

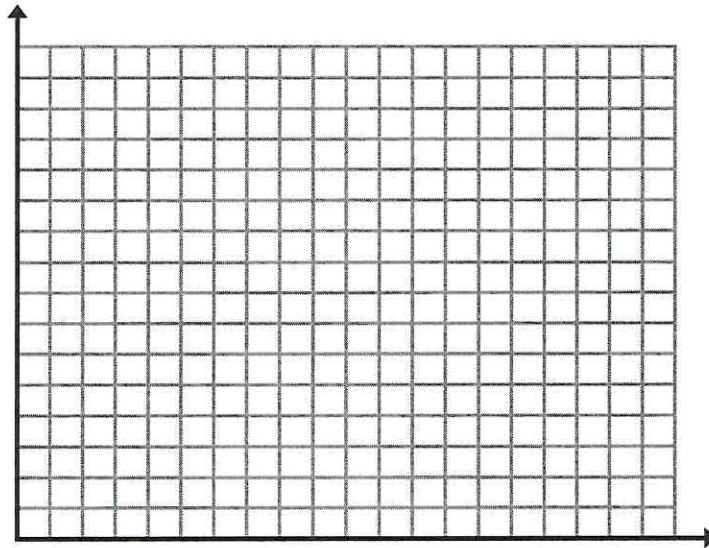
### 4.3c Classroom Activity: Convert Units—Proportion in Tables and Graphs

#### A. Quarts related to Gallons:

Fill in the missing amounts of quarts and gallons. Then find the ratio for the number of quarts ( $y$ ) to the number of gallons ( $x$ ).

Gal ( $x$ )	1	2	4	5	10		25	30		100	$x$
Quarts ( $y$ )		8				80			180		
Ratio $\frac{y}{x}$											

1. What does the  $\frac{y}{x}$  ratio tell us?
2. Write an equation to show how to find the number of quarts in any number of gallons.
3. Make a graph of the relationship between quarts and gallons (put gallons on the horizontal axis).



4. What does the graph tell us about the relationship of quarts to gallons?
5. On the graph, find the following coordinate points. What is the missing  $y$  value?  
Point A (0, )      Point B (1, )      Point C (3, )      Point D (4, )
6. Draw the points and label them A, B, C, and D on the graph.
7. Describe how you “move” on the grid from one point to the next (you must stay on the grid lines to move from A to B, B to C, C to D). Use words like up, down, right, left, vertical, horizontal.
8. How does this “moving” relate to rate?
9. Would the ordered pair (6, 26) lie on the graph? Why or Why not?

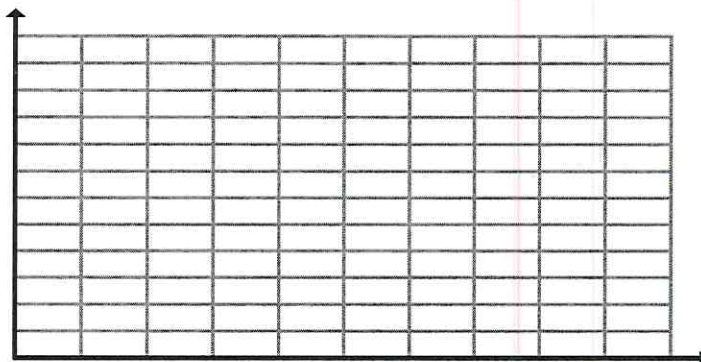
**B. Feet related to yards:**

Fill in the missing data.

Yards ( $x$ )	1	2	4	5	10		25	30		100	$x$
Feet ( $y$ )						48			144		
Ratio $\frac{y}{x}$											

- What is the unit rate? How do you know?
- What did you do to find the number of feet in a given number of yards?.
- Write an equation to find the number of feet in a given number of yards.
- Predict the movement between points on a graph. Explain--use words like up, down, right, left, vertical, horizontal.

- Sketch the graph, including labeling the axes.



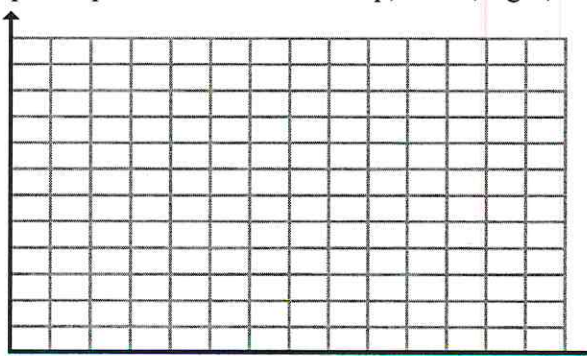
**C. Centimeters related to inches:**

Fill in the missing data.

Inches ( $x$ )	1	2	4	5	10		25	30		100	$x$
Centimeters ( $y$ )			10.16			38.1			127		
Ratio $\frac{y}{x}$											

- What is the unit rate? How did you find it?
- What did you do to find the number of centimeters in a given number of inches?  
Write an equation to find the number of centimeters in a given number of inches.
- Predict the movement between points on a graph. Explain--use words like up, down, right, left, vertical, horizontal.

- Sketch the graph, including labels for the axes.



**Label the ratio in each problem as part-to-part (pp) or part-to-whole (pw). Draw models if desired. Write proportion equations to solve. (Be careful—to answer the question, you might have to do two steps.)**

10. The ratio of girls to boys at the track meet was 4:1. Eric counted 9 boys. How many children were at the track meet altogether?
11. One out of every 4 children attending the soccer game is a girl. There are 27 boys. What is the total number of children at the soccer game?
12. Clarence the Clown has 36 pink and white balloons to give out to children at the circus. 1 out of 4 balloons is white. How many more balloons are pink?
13. The ratio of the length of Jake's wire to the length of Maddie's wire is 1:4. Maddie's wire measures 28 inches. How long is Jake's wire?
14. For every 7 sit-ups Naomi can do, Morgan can do 6. If Naomi did 49 sit-ups, how many more sit-ups did Naomi do than Morgan?
15. On Wednesday morning, Smith's had 99 boxes of Sweet Smacks on the shelf. 4 out of every 11 boxes contained a prize. How many boxes did not contain a prize?
16. Kyle and Megan participated in a team bike-athon. Kyle rode 5 out of every 8 miles in the course. Megan covered the rest of the mileage. If Kyle rode 45 miles, how many fewer miles did Megan ride than Kyle?
17. For every 3 books that Corey sells, Lexi sells one. Corey sold 21 books last week. How many fewer books did Lexi sell than Corey?
18. Will and Abby shared some marshmallows in the ratio 7:3. Abby had 27 marshmallows. How many fewer marshmallows did Abby have than Will?