Lesson 3-3 · Session 1

Equivalent Ratios and Tables

Name _____ Date _____ Period _____

Maryland Standard 6.AT.3a · Learning target — I can build a ratio table by scaling both rows by the same factor.

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

- Equivalent ratios have the same value — multiply or divide both numbers by the same factor.
- A ratio table lists pairs of equivalent ratios.
- Watch out — adding the same number to both rows does not keep a ratio; only multiplying does.
- Check it — every column of a ratio table should simplify to the same ratio.

WORKED EXAMPLE

Filling in a Ratio Table A fruit bowl uses 5 apples for every 2 oranges. Fill the table for 15 apples.

Step 1 Write the base ratio. 5 apples : 2 oranges

Step 2 Find the factor. $5 \times ? = 15$, so the factor is 3

Step 3 Multiply both rows by the same factor. $5 \times 3 = 15$ $2 \times 3 = 6$

Step 4 Adding the same number to both terms does not generally preserve a ratio. Scale both terms.

Answer 15 apples go with 6 oranges.

Practice

1. Complete the ratio table for flour to sugar (ratio 3:2):

Flour	3	6	9	
Sugar	2	4		8

Answer _____

SHOW YOUR THINKING

2. Is 12:8 equivalent to 3:2? Show how you know.

Answer _____

SHOW YOUR THINKING

3. A ratio table for juice concentrate to water starts at 1:4. Extend the table for 2, 3, and 5 parts concentrate.

For Juice Concentrate				
Water				

Answer _____

SHOW YOUR THINKING

4. Fill in the missing number so the two ratios are equivalent.

a. 2 : 7 = 8 : _____
b. 3 : 5 = _____ : 30
c. 6 : 9 = 2 : _____
d. 4 : 3 = 16 : _____
e. 10 : 4 = 5 : _____

Answer _____

SHOW YOUR THINKING

5. Bead Bracelets. A bracelet uses 7 blue beads for every 4 white beads. Build a ratio table that shows the white beads that go with 14, 21, and 28 blue beads.

Answer _____

SHOW YOUR THINKING

6. Class Photos. A photographer prints 5 photos for every 2 students. How many photos will the photographer print for 18 students?

Answer _____

SHOW YOUR THINKING

7. Dog Walking. Ms. Okafor walks 3 dogs on every 2 trips. Build a ratio table out to 12 dogs, then tell how many trips that takes.

Answer _____

SHOW YOUR THINKING

8. Deshawn says 4 : 6 and 6 : 8 are equivalent because he added 2 to each number. Explain why he is wrong, then write a ratio that really is equivalent to 4 : 6. Sentence Frame: "I know this because..."

Answer _____

EXPLAIN WITH MATHEMATICAL EVIDENCE

9. Scale the ratio 5 : 8 by 3, 4, and 6.

Answer _____ three pairs

SHOW YOUR THINKING

10. A ratio table starts at 9 : 2. If the first row grows to 45, what is the second row?

Answer _____ second row

SHOW YOUR THINKING

11. Scale Down. A mix uses 36 grams of oats to 12 grams of seeds. Scale it so the seeds are 1 gram.

Answer _____ oats to seeds

SHOW YOUR THINKING

12. Find the Mistake. To scale 4 : 6 up, Malik wrote 8 : 6. Explain the mistake and give a correct scaling.

Answer _____ the mistake and a correct pair

EXPLAIN WITH MATHEMATICAL EVIDENCE

Spiral review

13. From Lesson 3-2 Session 1. A car travels 156 miles in 3 hours. Find the unit rate.

Answer _____

SHOW YOUR THINKING

14. From Lesson 3-1 Session 1. Write the ratio 20 : 30 in simplest form.

Answer _____

SHOW YOUR THINKING

15. From Lesson 2-7 Session 1. Find 43.2 ÷ 8.

Answer _____

SHOW YOUR THINKING

Test practice

16. Scaling 3 : 7 by 5 gives —

□ A. 15 : 7	□ B. 15 : 35
□ C. 3 : 35	□ D. 8 : 12

17. Which is equivalent to 12 : 18?

□ A. 6 : 12	□ B. 3 : 2
□ C. 2 : 3	□ D. 12 : 6

18. A ratio stays the same when both rows are —

- □ A. reversed
- □ B. increased by 2
- □ C. squared
- □ D. scaled by one factor

Check and revise

CHECK YOUR MATHEMATICS	HOW DID IT GO?
Check that every pair has the same ratio. 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.