



In these activities you will work together to identify patterns in the graphs of the points associated with a ratio and use them to solve problems. After completing each activity, discuss and/or present your findings to the rest of the class.



Activity 1 [Page 1.3]

1. 2 pounds of fruit cost \$5. Reset the ratio to 2:5 and draw the line on the graph.
 - a. Find a point on the line and explain what it means in terms of the amount of fruit.

 - b. Enter one of the coordinates of your point from part a in the table, and then select . How do the values in the table associated with the point relate to the other values in the table?

 - c. Sammy argued that 6 pounds of fruit should cost \$9 because 4 more pounds of fruit should cost \$4 more. Do you agree or disagree with Sammy? Find at least two different ways to explain your thinking.

 - d. Find at least three equivalent ratios such that at least one of the values in each of them is not a whole number. Explain how you found your answers and describe what each means in terms of the context.



Activity 2 [Page 2.2]

1. Reset. Move the point to $(2, 1)$. Generate four more points on the graph. Explain the correspondence between the table and the graph.

2. Move the point to $(4, 3)$.
 - a. If you select the right arrow once and the up arrow once, what will the next point on the line be? Check your answer using the TNS lesson.

 - b. Identify two points you think will be on the line that you cannot generate using the horizontal and vertical arrows. Explain why you think those points will be on the line.

3. Identify at least three points on each using the following instructions. Assume for each that you begin at $(0, 0)$. The TNS lesson might help with thinking about the problem or checking your work.
 - a. moving over 2 units and up 1 unit.

 - b. moving over 2 units and up 4 units.

 - c. moving over 1 unit and up 5 units.



Activity 3 [Page 3.2]

1. Set up the TNS page for the following ratio: 2 centimeters on a blueprint represent 7 meters.
 - a. Create a table that would help the blueprint maker convert at least six dimensions from the blueprint into meters. Explain how you created your table.

centimeters	meters

- b. A room is 35 meters wide. How long would it be on the blueprint?
 - c. Geoff claims that every centimeter on the blueprint represents $3\frac{1}{2}$ meters. Do you agree? Why or why not?



2. Use the TNS lesson to help answer the following questions. Sari wants to make salad dressing using a recipe that calls for 2 tablespoons of vinegar and 5 tablespoons of oil.
- Suppose she wants to keep the same ratio of vinegar to oil. How much oil should she use for 1 tablespoon of vinegar?
 - Sari claimed that for 15 tablespoons of oil, she needed 9 tablespoons of vinegar. How can you use the graph to decide whether she was right or not?
 - If Sari added 2 more tablespoons of vinegar, how much more oil should she add to keep the same ratio?
 - If Sari accidentally used 7 tablespoons of oil, how much vinegar should she use to keep the same ratio?