Name _____ Period_____ Date_____

Constructing Two-Way Tables (page 1)

A **two-way table** organizes categorical data from one sample group as it relates to two different categories.

Example: A survey is taken of 500 students. They were asked whether or not they were on the honor roll and whether or not they played a sport. 115 students responded "on the honor roll only"; 55 students said they played a sport only; 250 students played a sport and are on the honor roll.

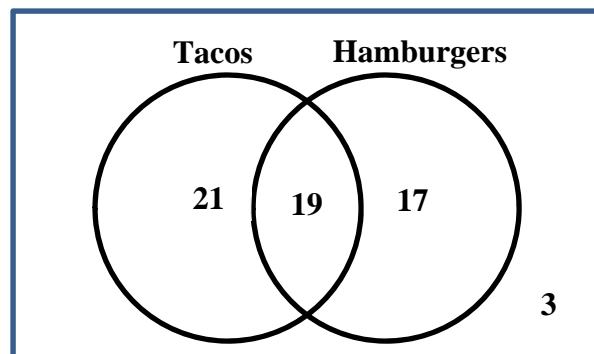**Step 1** This information can be organized into a table:

	Play a Sport	Do Not Play a Sport
On the Honor Roll	250	115
Not on the Honor Roll	55	

Step 2 We can add columns for total and fill in the missing information:

	Play a Sport	Do Not Play a Sport	Total
On the Honor Roll	250	115	365
Not on the Honor Roll	55	80	135
Total	305	195	500

Example: The 8th grade was surveyed to find which lunch they preferred. The results are shown in the Venn diagram. Construct a two-way table for the information.

	Tacos	No Tacos	Total
Hamburgers	19	17	36
No hamburgers	21	3	24
Total	40	20	60

Example: Two hundred students were surveyed and 55% of them were female. Fifteen percent of the students surveyed rode a bike and 21 of these were male. Three-fifths of the surveyed students ride the bus and of those 45% were males. 9% of the students surveyed walk to school and 10 of them were female. Construct a two-way table for the information.

	Male	Female	Total
Walk	8	10	18
Car	7	25	32
Bus	54	66	120
Bike	21	9	30
Total	90	110	200

$200(.55) = 110$ (female total)

$200(.15) = 30$ (bike riders)

$\frac{3}{5}(200) = 120$ (ride the bus)

$(.45)(120) = 54$ (male bus riders)

$(.09)(200) = 18$ (walk to school)
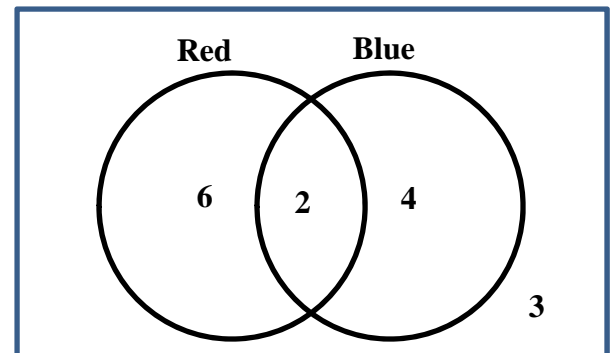
1. Data from 100 flights were collected. The flights were categorized as domestic or international and late or not late. Of the domestic flights, 20 were late, and 60 were not late. Five of the international flights were late. Construct a two-way table for the information.

2. 150 people who attended a UNLV basketball game were surveyed. 20 people surveyed ate hot dogs. Of those, 10% were adults. Forty percent of all surveyed ate pizza. Of those who ate pizza, 25% were children. Thirty adults said they ate hamburgers. Construct a two-way table for the information.

3. A survey was conducted with a volleyball team to determine the color of their uniforms. The results are shown in the Venn diagram. Construct a two-way table for the information.

			Total

Red   Blue

6   2   4

3

4. 200 Spanish students each visited one foreign country last week. Fifteen percent of the students visited Italy. Half of these students were female. Complete the two-way table including this information.

	France	Germany	Italy	Total
Female				95
Male	90			
Total		50		200