

Bank Vault Breakout

Decimal Place Value & Operations: Compare and order decimals to thousandths, explain place-value patterns when multiplying or dividing by powers of 10, and add, subtract, multiply, and divide decimals to hundredths to solve real-world problems, including money.

Learning target: I can compare and round decimals and add, subtract, multiply, and divide decimals using place value.

Success looks like: Students use the vocabulary correctly, complete the escape room, and score 80% or higher on the evidence-based exit ticket.

Materials: Student devices, the printed lesson worksheet (one per student), projector for the mini-lesson presenter.

LESSON AT A GLANCE

60 minutes

Time	Part	Teacher does	Students do
0:00-0:08	Warm-up	Project the warm-up. Circulate, then call on 2-3 students. Save question 3 for the debrief.	Answer Part 2 of the lesson worksheet; share with a partner.
0:08-0:20	Mini-lesson	Teach with the 4-step presenter. Run each quick check with the whole class.	Complete worksheet Parts 4-11 as each slide appears; answer checks with fingers.
0:20-0:48	Escape Room	Launch Bank Vault Breakout. Assign mission levels; circulate with the answer key.	Play solo or in pairs; record code pieces; complete any written evidence task.
0:48-0:52	Debrief	Ask 2 debrief questions and revisit warm-up question 3.	Finish worksheet Part 13 (prediction check + one thing learned).
0:52-1:00	Exit ticket	Hand out the exit ticket. Collect and sort with the mastery guide.	Answer with evidence independently.

Key vocabulary

Word	Student-friendly definition
Tenths / hundredths / thousandths	The first, second, and third places to the right of the decimal point.
Expanded form	A number written as a sum of each digit's value ($3.45 = 3 + 0.4 + 0.05$).
Round	Change a number to a nearby, simpler value.
Power of ten	10, 100, 1,000... Multiplying by 10 moves each digit one place left.

1. WARM-UP

0:00–0:08 · 8 min

Warm-up expectations (post these): Answer in Part 2 of the lesson worksheet (or on this sheet). Number each answer to match the question. Answer in complete sentences. For math, show your work. Work silently for 5 minutes, then share with a partner for 2 minutes. Be ready to share one answer with the class.

#	Question	Look for
1	Write 0.7 as a fraction and in words.	7/10, seven tenths.
2	Which is greater: 0.5 or 0.45? Explain.	0.5, because 0.50 has 50 hundredths and 0.45 has 45 hundredths.
3	You buy a snack for \$1.25 and pay with \$2.00. How much change?	\$0.75.

2. MINI-LESSON

0:08–0:20 · 12 min

Project the Lesson presenter from the room page. It runs the whole hour: target and agenda, warm-up with timer, hook vote, 4 teaching steps (key idea, interactive tool, turn and talk, check for understanding), I do / we do / you do, a work-time screen with a timer and expectations, debrief, and the exit ticket. Press N for teacher notes, T to pause the timer, and P to pick a student.

Hook (1 min): Which is bigger: 0.5 or 0.45? Class vote: 0.5 / 0.45 / They are equal

Step 1 (3 min): Place value

Teach	Each place is 10 times the place to its right. $0.4 = 4 \text{ tenths} = 40 \text{ hundredths}$.
Interactive tool	Visual: 1 flat = 1 whole, 1 rod = 1 tenth, 1 unit = 1 hundredth: 1.35
Students do	Write the value of each digit in 3.572.
Turn and talk	Why is 0.5 greater than 0.45 even though 45 is more than 5?
Worksheet Part 5A	Each place is 10 times the place to its right. $0.4 = 40 \text{ hundredths}$.
Check for understanding	In 4.382, what is the value of the 8? Answer: (D) 8 hundredths

Step 2 (3 min): Compare decimals

Teach	Line up the decimal points and compare place by place from the left. Adding zeros can help: 0.50 vs. 0.45.
Interactive tool	Visual: A number line from 0 to 1 in tenths
Students do	Order 0.6, 0.06, 0.66 from least to greatest.
Turn and talk	What does each zero in 0.050 tell you?

Worksheet Part 6A	To compare decimals, line up the DECIMAL POINTS and compare from the LEFT.
Check for understanding	Which is greatest? Answer: (C) 0.7

Step 3 (3 min): Round

Teach	Look at the digit to the right of the place you are rounding to. 5 or more rounds up; 4 or less stays.
Interactive tool	Board and notes
Students do	Round 3.46 to the nearest tenth.
Turn and talk	Why do we look only at one digit to decide how to round?
Worksheet Part 7A	To round, look at the digit to the RIGHT. 5 or more rounds up.
Check for understanding	Round 7.863 to the nearest tenth. Answer: 7.9

Step 4 (3 min): Operations

Teach	Add and subtract by lining up decimal points. Multiply as whole numbers, then count decimal places. Divide by a whole number: the decimal point goes straight up.
Interactive tool	Board and notes
Students do	Solve $4.5 + 2.37$ and 1.2×3 .
Turn and talk	Why must decimal points be lined up to add but not to multiply?
Worksheet Part 8A	When adding decimals, line up the DECIMAL POINTS.
Check for understanding	$4.5 + 2.37 = ?$ Answer: 6.87

I do: worked example (shown one step at a time)

1. Problem: 3.6×0.4 .
2. Step 1: Multiply as whole numbers: $36 \times 4 = 144$.
3. Step 2: Count decimal places: one in 3.6, one in 0.4 -> two in all.
4. Step 3: 1.44.
5. Check with an estimate: about $4 \times 0.4 = 1.6$. 1.44 is close, so it makes sense.

What to say on every slide is in the presenter script PDF.

We do: guided practice

Solve: 3.6×0.4 .

1. Multiply as whole numbers: $36 \times 4 = 144$.
2. Count decimal places: 3.6 has 1, 0.4 has 1, total 2.
3. Place the point 2 places from the right: 1.44.
4. Estimate: about $4 \times 0.4 = 1.6$, so 1.44 makes sense.

Answer: 1.44

You do: independent check (2 min)

Solve: $12.5 - 4.75$

Answer: 7.75. Students who miss it: 3-minute reteach at the teacher table, then start the room at the Explorer level.

Misconception: "Longer decimals are bigger." 0.45 is less than 0.5.

Misconception: "Line up the digits on the right when adding." Line up the decimal points.

Misconception: "Multiplying always gives a bigger answer." Multiplying by a decimal less than 1 gives a smaller answer.

3. ESCAPE ROOM: BANK VAULT BREAKOUT

0:20–0:48 · 28 min

Launch: project the start screen, read the story aloud, and assign mission levels (Explorer = extra support, Agent = on level, Legend = challenge). Students can open Supports any time for read-aloud, bigger text, a word bank, and a scratch pad.

- Locks open in order, so every student moves through the same sequence. Circulate and listen for which lock is causing a traffic jam.
- Pairs work well: one student reads the clue card aloud, the other controls the device. Switch roles at every lock.
- If a group is stuck for more than 3 minutes, ask "What does the clue card say about this?" before giving the hint.

Students turn in: the completion code plus their copied "turn in your work" block (Canvas Text Entry).

4. DEBRIEF

0:48–0:52 · 4 min

1. Why do we line up decimal points to add and subtract?
2. How can estimating help you place the decimal point?
3. Where do you see decimals outside of school?

Close the loop: return to warm-up question 3. Answer: \$0.75.

5. EXIT TICKET

0:52–1:00 · 8 min

Print the exit ticket PDF (page 2 is the key and mastery guide). Every item requires evidence: Part A asks students to justify each choice, Part B asks for an explanation, and Part C applies the standard to a new situation using Solve-Show-Explain. Sort results into Mastered, Approaching, and Beginning to plan tomorrow's groups.

LESSON RESOURCES

Resource	How it fits the lesson
Warm-up worksheet (PDF)	Optional standalone warm-up (also Part 2 of the lesson worksheet), with a key.

Resource	How it fits the lesson
Mini-lesson presenter	Projectable, step-by-step interactive lesson with tools and quick checks (room page).
Lesson worksheet (PDF + key)	One printable packet students complete during the whole lesson: short fill-ins and quick checks in 13 small parts that match the presenter slides.
Bank Vault Breakout (.html)	The escape room for Canvas, with differentiated levels, supports, and a turn-in.
Exit ticket (PDF + key)	Evidence-based check with a rubric and a mastery sorting guide.
Illustrative Mathematics (extra)	Free Grade 5 units on decimal place value and operations. https://im.kendallhunt.com/
Khan Academy: 5th Grade Math (extra)	Decimal practice with instant feedback. https://www.khanacademy.org/math/cc-fifth-grade-math
Math Learning Center: Number Pieces (extra)	Virtual base-ten pieces for decimal models. https://www.mathlearningcenter.org/apps
Estimation 180 (extra)	Daily estimation challenges that build number sense. https://estimation180.com/

ANSWER KEY: BANK VAULT BREAKOUT

Lock 1: Counting Coins (code piece: C)

1. Write 4 dimes and 3 pennies as a decimal of a dollar. -> 0.43
2. In \$6.58, what is the value of the 5? -> 5 tenths, or 50 cents
3. The first lock wants exactly \$2.96 in the tray, using dollars, dimes, and pennies. -> \$2.96
4. Bonus lock: make \$0.43 using the FEWEST coins possible. -> \$0.43

Lock 2: Deposits (code piece: E)

1. $\$125.50 + \$38.75 = \$$ ____ -> 164.25
2. $\$12.99 + \$4.05 + \$0.96 = \$$ ____ -> 18.00

Lock 3: Withdrawals (code piece: N)

1. $\$200.00 - \$57.38 = \$$ ____ -> 142.62
2. You pay for a \$3.45 snack with a \$10 bill. Count out the correct change in the tray. -> \$6.55
3. Estimate: $\$49.87 - \$19.95$ is about... -> \$30

Lock 4: The Gift Shop Receipt (code piece: T)

1. 3 notebooks cost \$1.25 each. What is the total? -> 3.75
2. A \$18.40 T-shirt is half price ($\times 0.5$). What is the sale price? -> 9.20
3. $4.2 \times 0.3 = ?$ -> 1.26

Lock 5: Split the Treasure (code piece: S)

1. \$45.60 is shared equally by 4 students. How much does each get? -> 11.40
2. \$7.20 buys pencils that cost \$0.90 each. How many pencils? ($7.2 \div 0.9$) -> 8
3. Round \$14.678 to the nearest cent (hundredth). -> 14.68

Final code: CENTS