Ratio Tables and Plots

Make equivalent ratio tables, plot ordered pairs, and compare rates

Name: _____ Date: _____

Part 1: Build equivalent ratio tables

Listen while your teacher reads the directions. The two plans below are fictional cafeteria planning models. In each plan, multiply both quantities by the same positive whole number.

1. Snack Plan A: 2 milk cartons are packed with 3 apples. Complete the table.

Scale factor	Milk cartons	Apples
1	2	3
2	4	
3		9
4	8	

2. Snack Plan B: 2 milk cartons are packed with 5 apples. Complete the table.

Scale factor	Milk cartons	Apples
1	2	5
2		10
3	6	
4		20

3. Describe one multiplication you used. Include the units.

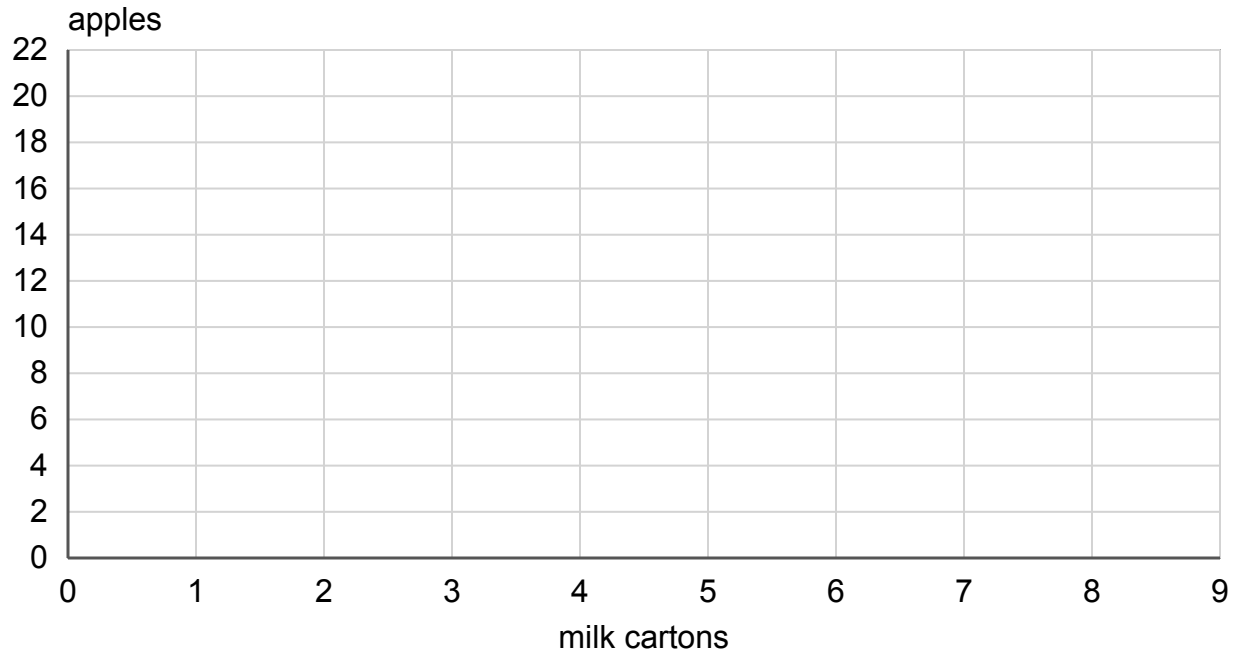
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Part 2: Plot and compare the plans

Plot every pair from both completed tables. Use the ordered-pair form **(milk cartons, apples)**. Draw an open circle for Plan A and a filled circle for Plan B. Write A or B next to each mark.



4. At 8 milk cartons, which plan has more apples? How many more? Which plan has the larger number of apples per milk carton? Explain using the table or graph.

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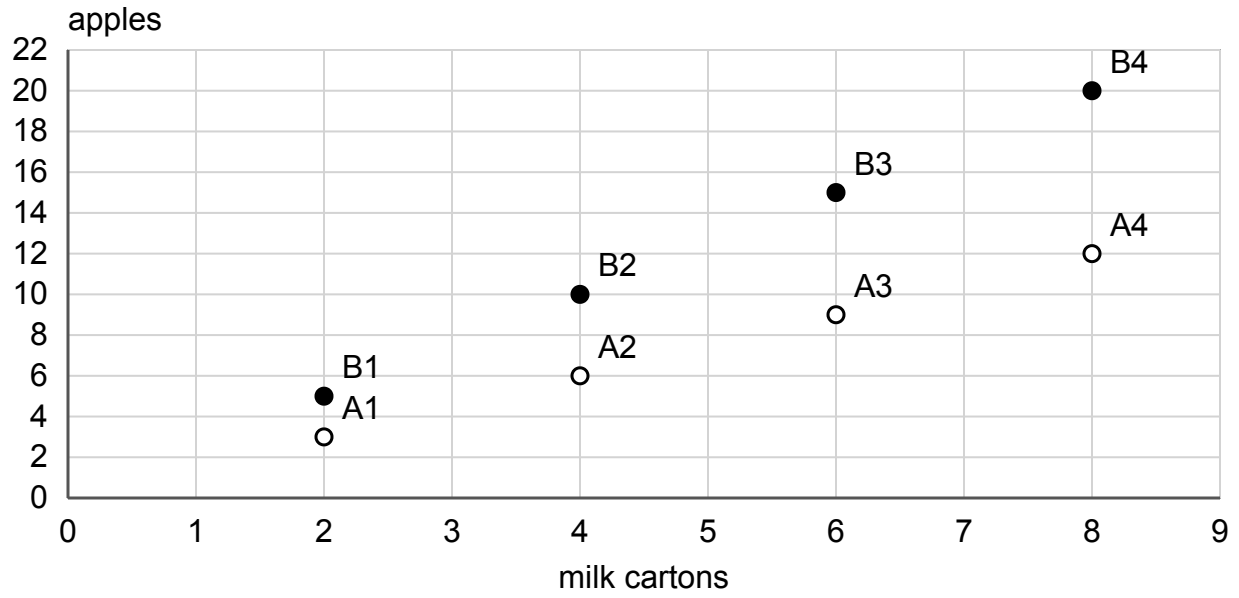
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Answer key: tables and graph

1. Plan A: The completed pairs are (2, 3), (4, 6), (6, 9), and (8, 12). Missing table values: 6 apples; 6 milk cartons; 12 apples.

2. Plan B: The completed pairs are (2, 5), (4, 10), (6, 15), and (8, 20). Missing table values: 4 milk cartons; 15 apples; 8 milk cartons.

3. Sample response: “For Plan A, I multiplied 2 milk cartons and 3 apples by 3. That gave 6 milk cartons and 9 apples.” Accept an equivalent correct multiplication with units.



4. Plan B has more apples at 8 cartons: 20 - 12 = 8 more apples. Plan B has the larger rate because it has 5/2 = 2.5 apples per carton, while Plan A has 3/2 = 1.5 apples per carton. Plan A points are open circles; Plan B points are filled circles.

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Teaching notes and observation guide

Materials: Print and supply all student pages, keeping teacher-key pages separate. Provide pencils, erasers, and rulers. The coordinate plane is supplied in Part 2; no separate graph paper is needed.

Exact setup: Seat students so they can see the teacher. Give each student the Part 1 and Part 2 student materials in order, face down. Keep this key out of student view. Ask students to turn over Part 1 only. After students finish the tables, direct them to turn to Part 2.

Teaching script: “Today you will make equal ratio groups. In a ratio table, multiply or divide both quantities by the same nonzero number. Here, use the positive whole-number scale factors shown. Then plot each pair with milk cartons first on the horizontal axis and apples second on the vertical axis. Use open circles for Plan A and filled circles for Plan B.”

Observation method: During Parts 1 and 2, use a roster and mark each student: T for using one common scale factor in both columns, P for plotting pairs as (cartons, apples), and C for comparing unit rates. Look for all eight plotted points and clear plan labels or symbols. Ask a student who reverses coordinates: “Which quantity belongs on the horizontal axis?”

Acceptance criteria: A proficient response has all six missing table values correct, plots the four pairs for each plan in the correct locations, and identifies Plan B with both required comparisons: 8 more apples at 8 cartons and 2.5 versus 1.5 apples per carton. A student who completes only one of the two comparisons shows partial understanding but has not fully answered Question 4. For support, have the student circle a scale factor and trace it across both columns before plotting one pair at a time.

Source credit: New York Next Generation Mathematics Standard NY-6.RP.3.a, https://lessonmakerpro.com/standards/ny-nextgen-math/ny-6-rp-3-a