STEM Literacy through Infographics

Pie Graph Help!

Part of a Series of Avoiding Graph Pitfalls

Last updated: January 17, 2019

These materials are based upon work supported by the National Science Foundation under Grant Nos. IIS-1441561, IIS-1441471, & IIS-1441481. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the NSF.

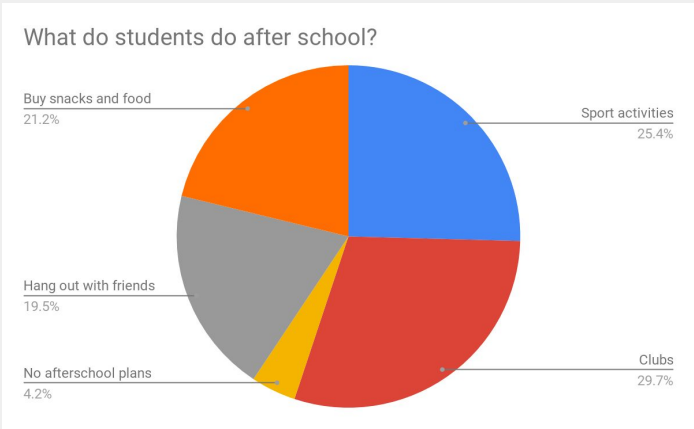
Pie Graph Help!

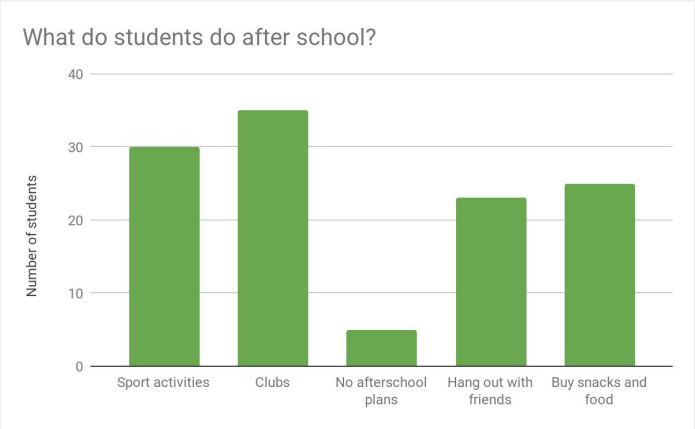
By Ada Ren & Andee Rubin

If you're reading this, it's probably because you have a pie graph that is statistically incorrect or visually misleading. Try to figure out which issue your graph has and consider the suggestions here for improving it.

Problem: Unique data points should not be counted in multiple slices

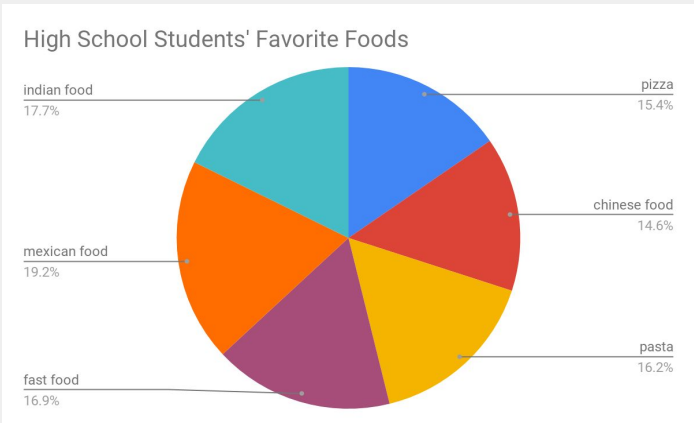
Problem	Solution
Students can participate in more than one post-school activity, so the categories are not mutually exclusive.	Use a bar graph instead, as unique data points can be in more than one bar.

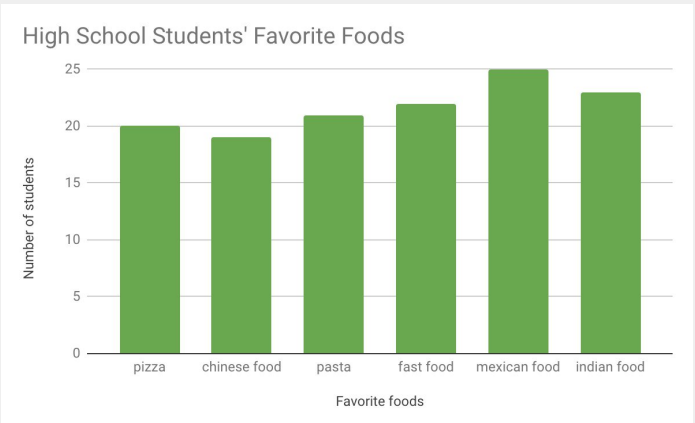




Problem: Pie slices are about the same size, so differences between them are harder to judge

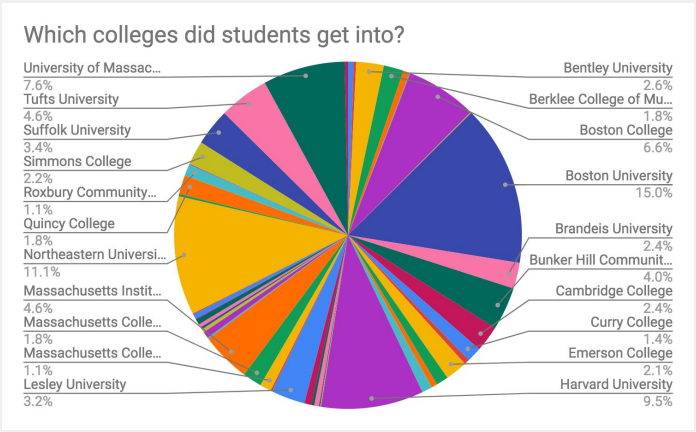
Problem	Solution
If all slices of a pie chart are about the same, it's hard to see the difference and communicates the message that there are no differences.	If you are trying to point out that some categories are larger than others, try a bar graph instead.

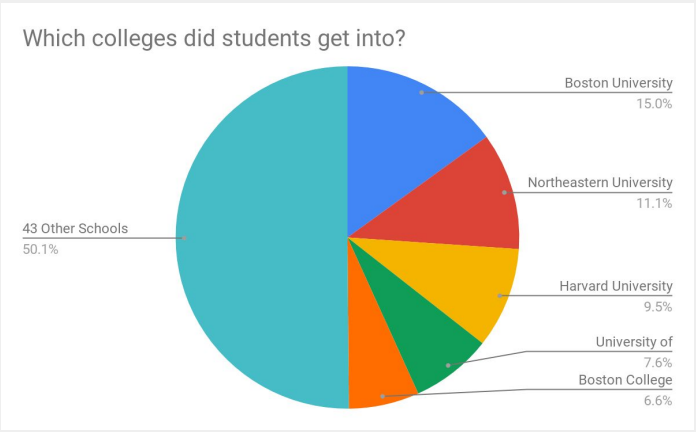




Problem: Too many pie slices

Problem	Solution
When there are too many pie slices, it becomes unclear what you are comparing. The message gets diluted.	Try to keep it to 5 to 8 categories maximum. If the numbers do not add up to a whole, use a bar graph instead. You can also add up the ones you don't want to focus on as one big slice and name it "other"





Problem: Categories represent less than the whole

Problem	Solution
A pie chart implies that the categories cover all possibilities, so if you only have data for some categories, a pie chart isn't appropriate.	If you do not have numbers for all the categories in a whole , use a bar graph instead.