

In this activity you will practice how to use **strip diagrams** to solve Ratios and Proportions problems. This strategy provides a thoughtful approach to problem solving, that does not rely on plucking numbers from word problems and blindly applying rules and operations.

Work on a separate piece of paper.

1. Suppose a certain shade of green paint is made by mixing blue paint and yellow paint in a ratio of 2 to 3. Below is a *strip diagram* that represents this situation.



- For each problem below, use the same shade of green paint as above and solve the problem using the strip diagrams. It is recommended that you re-draw the diagram for each case.
- a. If you use 40 pails of blue paint, how many pails of yellow paint will you need?
  - b. If you will use 48 pails of yellow paint, how many pails of blue paint will you need?
  - c. If you want to make 100 pails of green paint, how many pails of blue paint and how many pails of yellow paint will you need?
2. At lunch there was a choice of pizza or a hot dog. Three times as many students chose pizza as chose hot dogs. All together, 160 students got lunch. How many students got pizza and how many students got a hot dog? Draw a strip diagram to help you explain your reasoning.
  3. The ratio of boys to girls in a classroom was 9:8. Half of the girls left the classroom, and then there were 15 more boys than girls.
    - a. How many children were in the classroom in the beginning?
    - b. How many girls left the classroom?
  4. David spent  $\frac{2}{5}$  of his money on a storybook. The storybook cost \$20. How much money did he have at first?
  5. The difference between 2 numbers is 2184. If the bigger number is 3 times the smaller number, find the sum of the two numbers.
  6. The ratio of Mary's cards to Jessica's cards is 5 to 3. After Mary gives Jessica 15 cards, both girls have the same number of cards. How many cards does each one of them have now? Draw a strip diagram to help you solve this problem. Explain your reasoning.

