

Name: _____ Date: _____

Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples																
Two-Way Table	<i>a table that displays 2 or more categories of data collected from the same source</i>																
Example	<p>1. The table below shows the results from a survey where students were asked if they play an instrument and if they play a sport. Find the sum of each row and column, then answer the questions that follow.</p> <table border="1"> <thead> <tr> <th></th> <th>Plays a Sport</th> <th>Does Not Play a Sport</th> <th>Total</th> </tr> </thead> <tbody> <tr> <th>Plays an Instrument</th> <td>9</td> <td>14</td> <td>23 $9+14$</td> </tr> <tr> <th>Does Not Play an Instrument</th> <td>33</td> <td>19</td> <td>52 $33+19$</td> </tr> <tr> <th>Total</th> <td>42 $33+9$</td> <td>33 $14+19$</td> <td>75 $23+52$</td> </tr> </tbody> </table> <p>a) How many students play an instrument? <u>23</u></p> <p>b) How many students play an instrument and play a sport? <u>9</u></p> <p>c) How many students do not play a sport? <u>33</u></p> <p>d) How many students play a sport but do not play an instrument? <u>33</u></p> <p>e) How many total students were surveyed? <u>75</u></p>		Plays a Sport	Does Not Play a Sport	Total	Plays an Instrument	9	14	23 $9+14$	Does Not Play an Instrument	33	19	52 $33+19$	Total	42 $33+9$	33 $14+19$	75 $23+52$
	Plays a Sport	Does Not Play a Sport	Total														
Plays an Instrument	9	14	23 $9+14$														
Does Not Play an Instrument	33	19	52 $33+19$														
Total	42 $33+9$	33 $14+19$	75 $23+52$														

Constructing Two-Way Tables	<p>Use the information to construct the two-way table, then answer the questions that follow.</p> <p>2. Sydney randomly surveyed students at her school and found that 72 students ride the school bus and 37 of those students buy lunch from the cafeteria. There are 19 students that do not ride the bus, but buy lunch from the cafeteria. Nine students do not ride the bus or buy lunch from the cafeteria.</p> <table border="1"> <thead> <tr> <th></th> <th>Rides the Bus</th> <th>Does Not Ride the Bus</th> <th>Total</th> </tr> </thead> <tbody> <tr> <th>Buys Lunch from the Cafeteria</th> <td>37</td> <td>19</td> <td>56 $37+19$</td> </tr> <tr> <th>Does Not Buy Lunch from the Cafeteria</th> <td>35 $44-9$</td> <td>9</td> <td>44 $100-56$</td> </tr> <tr> <th>Total</th> <td>72</td> <td>28 $19+9$</td> <td>100 $72+28$</td> </tr> </tbody> </table> <p>a) How many students buy their lunch? <u>56</u></p> <p>b) How many students ride the bus but do not buy their lunch? <u>35</u></p> <p>c) How many students do not ride the bus? <u>28</u></p> <p>d) How many students do not buy their lunch? <u>44</u></p> <p>e) How many total students were surveyed? <u>100</u></p>		Rides the Bus	Does Not Ride the Bus	Total	Buys Lunch from the Cafeteria	37	19	56 $37+19$	Does Not Buy Lunch from the Cafeteria	35 $44-9$	9	44 $100-56$	Total	72	28 $19+9$	100 $72+28$
	Rides the Bus	Does Not Ride the Bus	Total														
Buys Lunch from the Cafeteria	37	19	56 $37+19$														
Does Not Buy Lunch from the Cafeteria	35 $44-9$	9	44 $100-56$														
Total	72	28 $19+9$	100 $72+28$														

3. Adam surveyed 120 random students in his middle school and asked them if they plan to attend the school musical. Of the 80 students who responded that they are attending the musical, 15 are seventh graders. Of the 40 sixth grade students surveyed, 13 said they do not plan on going. Only 10 eighth graders surveyed do not plan on attending the musical.

	Going to the Musical	Not going to the Musical	Total
6 th Grade	$40 - 13 = 27$	13	40
7 th Grade	15	$40 - 15 = 25$	32 ¹⁵⁺¹⁷
8 th Grade	$48 - 10 = 38$	10	48 ^{120 - 40 = 32}
Total	80	40	120

- a) How many 8th graders plan to attend the musical? 38
 b) How many 7th graders were surveyed? 32
 c) How many 6th graders plan to attend the musical? 27

Relative Frequency

values in each category \div by the total
 # of values

Examples

4. Find the relative frequencies using the data in question #3. Round to the nearest hundredth if necessary.

	Going to the Musical	Not going to the Musical	Total
6 th Grade	$\frac{27}{120} = 0.23$	$\frac{13}{120} = .11$	0.34
7 th Grade	$\frac{15}{120} = .13$	$\frac{17}{120} = .14$	0.27
8 th Grade	$\frac{38}{120} = .32$	$\frac{10}{120} = .08$	0.40
Total	0.68	0.33	1

- a) What percent of the students surveyed were 8th graders? 40%
 b) What percent of the 6th graders plan to attend the musical? 33.33%
 c) What percent of the 7th graders do not plan to attend the musical? 14.16%

5. The data below shows the results of a survey in which a group of high school seniors were asked if they have a part time job and if they have their driver's license. Complete the second table by finding the relative frequencies. Round to the nearest hundredth if necessary.

	Part-Time Job	No Part-Time Job	Total
Driver's License	25	17	42
No Driver's License	8	10	18
Total	33	27	60

	Part-Time Job	No Part-Time Job	Total
Driver's License			
No Driver's License			
Total			

- a) What percent do not have a part-time job? 45%
 b) What percent have a part-time job but do not have their license? 8/60 = 13.33%
 c) If there are 400 seniors total, how many would you expect to have their license and a part-time job? 166 seniors

$\frac{x}{100} = \frac{27}{120}$
 $120x = 2700$
 $\frac{120x}{120} = \frac{2700}{120}$
 $x = 22.5\%$

This set up is using chart in #3 chart in #4

$\frac{25}{60} = \frac{x}{100}$
 $\frac{60x}{60} = \frac{2500}{60}$
 $x = 41.7\%$ of 400 = 166.8