimals, with no whole numbers, the _____ place is the greatest place value.*

   - *_____ tenths is greater than _____ tenths.*

   - *_____ tenths is less than _____ tenths.*

   - *The greatest place is the same, so I went to the _____ place.*

4. Write *0.159* and *0.162* on the board. Ask, "How do we determine the greater decimal?" Allow students to share their ideas. (*The tenths place is the greatest place in both numbers, and both numbers have a 1 in the tenths place.*) If no one suggests it, say, "If the greatest place is the same, we go to the next greatest place to compare: the hundredths place." Have students complete the inequality with a comparison symbol: 0.159 < 0.162. Ask students to explain how they compared the two numbers.

5. Repeat Step 4 for Questions 3. Say, "You will need to compare decimals with a different number of digits." Ask students to explain the steps to compare the decimals and the correct inequality symbol to insert.

Comparing Decimals to the Thousandths *(cont.)*

Whole-Group Lesson *(cont.)*

You Do

1. Refer students to the Compare These! activity sheet (*Student Guided Practice Book*, page 35). Provide the sentence frames from Step 3 of the We Do section to help students explain their reasoning.

2. Have students share their comparisons and reasoning. If students have difficulty explaining their reasoning, remind them to use the sentence frames and vocabulary terms.

Closing the Whole-Group Lesson

Revisit the focus question for the lesson: *How can you compare two decimal numbers to determine which number is greater?* Ask students to explain how to compare two numbers. Students should say to compare the greatest place value first. Ask students to describe what they would do if the greatest place value is the same in both numbers. Guide students to suggest going to the next greatest place value to compare digits. Ask students to explain how to compare decimal numbers with a different number of digits. Students should explain that inserting a zero at the end of a decimal number does not change the value.

Progress Monitoring (5) min.

1. Have students complete the Quick Check activity sheet (*Student Guided Practice Book*, page 36) to gauge student progress toward mastery of the Learning Objectives.

2. Based on the results of the Quick Check activity sheet and your observations during the lesson, identify students who may benefit from additional instruction in the Learning Objectives. These students will be placed into a small group for reteaching. See instructions on the following page.

Comparing Decimals to the Thousandths *(cont.)*

Differentiated Instruction ⟳ 20 min.

Gather students for reteaching. The remaining students will complete the Independent Practice activity sheet (*Student Guided Practice Book*, page 38) to reinforce their learning and then play the Math Fluency Games.

Refocus PPT

Revisit the focus question for the lesson: *How can you compare two decimal numbers to determine which number is greater?* Provide students with base ten block punchouts. Say, "Since this lesson focuses on decimals and not whole numbers, we are going to use the base ten blocks a little differently than usual. This time, the flat will represent one whole, the rods the tenths, and the units the hundredths."

Write the numbers *0.3* and *0.4* on the board. Say, "Show me how to make these two numbers using blocks." Allow time for students to explore and discover how to represent each place value with the blocks. Compare the numbers based on the blocks. Ask, "Which is the greater number?" (*The number 0.4 is greater because it has the most number of rods, which represent the greater place*.) Deepen the connection by saying, "The decimal *0.4* has four tenths, and *0.3* has three tenths." Point to the rods as you say this. Ask, "Which is more, four tenths or three tenths?" (*four tenths*) Say, "That means 0.4 is the greater decimal because it has more tenths."

Support students as they complete Question 1 on the Refocus activity sheet (*Student Guided Practice Book*, page 37) and then have them solve Questions 2 and 3 independently.

Math Fluency Games

Math Fluency Game Sets

Digital Math Fluency Games

✓ Extend Learning

Ask students how they might compare more than two decimals at a time. Write *0.234, 0.45,* and *0.1* on the board. Say, "Think of what we learned about comparing two decimals. How can that help us in comparing three decimals with a different number of digits?" Ask students to explain how they would compare the three decimal numbers. Have students complete the Lesson 5 Extend Learning Task (filename: extendtask5.pdf).

Comparing Decimals to the Thousandths (cont.)

Math in the Real World (30) min.

1. Refer students to the Math in the Real World: Slimy Science task (*Student Guided Practice Book*, page 39). Have a student read the task aloud. Tell students to explain or summarize the task to their partners. Have a few students share their summaries.

2. Ask students to think about what information they will need to solve the task and what the task is asking them to do. Then, have them share with a partner. Ask a few students to share aloud. Students should identify that they know that Athene has 0.307 grams of goopy glue and 0.370 grams of sticky slush. They need to figure out which decimal is the largest so that ingredient can be added first. Have students work in groups of two or three to complete the task.

3. As students are working, circulate and ask focusing, assessing, and advancing questions:
   - *What information do you know?*
   - *How do you know your solution is correct?*
   - *How can you explain your reasoning?*

Sentence Frames for Explaining Reasoning

   - *Athene needs to study the _____ of both numbers.*
   - *Neither number has a whole number, but both extend to the _____ place.*
   - *She needs to look to the greatest place, which is the _____ place.*
   - *Since both numbers have the same number of _____, she needs to compare the _____ place value.*

4. Observe how students are solving the task, and choose a few groups who solved the task in different ways to share their solutions and reasoning. Try to have the solutions move from concrete representations to more abstract representations. For example, have students share solutions with visual representations (base ten blocks) and then the symbolic representations (inequalities). Make sure students explain their reasoning as they share solutions.

5. As groups are sharing their solution paths, reasoning, and strategies, ask questions:
   - *How is this solution similar to the solution previously presented?*
   - *How is this strategy similar to one we have seen in a previous task?*
   - *Do you agree or disagree with the solution path and reasoning? Why?*

Lesson Reflection (5) min.

Have students summarize their learning about comparing decimals, and provide feedback on any questions they still have about the content on the Reflection activity sheet (*Student Guided Practice Book*, page 40).

Check Out That Place Value!

Directions: Complete each inequality using >, <, or =. Then, explain how you compared the numbers on the lines below.

Name: _____ Date: _____

1 0.67 ◯ 0.49

_____

_____

_____

2 0.159 ◯ 0.162

_____

_____

_____

3 0.78 ◯ 0.786

_____

_____

_____

21206—Focused Mathematics—Student Guided Practice Book   © Teacher Created Materials

Compare These!

Directions: Highlight the greater decimal. Then, write an inequality using the decimals and >, <, or =.

1

ones		tenths	hundredths	thousandths
0	•	6	7	
0	•	8	1	

_____

2

ones		tenths	hundredths	thousandths
0	•	3	4	3
0	•	3	4	9

_____

3

ones		tenths	hundredths	thousandths
0	•	2	4	
0	•	2	3	6

_____

📝 **Explain how you know which number is greater.**

_____

_____

_____

Name: _____ Date: _____

Quick ✔ Check

Directions: Choose *True* or *False* for each inequality.

1 0.34 < 0.43

(True)   (False)

2 0.358 > 0.467

(True)   (False)

3 0.812 = 0.812

(True)   (False)

4 0.93 < 0.924

(True)   (False)

Directions: Solve the problem below.

5 Thomas is comparing the height of his two dogs. Lewis is 0.345 meters high. Clark is 0.316 meters high. Which dog is taller? Explain how you know.

_____

_____

_____

Refocus

Directions: Follow the steps to compare the decimals.

1 0.3 and 0.1

Step 1: Model the decimals with your base ten blocks.

Step 2: Complete the inequality using >, <, or =.

0.3 ◯ 0.1

✏️ **Explain how you know which number is greater.**

_____

_____

2 0.61 and 0.62

Step 1: Model the decimals with your base ten blocks.

Step 2: Complete the inequality using >, <, or =.

0.61 ◯ 0.62

✏️ **Explain how you know which number is greater.**

_____

_____

3 0.4 and 0.43

Step 1: Model the decimals with your base ten blocks.

Step 2: Complete the inequality using >, <, or =.

0.4 ◯ 0.43

✏️ **Explain how you know which number is greater.**

_____

_____

Name: _____ Date: _____

Independent Practice

Directions: Complete the inequality using >, <, or =.

1 0.3 ◯ 0.7

2 0.48 ◯ 0.42

3 0.561 ◯ 0.416

4 0.943 ◯ 0.933

5 0.518 ◯ 0.519

6 0.61 ◯ 0.612

Math in the Real World

Slimy Science

Athene is doing a science experiment. She is trying to create super slime. Athene has 0.307 grams of goopy glue and 0.370 grams of sticky slush. The instructions for the experiment state that in order for the mixture to form properly, the ingredient with the largest quantity must be added before the ingredient with the smallest quantity. The mixture will explode if Athene adds the ingredients in the incorrect order! Which ingredient should be added to the mixture first? How do you know?

? **Unpack the Problem**

🔑 **Make a Plan**

💡 **Solution**

🔍 **Look Back and Explain**

Name: _____ Date: _____

Reflection

1 Explain how you compare decimals.

_____

_____

_____

_____

2 How does understanding place value help when comparing decimals?

_____

_____

_____

_____