

Complete the table and answer the following questions.

Grade	Preferred Subject			Total
	History	English	Science	
9 th		35	20	
10 th	41	32		
Total	81		37	

- Which subject is the least popular among the students? Explain how you know.
- Which subject is the most popular among 9th graders? Which subject is most popular among 10th graders? Explain how you know.
- Twice as many ninth graders like art as the number that like science. The same number of 10th grade students likes art as like English. Add a column to this table for art, and find the frequencies of each.

Grade	Preferred Subject				Total
	History	English	Science	Art	
9 th		35	20		
10 th	41	32			
Total	81		37		

Create a relative frequency using the ORIGINAL table (no art column) above.

- Express each relative frequency as a fraction and a decimal rounded to the nearest thousandth.

Favorite Subject	History	English	Science	Total
Relative Frequency				

- How do you know that that all of your data is accounted for on your relative frequency table?
- What fraction of students prefers English?

Two-way frequency tables and Interpreting Frequencies

7. Teresa surveyed 100 students about whether they like pop music or country music. Out of the 100 students surveyed, 42 like only pop, 34 only like country, 15 like both pop and country, and 9 do not like either pop or country. Complete the two-way frequency table using this information.

	Like Pop		
Like Country	Yes	No	Total
Yes			
No			
Total			

8. Charles surveyed 100 boys about their favorite color. Of the 100 boys surveyed, 44 preferred blue, 25 preferred green, and 31 preferred red.
 a. Explain why it is not possible to make a two-way frequency table from the given data.

45 students were asked about what foreign language they are studying, and these are the results.

	Language			Total
Gender	Chinese	French	Spanish	Total
Girl	2	8	15	25
Boy	4	4	12	20
Total	6	12	27	45

9. Find the relative frequencies (joint relative frequencies and marginal relative frequencies) using fractions and decimals, rounding to three places.

	Language			Total
Gender	Chinese	French	Spanish	Total
Girl				
Boy				
Total				

10. Find the conditional relative frequencies using the two-way table (table before the one above).
- Given the student is a girl, find the proportion who take Spanish.
 - Given the student is a boy, find the proportion who take Spanish.
 - Based on our data, is it more likely for a boy or a girl to take Spanish? Explain.
 - Given the student takes French, find the proportion who are girls.
 - Given the student takes French, find the proportion who are boys.
 - Based on our data, is it more likely for a randomly selected French student is a girl or boy? Explain.