Reading and Comparing Thousandths

Teacher		**Class**	Grade 5
Subject	Math	**Topic**	Reading and comparing decimals
Date		**Room**	
Lesson length	60 minutes	**Country**	United States

Students learn to read, write and compare decimals to thousandths. They judge close race times and order them fastest to slowest.

Curriculum links

- integrating decimal fractions into the place value system [1]
- Compare and order up to four fractions or decimals from least to greatest or greatest to least and explain your reasoning [2]

Learning objectives

- Students will read and write decimals to thousandths in digits and words.
- Students will compare decimals to thousandths using place value and symbols.
- Students will order up to four decimals least to greatest and explain reasoning.

Success criteria

- I can read 3.472 correctly and write it in digits and words.
- I can compare two thousandths decimals using <, > or =.
- I can order four decimals least to greatest and explain why.

What students already know

Show 0.7 and 0.73. Ask: Which is larger? How do you say each one? Listen for tenths and hundredths language in 2 minutes.

Key words

thousandth	one tiny piece when a whole is cut into 1,000 even pieces [4]
decimal point	little dot that keeps whole numbers apart from parts less than one [4]
place value	how much a digit counts for because of where it sits [5]
compare	tell which amount is bigger, smaller, or if both match [3]

Materials

- printed race-time slips (12.346, 12.364, 12.336, 12.361 seconds)
- stopwatch for demo
- pencils
- projector with Slides 1-3, 5 and 7-11
- printed Worksheet Task C and Task E, one copy per student
- mini whiteboards, markers and erasers

Before the lesson

- Print class sets of Worksheet Task C and Task E and race-time slips cut into sets of four
- Test Video clip 6 (0:00-4:50) and Slides 1-3, 5 and 7-11 on projector
- Set desks in groups of four with whiteboards and place-value charts ready

- lined place-value charts with ones to thousandths

Lesson outline

0–5 min **Starter** 5 min · Whole class

Hook students with a close finish and surface ideas about 0.5 and 0.36.

YOU DO

1. Welcome class and show Slide 5 question: Which is larger: 0.5 or 0.36? How do you know?
2. Say the hook: Two runners finished 0.009 seconds apart. Who won, and how do you know?
3. Give 30 seconds think time, then 60 seconds pair talk.
4. Take two quick answers without fixing them and say we will prove it today.

STUDENTS DO

1. Think silently, then tell a partner which decimal is larger and why.
2. Listen to two shared ideas and keep the question in mind.

Say: Two runners finished 0.009 seconds apart. Who won, and how do you know? You will be the judges today. First, turn and talk with your partner. Which is larger: 0.5 or 0.36? How do you know?

Ask: Which is larger: 0.5 or 0.36? (0.5 is larger because 5 tenths beats 3 tenths.) · Why might someone think 0.36 is larger? (Because 36 looks bigger than 5 if you ignore place value.)

Check understanding: Hands up for 0.5 vs 0.36. If split, keep both ideas up; revisit after teaching the longer-is-larger mistake where students assume more digits means higher value [5].

Support: Let students point to tenths and hundredths on a shaded grid to see 0.5 covers more. **Stretch:** Ask: What would you add to 0.36 to beat 0.5? How much more?

Use: Slide 5

5–17 min **Teaching** 12 min · Whole class

Teach reading and writing decimals to thousandths with place value.

YOU DO

1. Show Slide 1 title and Slide 2 goals and point to success lines for reading 3.472.
2. Model 2.375 on a place-value chart, naming the decimal point that separates the whole numbers from the parts of a number [4].
3. Think aloud expanded form 2 + 0.3 + 0.07 + 0.005 and stress each place to the left is 10 times greater and each place to the right is 10 times smaller [4].
4. Have students build and write two numbers on Worksheet Task E on whiteboards.

STUDENTS DO

1. Repeat readings chorally and track digits on finger chart.
2. Complete Worksheet Task E: Write each digit in its correct place-value column for 1.246 and 3.472.

Say: Thousandths live in the third spot after the dot. We read 2.375 as two and three hundred seventy-five thousandths, using decimal notation to name decimals [5]. Line up the dot so every digit sits in its true home.

Worked example: Read and write 3.472. Step 1: Put 3 in ones, 4 in tenths, 7 in hundredths, 2 in thousandths. Step 2: Say whole part: three. Step 3: Say rest with place: four hundred seventy-two thousandths. So: three and four hundred seventy-two thousandths = 3.472.

Ask: What does the 5 mean in 1.245 seconds? (Five thousandths of a second, in the thousandths spot.) · Why do we say two and seventy-five hundredths for 2.75, not two point seven five? (Place words show value; point seven five can hide value and lead to confusion [5].) · How much bigger is tenths than hundredths than thousandths? (Each step left is 10 times greater, each step right is 10 times smaller [4].)

Check understanding: All show 1.246 in words on whiteboards. Scan for ones, tenths, hundredths, thousandths order; reteach with color-coded chart if mixed.

Support: Use a chart with ones and tenths prefilled so students only place hundredths and thousandths.
Stretch: Build largest and smallest thousandths numbers from digits 2, 4, 6, 1 and name the difference.

Use: Slides 1-2 and Worksheet Task E

17–30 min **We do** 13 min · Whole class

Model lining up points and comparing left to right to thousandths.

YOU DO

1. Show Slide 3 steps and play Video clip 6 (0:00-4:50) for lining up points and adding zeros.
2. Model 0.157 vs 0.146 by looking at the digit with the greatest value first, then moving right when digits match [3].
3. Model filling gaps with zero, so 0.5 becomes 0.500, then compare digits starting at the left with the greatest place value [4].
4. Show Slide 7 big idea: Longer is not larger — place value decides.

STUDENTS DO

1. Watch clip and chant steps with teacher.
2. On whiteboards, line up 0.157 vs 0.146 and 0.5 vs 0.36 and hold up < or >.

Say: To compare, line up the decimal points to get each digit in the correct column [4]. Fill empty spots with zeros [4]. Then check ones, then tenths, then hundredths, then thousandths until one digit wins.

Worked example: Compare 2.43 and 2.34. Step 1: Line up dots: 2.43 over 2.34. Step 2: Ones equal 2=2. Step 3: Tenths 4 vs 3, 4 wins, so stop; you do not need to keep going to hundredths [3]. Result: 2.43 > 2.34. Second check: 0.50 > 0.36 because 5 tenths beats 3 tenths.

Ask: Where do we start comparing and why? (At the left, greatest value first, then move right [3].) · Why write 0.5 as 0.50? (To fill the gap with zero so columns line up for a fair test [4].)

Check understanding: Whiteboard hinge: 1.3 vs 1.32 — who shows <? If many miss, remodel 1.30 vs 1.32 in hundredths column.

Support: Keep lined-up chart on desk and compare only tenths first, then hundredths, to find greatest digit [3].
Stretch: Prove 1.30 equals 1.3 two ways using zeros and place value.

Use: Video clip 6 (0:00-4:50) and Slides 3, 7-8

30–50 min **Main activity** 20 min · Groups

Compare and order four race times to thousandths to find fastest.

YOU DO

1. Hand out race-time slips and show Slide 9 task to line up points, compare, and order fastest to slowest.
2. Remind groups smallest time wins and to write numbers in a place-value table lining up decimal points [4].
3. Circulate, ask which column decided each match, and push for <, > sentences.
4. Stop at 15 minutes for two groups to read their order aloud least to greatest [2].

STUDENTS DO

1. In fours, sort slips, record lined-up work on Worksheet Task C, and write order with <.
2. Read order fastest to slowest and underline where numbers first differ.

Say: You are race judges. Line up points and add zeros. Compare tenths, then hundredths, then thousandths. Write them least to greatest. Smallest time is fastest. Prove every spot.

Worked example: Order 12.346, 12.364, 12.336, 12.361. Step 1: Line up dots, ones 12 same, tenths 3 same. Step 2: Hundredths: 3, 6, 3, 6 — so 12.3xx pair smaller than 12.36x pair. Step 3: For 12.346 vs 12.336, thousandths 6 vs 6? No, check hundredths 4 vs 3, so 12.336 < 12.346. Step 4: For 12.364 vs 12.361, thousandths 4 vs 1, so 12.361 < 12.364. Order: 12.336 < 12.346 < 12.361 < 12.364.

Ask: Which column decided 12.346 vs 12.364? (Hundredths, 4 vs 6, so 12.346 is less.) · Why is 11.50 the same speed as 11.5? (Zeros at the end add nothing to value.)

Check understanding: Collect order strips; check all have 12.336 first and 12.364 last. Pull small group to re-line chart if ones/tenths misaligned.

Support: Give times with same ones and tenths, like 11.451 and 11.475, so they only compare hundredths and thousandths in a lined-up chart [4]. **Stretch:** Add a fifth time that ties on thousandths and ask students to explain what tie means in thousandths.

Use: Slide 9 and Worksheet Task C

Created with LessonDino.com · AI lesson planner with checkable sources

50–60 min **Plenary** 10 min · Whole class

Check reading and comparing against goals and fix last errors.

YOU DO

1. Show Slide 10 key words and cold-call meanings without saying the word itself.
2. Show Slide 11 true or false and vote: 0.5 > 0.36, 1.3 = 1.30 = 1.300, reading of 2.345.
3. Model correct reading: 2.345 is two and three hundred forty-five thousandths, not two point three four five.
4. Give 3-question exit ticket on paper.

STUDENTS DO

1. Vote and defend true/false with tenths and zeros talk.
2. Complete exit ticket on their own and hand in.

Say: Let us prove we met our goals. Vote true or false and say why with place value. Then show me on your own with the exit ticket. Read carefully and line up every dot.

Ask: Is 1.3 = 1.30 = 1.300 true? (True, end zeros add no value.) · How do you read 4.218? (Four and two hundred eighteen thousandths.)

Check understanding: Exit tickets sorted into got it / line-up error / reading error for next-day reteach.

Support: Allow word bank with thousandths, tenths, hundredths and pre-lined dots for exit. **Stretch:** Invent a tricky pair like 1.2 and 1.187, order them and explain with place value.

Use: Slides 10-11

Common mistakes

Mistake	How to spot it	How to fix it
Longer is larger: thinking 0.36 > 0.5 because 36 > 5.	Student picks more digits as winner on whiteboards or bingo.	Line up as 0.50 vs 0.36 and model with tenth and hundredth grids to see sizes [5].
Reading as point digits, like two point three four five for 2.345.	Hear point talk or words missing thousandths.	Insist on place words: two and three hundred forty-five thousandths, since point talk leads to confusion about value [5].
Lining up left edge instead of decimal points, so 2.34 looks bigger than 2.43.	Digits stacked without dots aligned in Task C.	Rewrite in place-value table lining up decimal points and fill gaps with zero, then compare left to right [4].

Support

- Give times with same ones and tenths, like 11.451 and 11.475, so they only compare hundredths and thousandths in a lined-up chart [4]
- Use shaded tenth and hundredth grids to model and compare decimals and pre-lined place-value charts

Stretch

- Add a fifth time that ties on thousandths and ask students to explain what tie means in thousandths
- Invent tricky pairs like 1.2 and 1.187, order four at a time, and write the place-value proof

For the LSE or teaching assistant

Stay with target group during Main activity: help line up dots, prompt tenths first, read numbers aloud using thousandths words.

Created with LessonDino.com · AI lesson planner with checkable sources

Check for understanding

Question	Answer
Read 4.218 in words.	Four and two hundred eighteen thousandths.
Compare: 0.5 ___ 0.36 using <, > or =. Why?	0.5 > 0.36 because 5 tenths beats 3 tenths (0.50 > 0.36).
Order least to greatest: 2.365, 2.356, 2.563, 2.536.	2.356 < 2.365 < 2.536 < 2.563.

Homework

Write 2.047 in words, then order 2.047, 2.47 and 2.074 least to greatest.

Sources

1. Grade 5 » Introduction | Common Core State Standards Initiative · thecorestandards.org · https://www.thecorestandards.org/Math/Content/5/introduction/
2. Grade 5 Math Curriculum - Fairfax County Public Schools · fcps.edu · https://www.fcps.edu/academics/elementary/fifth-grade/year-at-a-glance/math
3. Comparing and ordering decimals – KS2 Maths - Year 5 - BBC · bbc.co.uk · https://www.bbc.co.uk/bitesize/articles/zgn7wnb
4. Place value and ordering decimals - BBC Bitesize · bbc.co.uk · https://www.bbc.co.uk/bitesize/articles/zcryvwx
5. Recognising and comparing decimal numbers - Mathematics Hub · mathematicshub.edu.au · https://www.mathematicshub.edu.au/plan-teach-and-assess/teaching/lesson-plans/recognising-and-comparing-decimal-numbers/