

9.3 Two-Way Tables

Learning Targets

- Reading a Two-Way Table
- Finding Marginal Frequencies
- Making a Two-Way Table
- Find a Relationship in a Two-Way Table

		Grade		
		6	7	8
The student	Eats breakfast at home	70%	50%	30%
	Eats breakfast at school	30%	50%	70%

Important Vocabulary

Two-Way Table: Displays two categories of data collected from the same source.

Joint Frequency: Each entry in the table.

Marginal Frequencies: The sums of the rows and the columns in a two way table. **Totals**

Reading a Two-Way Table

		Student	
		Studied	Did Not Study
Grade	Passed	21	2
	Failed	1	6

How many students in the survey studied for the test and passed?

21

Joint Frequency

How many students did not study and failed?

6

Finding Marginal Frequencies (totals)

Find and interpret the marginal frequencies for the survey above.

		Student		Total
		Studied	Did Not Study	
Grade	Passed	21	2	23
	Failed	1	6	7
Total		22	8	30

22 students studied.

8 students did not study.

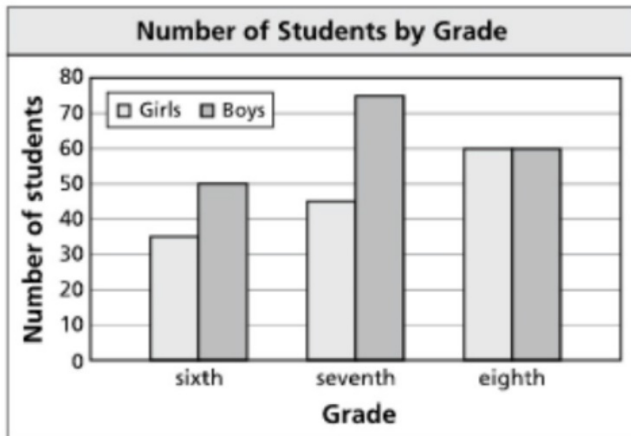
23 students passed.

7 students failed.

30 students were surveyed.

Making a Two-Way Table

Use the double bar graph to complete the table.



	Boys	Girls	Total
6th grade	50	35	85
7th grade	75	45	120
8th grade	60	60	120
Total	185	140	325

Making a Two-Way Table

Rides Bus	
Age	Tally
12-13	
14-15	
16-17	

You randomly survey students between the ages of 12 and 17 about whether they ride the bus to school. The results are shown in the tally sheets. Make a two-way table that includes the marginal frequencies.

Does Not Ride Bus	
Age	Tally
12-13	
14-15	
16-17	

- Find the two categories:
Age, Riding or Not Riding the Bus
- Calculate the Joint Frequencies:
Count the tallies
- Create the Table
- Find the Marginal Frequencies:
Add Rows and Columns

		Age			Total
		12-13	14-15	16-17	
Student	Rides Bus	24	12	14	50
	Does Not Ride Bus	16	13	21	50
	Total	40	25	35	100

Finding a Relationship in a Two-Way Table

What % of 14-15 year-olds Ride the Bus?

		Age			Total
		12-13	14-15	16-17	
Student	Rides Bus	24	12	14	50
	Does Not Ride Bus	16	13	21	50
Total		40	25	35	100

$$\frac{12}{25} = 48\%$$

What % of students are 16-17 yrs old?

$$\frac{35}{100}$$

For each age group, find the percent of students that ride or don't the bus. Explain what each percent means.

		Age		
		12-13	14-15	16-17
Student	Rides Bus	60%	48%	40%
	Does Not Ride Bus	40%	52%	60%

$$\frac{14}{35} = 0.4$$

So, 40% of the 16- and 17-year-old students in the survey ride the bus to school.



Homework: You will need to copy each table to show the marginal frequencies and interpret the data! (That's 6 Two-Way Tables - you can handle it!)

pg 390 # 3-10