Lesson 3-2 · Session 1

Understanding Unit Rates

Name _____ Date _____ Period _____

Maryland Standard 6.AT.2 · Learning target — I can find a unit rate and use rate language such as “per hour” or “each.”
Show a model, calculation, or explanation. Answer every part and label units when needed.

Exercises 1–12 earn 1 point for a correct response and 1 for supporting work. Spiral Review and Test Practice earn 1 point each.

Learn from a model

REMEMBER

- A unit rate compares a quantity to ONE unit of another quantity (per 1).
- For an amount per 1 unit, divide that amount by the number of those units.
- Watch out — label the unit in your answer: “39 boxes per hour,” not just “39.”
- Check it — multiply the unit rate by the second amount; you should get the first amount back.

WORKED EXAMPLE

Finding a Unit Rate A reader finishes 96 pages in 3 hours at a steady speed. Find the pages per hour.

Step 1 Write the rate as a fraction. 96 pages / 3 hours
Step 2 Divide to make the bottom number 1. 96 ÷ 3 = 32
Step 3 Say it with the word PER. 32 pages per 1 hour
Step 4 Use it to predict. in 5 hours: 5 × 32 = 160 pages
Answer **The unit rate is 32 pages per hour.**

Practice

1. A car travels 150 miles in 3 hours. Find the unit rate (miles per hour). _____

Answer _____

SHOW YOUR THINKING

2. A recipe uses 6 eggs for 2 batches of pancakes. Find the unit rate (eggs per batch). _____

Answer _____

SHOW YOUR THINKING

3. Which is written as a unit rate: ‘60 miles per hour’ or ‘120 miles in 2 hours’? Explain.

Answer _____

EXPLAIN WITH MATHEMATICAL EVIDENCE

4. Divide to find each unit rate.

a. 84 words in 7 minutes _____ words per minute
b. $56 for 8 hours of work $_____ per hour
c. 108 miles on 4 gallons _____ miles per gallon
d. 132 steps in 12 seconds _____ steps per second
e. 96 beads on 6 bracelets _____ beads per bracelet

Answer _____

SHOW YOUR THINKING

5. Cafeteria Line. The cafeteria serves 145 lunches in 5 minutes at a steady pace. Find the number of lunches served per minute.

Answer _____

SHOW YOUR THINKING

6. Sprinkler. A sprinkler puts out 98 gallons of water in 7 minutes at a steady rate. Find the gallons per minute, then find how many gallons come out in 15 minutes.

Answer _____

SHOW YOUR THINKING

7. Paper Route. Jamila folds 156 newspapers in 12 minutes. At this rate, how long will it take her to fold 234 newspapers?

Answer _____

SHOW YOUR THINKING

8. Andre says that '210 miles in 3 hours' is already written as a unit rate. Explain why he is wrong, then write the correct unit rate.
Sentence Frame: "I know this because..."

Answer _____

EXPLAIN WITH MATHEMATICAL EVIDENCE

9. A runner covers 42 kilometres in 6 hours. Find the kilometres per hour.

Answer _____ km per hour

SHOW YOUR THINKING

10. A 12-pack of markers costs $9.00. Find the cost per marker.

Answer _____ dollars

SHOW YOUR THINKING

11. Two Steps. A machine fills 315 bottles in 7 minutes. Find the bottles per minute, then the bottles filled in 20 minutes.

Answer _____ rate, then total

SHOW YOUR THINKING

12. Find the Mistake. For 120 miles in 4 hours, Jordan wrote 120 × 4 = 480 mph. Explain the mistake and give the correct rate.

Answer _____ the mistake and the rate

EXPLAIN WITH MATHEMATICAL EVIDENCE

Spiral review

13. From Lesson 3-1 Session 2. Share 48 in the ratio 1 : 5. Find both shares.

Answer _____

SHOW YOUR THINKING

14. From Lesson 2-9 Session 1. Find the MAD of 10, 14, 18.

Answer _____

SHOW YOUR THINKING

15. From Lesson 2-5 Session 1. Q1 = 16 and Q3 = 34. Find the IQR.

Answer _____

SHOW YOUR THINKING

Test practice

16. 90 words in 3 minutes gives a unit rate of —

- □ A. 93 words per minute
- □ B. 270 words per minute
- □ C. 30 words per minute
- □ D. 3 words per minute

17. $16 for 4 pounds gives a unit price of —

- □ A. $0.25 per pound
- □ B. $64 per pound
- □ C. $20 per pound
- □ D. $4 per pound

18. “Per” in a rate means —

- □ A. for each one
- □ B. added to
- □ C. times
- □ D. minus

Check and revise

CHECK YOUR MATHEMATICS	HOW DID IT GO?
Write both units and compare the same kind of unit rate. Every part answered / Work shown / Units labeled when needed	I can do this: Independently / With a hint / With help Question to revisit: _____

One correction or question I want to discuss: _____

Check that corresponding quantities stay in order. Label units and explain what your answer means.