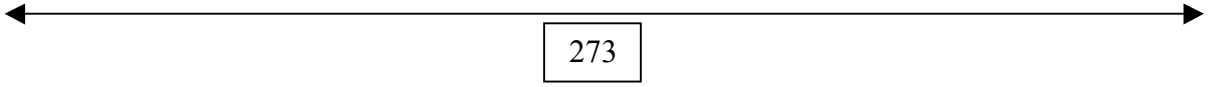
Multiple Step Word Problems and Bar Models, Grades 4-6

Introduction: Sometimes, you will encounter word problems that require multiple steps to solve. A bar model can be used as a visual representation of the problem. Bar models allow students to break the problem into simpler parts. They can also create opportunities for fewer steps. The following lesson is designed for use with grades 4-6. **(*Note: Bar Models may vary.)**

Example# 1: James, Sarah, and Danielle are all planting in a community garden. If each of their plots holds 7 rows and 13 columns, how many plants will they be able to grow all together?

Bar Model

James	Sarah	Danielle
$7(13)$	$7(13)$	$7(13)$
91	91	91

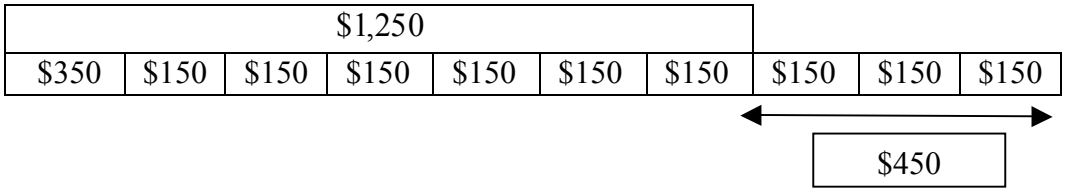


273

∴ James, Sarah and Danielle will grow 273 plants all together.

Example# 2: Mr. Williams paid $1,250 in cash for a new cable t.v. If he had bought it using the store's payment plan, he would have had to pay a deposit of $350 and 9 monthly installments of $150. How much money did he save by paying in cash?

Bar Model



∴ Mr. Williams saved $450 by paying in cash.

You Try # 1: There are 12 tables in the cafeteria. Each table can sit 8 students. There are 4 lunch periods each day. How many students can the cafeteria serve each day?

Bar Model

First	8	8	8	8	8	8	8	8	8	8	8	8	T=96	384
Second	8	8	8	8	8	8	8	8	8	8	8	8	T=96	
Third	8	8	8	8	8	8	8	8	8	8	8	8	T=96	
Fourth	8	8	8	8	8	8	8	8	8	8	8	8	T=96	

∴ The cafeteria can serve 384 students each day.

You Try # 2: The student council sold raffle tickets at the Spring dance. Each raffle ticket cost $2.00. Admission to the dance was $5.00. Sophia spent a total of $27.00 at the dance. How many raffle tickets did she buy?

Bar Model

$27.00	
$5.00	r

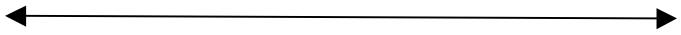
$r = \$22.00$										
$2	$2	$2	$2	$2	$2	$2	$2	$2	$2	$2

∴ Sophia bought 11 raffle tickets.

Example # 3: Kathy and Joshua are running for class president. Joshua received 45% of the votes. If all 120 fifth grade students voted, how many votes did Kathy receive?

Bar Model

120										
Joshua = 45%					Kathy = 55%					
12	12	12	12	6	6	12	12	12	12	12

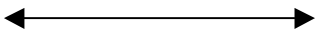


66

∴ Kathy received 66 votes.

<u>You Try # 3:</u> A sweater is on sale at the mall for 75% off the original price of $38.00. What is the new price of the sweater?

$38.00			
$9.50	$9.50	$9.50	$9.50



25% of $38

∴ The new price of the sweater is $9.50.

<u>Example # 4:</u> Given the following bar, create a word problem that could be used. **(Word problems will vary)**

x		
y	5	11

Sample Word Problem: Laura was assigned math problems for homework (x). She completed half the problems in class (y). In the car, she completed 5 more problems. She still had 11 problems to complete. How many math problems did Laura have for homework?

<u>You Try # 4:</u> Given the following bar, create a word problem that could be used. **(Word problems will vary**)

$12.70							
$2.20	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50

Sample Word Problem: Tom takes a taxi to work. There is a flat rate of $2.20. Each mile is calculated at $1.50. If Tom's final cost for the taxi is $12.70, how many miles did Tom travel?

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Independent Practice Problems

Directions: Use a bar model to solve the following problems. **(*Note: Bar Models may vary.)**

1. The school library has 286 books. If the school librarian buys 12 books each month for five months, how many books will the library have in all?

2. David spent 10 days at summer camp. Each day he spent 4 hours at Arts and Crafts. Each hour at Arts and Crafts he made 3 drawings. How many drawings did he make while at summer camp?

3. Ms. Jones teaches 6 classes a day. Each class has 30 students. After school she coaches the softball team. There are 10 students on the softball team that do not have a class with Ms. Jones. How many different students does Ms. Jones work with each day?

4. So far you have completed 80% of the problems for your math exam. Your exam has 45 problems. How many problems do you have left to complete?

5. A pair of shoes cost $50. You have a coupon for 20% off. What is the total cost of the shoes after 5% sales tax is included?