SAMPLE PROBLEMS

1. **Write the __numeral__ and the __name of the number__ that matches each of these pictures:**

100 rubber bands		
100 rubber bands		
100 rubber bands		

Piles of __ten__ rubber bands each   Extra rubber bands

Bags of __100__ pennies each   Stacks of __ten__ pennies each   Extra pennies

100 pound weight   10 lb.
100 pound weight   10 lb.
10 lb.
10 lb.
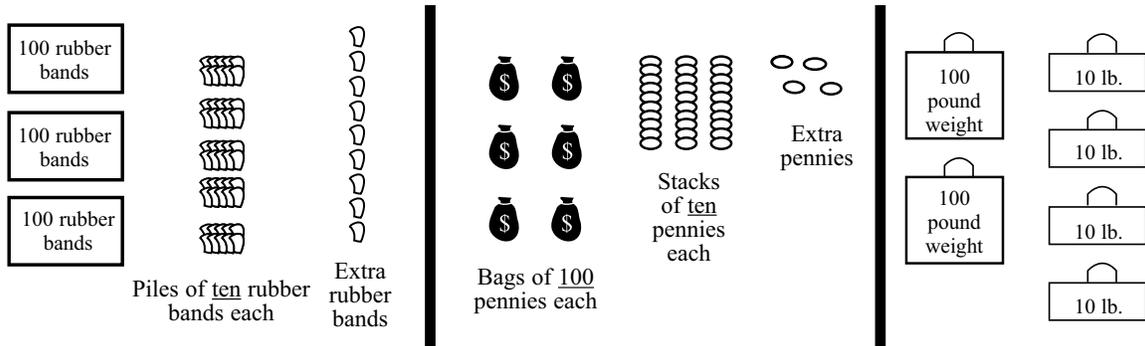
2. **What fraction of these figures are triangles?**

3. **John has 35¢. He needs 80¢ to buy a bag of cookies.**

a. How much more money does John need to buy the cookies? _____

b. Fill-in the correct number in each sentence:

$$35¢ \; + \; \underline{\hspace{2cm}} ¢ \; = \; 80¢$$
(Money John has) (extra money he needs to buy the cookies) (cost of cookies)

$$80¢ \; - \; 35¢ \; = \; \underline{\hspace{2cm}} ¢$$
(cost of cookies) (amount John has now) (how much more he needs to buy cookies)

c. Which sentence describes what you did to find the answer to part a.?

#3b. At this grade level, equations should have labels and written explanations to describe what each number represents. Students find the answer to part a. by subtraction (described in the second equation), but the first equation is also a reasonable way to represent the situation. Writing and talking about both equations helps students understand the inverse relationship of addition and subtraction.

5. **Continue this pattern for two more sets of stars:**

★★★★★   ★★★★★   ★★★★★   ★★★★★
★★★★★   ★★★★★   ★★★★★   ★★★★★
★★★★★   ★★★★★   ★★★★★   ★★★★★
★★★★★   ★★★★★   ★★★★★   ★★★
★★★★★   ★★★★★   ★★
★★★★★   ★

4. **In a survey of 20 students, 5 students say they prefer hamburgers to hot dogs. Based on this survey, how many students out of 100 would you expect to prefer hamburgers?**

This is a <u>very significant</u> question; it is the first step in the gradual development (over several years) of the <u>concept</u> of percent. At this grade level it should be solved with a <u>model</u> – a picture or chart.

Prefer Burgers

20 Students   20 Students   20 Students   20 Students   20 Students
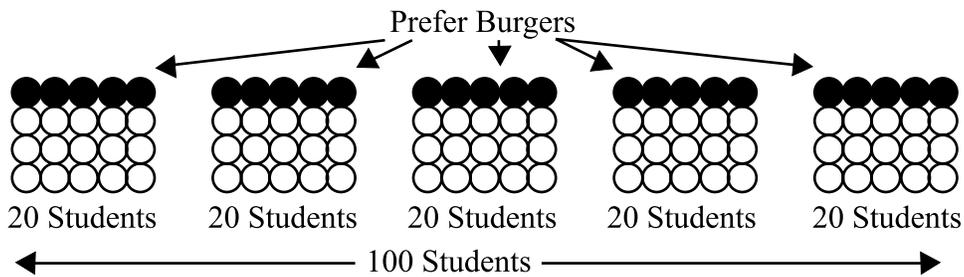
← 100 Students →

<u>Or</u>

Total students	Prefer Hamburgers
20	5
40	10
60	15
80	20
100	25

<u>Note</u>: Charts are more efficient, but pictures are the basis for <u>students' mental images</u> – which are crucial for making <u>connections</u> and <u>applying</u> knowledge in new situations. We should always provide <u>both</u> models.

1. a. Movie tickets cost $3 each. How much will 7 tickets cost? _____

b. Write an <u>addition</u> sentence to describe this situation.

c. Write a <u>multiplication</u> sentence to describe the situation.

9. a. Judy orders Fried Chicken and Pecan Pie. The tax on her order is 87¢. She gives the cashier a $10 bill and a $5 bill. How much money should she receive in change?

b. Ed will choose one item from the first three listed, and one item from the last two listed. How many different choices does he have?

Menu	
Fried Chicken	$8.75
Pizza	$13.95
Hamburger	$5.50
Chocolate Cake	$2.75
Pecan Pie	$2.75

c. Mr. Steen orders two take-out pizzas. The tax is $1.48. Is $30 enough to pay for his order?

3. a. How many more inches of rain fell in February than in November?

b. If the total rainfall had been "spread out evenly" over the five months, how many inches would have fallen each month?

Rainfall in Lafayette