

Ratios, Rates & Percents: teacher script

Use with the Lesson presenter (room page -> Lesson presenter). Slides show only student cues; this script has what to say. Students need the printed lesson worksheet and a pencil.

Presenter keys: Right/left arrows change slides. N shows short notes. T pauses the timer. P picks a student. F is fullscreen.

Response routine: Students write each answer on their worksheet, then show it with fingers (1 = A, 2 = B, 3 = C, 4 = D). Scan the room before revealing.

SLIDE 1: TODAY'S TARGET

1 min

Say	Today's learning target is: "I can use ratios, unit rates, and percents to solve real-world problems." Read it with me.
Say	Here is how you will know you have it: the success criteria. You will prove it on the exit ticket at the end of class.
Point to	The agenda and the key vocabulary. Tell students they need their notebook, guided notes page, and pencil.

SLIDE 2: WARM-UP

0:00–0:08

Say	Turn to Part 2 of your lesson worksheet. Answer the three questions in complete sentences. You have 5 minutes of silent work. Go.
Do	Start the 8:00 timer. Circulate. At 5 minutes say: "Turn to your partner and compare answers for 2 minutes."
Look for	1) 12:15, or 4:5. 2) 5 for \$2.00 (\$0.40 each vs. \$0.50 each). 3) 8.
Say	Call on 2-3 students for questions 1 and 2, then reveal. Say: "We will come back to question 3 at the end of class."

SLIDE 3: HOOK

1 min

Say	Read the question on the screen: "A 12-pack of juice costs \$6. A 20-pack costs \$9. Which is the better deal?" Circle your prediction in Part 3 of your worksheet and write why. Then vote.
Background	Ask: "A 12-pack of juice costs \$6. A 20-pack costs \$9. Which is the better deal?" Have students vote before any math.
Do	Tap +1 for each vote. Do not give the answer. Say: "By the end of the lesson, you will be able to check your prediction."

SLIDE 4: LEARN 1: RATIOS COMPARE**3 min**

Say	A ratio compares two quantities: 3 to 2, 3:2, or $\frac{3}{2}$. Order matters: dogs to cats is 3:2, cats to dogs is 2:3.
Worksheet	Say: "Part 5: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: A RATIO compares two quantities. ORDER matters. (tap "Show the missing words" after students try.)
Explore	Point to the model: 3 cups strawberries for every 2 cups yogurt. Ask: "What do you notice?" Students do: Write two ratios from the tape diagram (strawberries to yogurt, yogurt to strawberries).
Turn and talk	Say: "Why does 3:2 mean something different from 2:3?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (C) 2:3. Yogurt comes first: 2:3.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 5: LEARN 2: EQUIVALENT RATIOS**3 min**

Say	Multiply or divide both parts by the same number. Tables and double number lines help.
Worksheet	Say: "Part 6: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: To make an EQUIVALENT RATIO, multiply or divide BOTH parts by the same number. (tap "Show the missing words" after students try.)
Explore	Point to the model: A double number line. Ask: "What do you notice?" Students do: Finish the double number line: 12 strawberries -> ? yogurt.
Turn and talk	Say: "How can a double number line help you check a ratio?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: 8. $12 \div 3 = 4$ groups; $4 \times 2 = 8$.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 6: LEARN 3: UNIT RATES**3 min**

Say	A unit rate is the amount for 1. Divide: $\$6 \div 12 \text{ juices} = \$0.50 \text{ per juice}$.
Worksheet	Say: "Part 7: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: A UNIT RATE is the amount for ONE. To find it, divide. (tap "Show the missing words" after students try.)
Explore	Students do: Find the price per item: 3 pens for \$2.40 and 5 pens for \$3.50.

Turn and talk	Say: "Why is the unit rate the fairest way to compare two deals?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: 4.50. $\$18 \div 4 = \$4.50$.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 7: LEARN 4: PERCENTS

3 min

Say	Percent means per hundred. 20% of 60 = $20/100 \times 60 = 12$. Or 10% of 60 is 6, so 20% is 12.
Worksheet	Say: "Part 8: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: Percent means per HUNDRED. 10% of a number is that number divided by 10. (tap "Show the missing words" after students try.)
Explore	Point to the model: $35\% = 35$ out of 100. Ask: "What do you notice?" Students do: Find 35% of 200 using 10% first.
Turn and talk	Say: "How can knowing 10% help you find 15% or 35% in your head?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: 20. $1/4$ of 80 = 20.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 8: WORKED EXAMPLE (I DO)

2 min

Say	Watch how I solve this. Write the final answer in Part 9 of your worksheet.
Think aloud	Solve the juice problem aloud: "12-pack: $\$6 \div 12 = \$0.50$ each. 20-pack: $\$9 \div 20 = \$0.45$ each. The 20-pack is the better deal, by 5 cents a juice."
Reveal	Problem: 12 for \$6 or 20 for \$9? Step 1: Unit rate for the 12-pack: $\$6 \div 12 = \$0.50$ per juice. Step 2: Unit rate for the 20-pack: $\$9 \div 20 = \$0.45$ per juice. Step 3: Compare: $\$0.45 < \$0.50$. Answer: the 20-pack is the better deal, by 5 cents a juice.

SLIDE 9: WE DO

2 min

Say	Now we solve one together in Part 10. Read the problem with me.
Do	Before revealing each step, ask: "What should we do next?" Take one answer, then tap "Show next step."
Steps	Ratio: 2 cups : 5 people. 20 people is 4 times as many as 5. Multiply both parts by 4: 8 cups : 20 people. Check with a unit rate: $2 \div 5 = 0.4$ cup per person; $0.4 \times 20 = 8$.

Answer	8 cups
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SLIDE 10: YOU DO 2 min

Say	Now on your own: Part 11. Solve it with no talking. You have 2 minutes.
Answer	6. $10\% = \$4$, $5\% = \$2$, so $15\% = \$6$.
Then	Students who got it: launch the room. Students who missed it: 3-minute reteach at your table, then start the room at the Explorer level.

SLIDE 11: WORK TIME: THE SALE PRICE SCAM 0:20–0:48

Say	Open The Sale Price Scam on your device. Type your name, choose the level I assigned, and begin. Whisper voice with your partner only.
Do	Start the 28:00 timer and leave this slide up. Circulate with the answer key.
Checkpoints	At 10 minutes: stage 2 done. At 20 minutes: stage 4 done; give a 5-minute warning for the final lock and turn-in.
Turn-in	Students tap "Copy my work" and paste it into the Canvas assignment (Text Entry).

SLIDE 12: DEBRIEF 0:48–0:52

Ask	When is a unit rate more useful than a total price? What strategy did you use most for percents? Where do you see ratios in sports or cooking?
Say	Back to warm-up question 3 and our hook vote: were our predictions right? What evidence changed your mind?
Answer	8.

SLIDE 13: EXIT TICKET 0:52–1:00

Say	Clear your desk except a pencil. Work silently and on your own. For every answer, write "I know because..." and use evidence.
Do	Hand out the exit ticket. Start the 8:00 timer. Collect and sort with page 3 (Mastered / Approaching / Beginning).

MISCONCEPTIONS TO WATCH FOR

- "Ratio order doesn't matter." $3:2$ and $2:3$ are different comparisons.
- "Add the same number to both parts to make equivalent ratios." You must multiply or divide.

- "Percents can never be more than 100." 150% of something is more than the whole.