

DATA MANAGEMENT

Survey Assignment
Suraj Rampure, 6C #24
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Data Management Survey Assignment

By Suraj Rampure, 6C #24

Due on: 2010 - 02 - 12

Office Suite	No. of People
Mac:	8
MS Office for Mac	2
iWork	5
Other (Don't Know)	1
PC:	17
MS Office for Windows	15
OpenOffice	2
Other (Don't Know)	0

Prediction of Results

Note: These predictions were performed before the actual survey was performed (mentally).

My prediction of the outcomes of the survey is that Microsoft Windows PC will hold the most votes, because the Microsoft computer is a more popular and well know computer in today's market. I also think this because some people think that Windows PCs are less expensive then Macs, therefore I think there will be more PCs among the crowd of the 25 grade 6 students that I will survey than Macs. In the Windows PC category, I predict that Microsoft Office for Windows PCs will be the office suite with the highest number of usage votes. I say this because MS Office is the most advertised office suite in the market, and it comes bundles with many of Microsoft's Windows PCs (like I predicted before, is the best selling computer on the market), therefore, many people would have it on their computers, therefore making it the most popular office suite that I think will be selected as 25 grade 6's

Question: What computer do you use the most at home, a Macintosh (Mac) or a PC (Windows)? On this computer, what office suite do you use?

People Surveyed

This data was collected through a survey, in which 25 grade 6 students in Talbot Trail class 6C, who were aged between 11 and 12 years old, were asked to vote on their primary computer used at home, and the office suite that they use on that computer.

Purpose (Why I Chose This Question)

I chose this question as my question to survey 25 grade 6 students because I am a person who favours the company Apple greatly (the maker and creator of the Mac), and I wanted to see how many other grade 6 students primarily use the Mac more than its rival, the PC, along with me. I chose to see which office suite that the 6th graders use on this computer the most, because an office suite is something that most people have and use on a daily basis (school work, etc.), and I wanted to see how many people use (and don't use; compare and contrast) the same operating system for each of the 2 different operating

Options

The options that the 25 grade 6 students that were surveyed were given was:

- to choose a computer type (operating system), out of a Mac and Windows PC
- if they voted Mac, they must choose out of three office suites:
 - Microsoft Office for Mac
 - iWork
 - Other (OpenOffice, etc.)
- if they voted Windows PC as the primary computer that they used at home, then they had to choose out of the following three office suites:
 - Microsoft Office for Windows PC
 - OpenOffice

There were so few options for the different office suites because these are the only main office suites for both of the main computer operating systems that today's market use, therefore these are going to be the most voted office suites. (To prove my point, only one person voted other). For the Mac, iWork (Apple's office suite) is the main office suite installed on Macs of most Mac users (source: friends, personal use), and Microsoft Office for Mac is the second most installed on most Macs. These are the only office suites for the Mac that you have to pay for, and they both are exceptionally well in functionality, and since neither of them are very expensive, I realized that these 2 suites would be the most popular office suites in the Mac category. There are no other good suites for the Mac, so I realized that adding other freeware (free) office suites wouldn't really help the participants of the survey, since there are so many free suites (why I made the "other" column). Basically, the same thing can be said for the PC, but the only main office suite for the PC is MS Office. I added OpenOffice to the list due to its low cost (free) and functionality compared to MS Office. I thought that many people would use OpenOffice due to this.

Averages

(For the mean, I rounded to the nearest whole number because you cannot have "half a vote" or "one tenth of a vote," because you cannot vote a fractional/decimal number, therefore, the average must be a whole number.)

e = repeated decimal

Mac

Mean

$8/3 = 2.66666667$ (2.6e7), or about 3

About 3 people voted in each category for the Mac computer.

Median

1, 2, 5

The middle number is 2, therefore the median for the number of people who said they primarily use one of the Mac's office suites is 2.

Mode

1, 2, 5

There is no number that appears more than once, therefore there is no mode in the amounts of people who voted on the different Macintosh office suites that they use primarily.

Range

5 (greatest) - 1 (least) = 4

The range for the amount of people who voted on one of the Mac's office suites was 4.

Windows PC

Mean

$17/3 = 5.66666667$ (5.6e7), or about 6

About 6 people voted in each category for the Windows PC computer.

Median

0, 2, 15

The middle number is 2, therefore the median for the number of people who said they primarily use one of the Mac's office suites is 2.

Mode

0, 2, 15

There is no number that appears more than once, therefore there is no mode in the amounts of people who voted on the different Windows PC office suites that they use primarily.

Range

Overall

Mean

$25/6 = 4.16\overline{6}$ (4.166666667) or about 4

About 4 people voted for each different office suite for both computer types.

Median

0, 1, 2, 2, 5, 15

$2+2=4$, $4/2 = 2$

The mean of the two middle numbers is 2, therefore the median for the number of people who voted in each category in this survey is 2.

Mode

0, 1, 2, 2, 5, 15

The number 2 occurred twice, therefore the mode of the number of people who voted in each category of this survey is 2.

Range

15 (greatest) - 0 (least) = 15

The range of the amount of people who voted in each category of this survey is 15.

Which average best represents the data? Justify your reasoning.

I think, for all of the 3 categories I found the mean, median and mode (Mac, PC and overall results), that the mean best represents the data. I think this because in each set of data, the numbers are very spread out (5 and 1, 15 and 0), and since the mean is in the exact middle of these numbers, it represents all of the numbers in the set evenly. The median really doesn't mean much in this case, because, for example, the middle number in the (PC) set of data is 2, and the other two numbers are 0 and 15. 2 is nowhere near the average of 0 and 15 ($15/2 = 7.5$), therefore it really doesn't evenly represent the data evenly at all. The mode doesn't really represent the data at all. In $\frac{2}{3}$ (2 out of the 3) of the sets of data that I collected (Mac and PC), there is no number that occurs more than once anyway, therefore there is no mode, meaning the mode can't represent anything important, since many sets of data don't even have a mode. Due to this, the mode doesn't represent the numbers in the data set at all, since nothing can't represent anything. Even in the set of data (the overall data set), the mode is equal to 2 (it appears twice), but it really doesn't mean much, since there are numbers that are about 8 times greater than it in the set (15). Due to the fact that there isn't a number 8 times smaller than 2 (which would put the mode at almost the middle of the set of data, representing all of the numbers in the data set evenly. Anyway, the number that occurs the most in a set of data only shows that the number appears more than once, that only proves consistency in that amount (along with the range), not the middle number in the set of data. This is why I think that the mean best represents all three of my sets of data.

What does the range tell you about the consistency of the results?

$\frac{2}{3}$ (2 out of 3) of the ranges of the 3 sets of data that I collected (Windows PC and overall) had very large ranges (15), which tells me that the number of people who voted for each of the different office suites (PC, and overall) was very spread out, or non-consistent. That means that there was an uneven number of people who voted in each category (office suite) for overall and PC specifically, therefore, there was a big liking in one office suite (mainly PC) than the other. This main office suite causing the main unbalance in the consistency was MS Office for Windows PC, with 15 votes. However, this was completely different for the Mac, since the range in this case, was very minor (the range was equal to 4). This tells me that the number if people who voted in each of the Mac's office suites (Office, iWork, Other) wasn't very spread out, or was very consistent. This tells me that there wasn't a huge preference (liking) in the 25 6th grade students that I surveyed, for the 3 different optional Macintosh office suites. The amounts of people who voted on the different office suites for the Mac all voted for the different office

Reflection on Results (Prediction)

After I performed my survey and looked at the results, I looked back at my initial prediction of the survey’s outcome. I saw that my prediction was correct. When I predicted that Microsoft Windows PCs were going to be the most used home computers amongst the 25 grade 6 students that I surveyed, I was correct. Also, when I predicted that Microsoft Office for Windows PC was going to be the most used home office suite amongst the 25 grade 6 students that I surveyed, I was also correct, due to my reasoning at the beginning. Therefore, all of my predictions about the survey were correct.

Inferences from the Tally Chart

(more on last page of assignment)

1) The number of people who primarily use a paid home office suite is nearly avg. 12 times more than the number of people who primarily use a free home office suite.

Paid office suites = 23

iWork - 5

MS Office for Mac - 2

Other - 1

MS Office for Windows PC - 15

5+2+1+15 = 23

Free office suites = 2

OpenOffice = 2

23/2 = 11.5, 11.5 rounds up to 12 (find the mean of both)

Therefore, the average number of people who own a paid office suite is 12 times more than those who own a free office suite.

2) The number of people who use a PC primarily is over double than those who use Macs primarily, in the 25 grade 6 students that I surveyed.

Mac = 8 (in total for Macs)

PC = 17 (in total for PCs)

17/8 = 2.125. 2.125 rounds down to 2 (mean)

Therefore, the number of people who use a PC is over double the amount of people who use a Mac.

3) The number of people who own an office suite made by the same software company as their computer is about (avg.) 6 times more than those who don’t.

Mac

For the Mac, the only office suite made by Apple is iWork.

iWork = 5

MS Office for Mac (Microsoft) = 2 votes

(Let’s not put the other category into the averaging, because the person doesn’t know which office suite they use, so it would be unfair to add that vote into one suite than the other. The average will still be about the same, if we put it in the averaging, or if we don’t. One number of little value doesn’t change the value of an average by that much.)

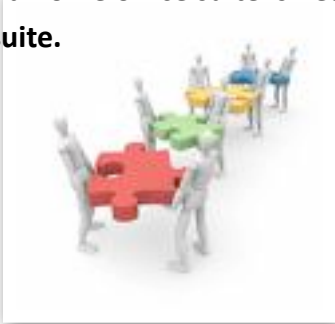
5(iW)/2(MS) = 2.5 (iW - iWork, MS - MS Office for Mac)

2.5 rounds up to 3, therefore, the number of people who primarily use an office suite made by Apple on their Mac is about 3 times more than those who don’t (not including the “other/don’t know” category).

Windows PC

For the PC, the only office suite made by Microsoft is MS Office for Windows PC.

MS Office for Windows PC (Microsoft) = 15 votes



$15(\text{MS})/2(\text{OO}) = 7.5$ (MS = MS Office for Windows PC)

7.5 rounds up to 8, therefore, the number of people who primarily use an office suite made by Microsoft on their Windows PC is about 8 times more than those who don't.

About 3 (Mac), about 8 (Windows PC)

$(3+8)/2 = 11/2 = 5.5$

5.5 rounds up to 6, therefore, the average number of people who primarily use an office suite made by the maker of their computer is averagely 6 times greater than those who don't.

Graphs

Graph 1: Pie Graph
(Circle Graph)

Legend



Pie Graph Percentages

Mac - 32% in total

iWork = 4 votes \times 5 = 20%

MS Office for Mac = 2 votes \times 4 = 8%

Don't Know/Other = 1 vote \times 4 = 4%

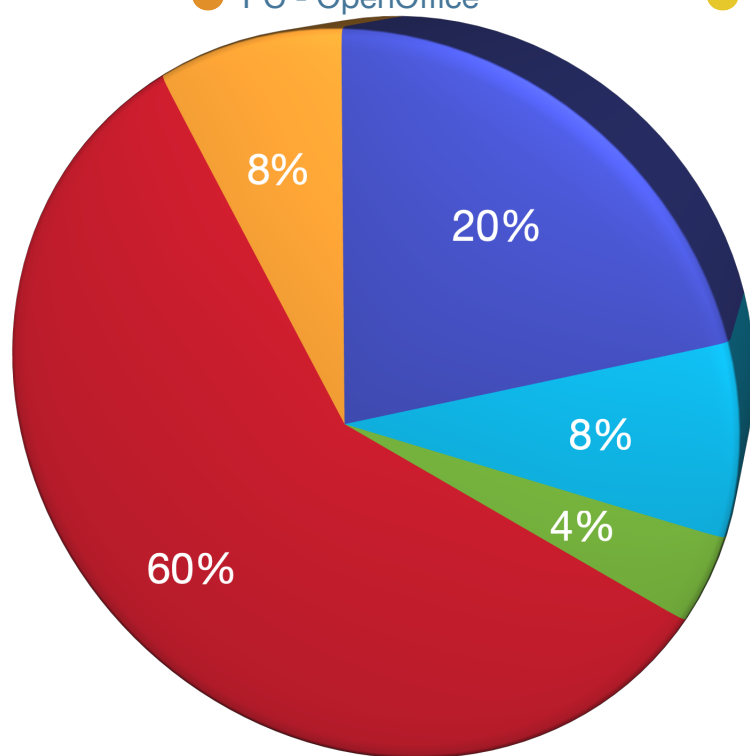
Windows PC - 68 in total

MS Office for Windows PC = 15 votes \times 4 = 60%

OpenOffice = 2 votes \times 4 = 8%

Other/Don't Know = 0 votes \times 4 = 0%

I multiplied each number of votes that I got for each different office suite by 4 to get it's percentage out of 25 peoples' votes since 25 is a whole factor of 100, and $100/4 = 25$. From this, I knew that if I wanted to find one of the votes in a percentage out of 25 people, I would have to multiply the number of votes by 4.



Warm colours (red, orange) = PC votes

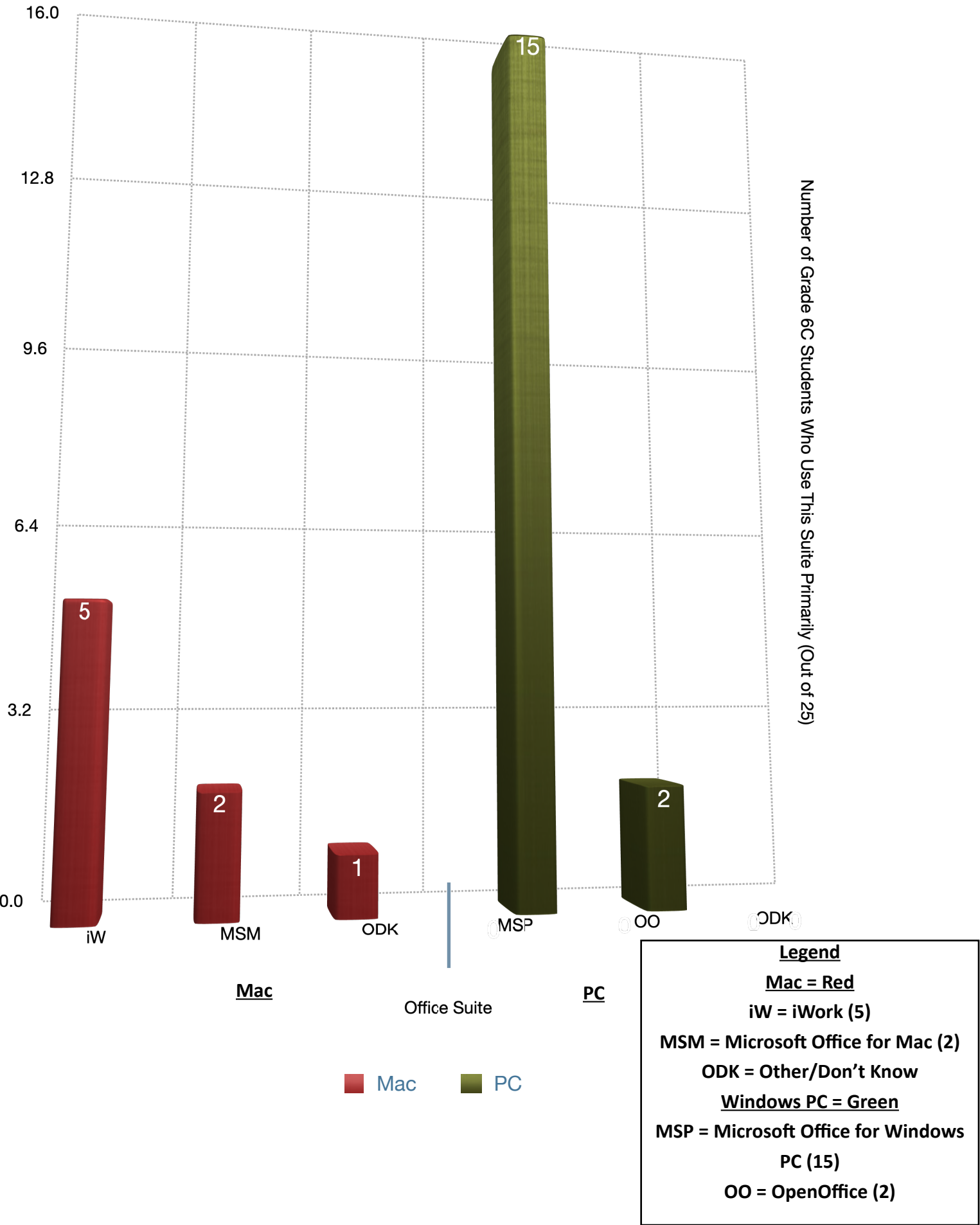
Cool colours (light blue, dark blue, green) = Mac votes

Why I Chose A Pie Graph

I chose a pie graph as my first graph to represent the data that I collected from my survey. This was because I was comparing parts (the various office suites in the different computers, Mac and PC) to it's whole (all of the votes in total), which is what a pie graph is meant for. In my case, the parts were each of the different office suites of both the computer options (the Mac or the PC). The whole was all 25 votes from the 25 grade 6C students that I surveyed. A pie graph made it visually easy to see which office suite (and which type of computer) had the most use amongst the 25 grade 6C students that I surveyed. This was because the larger (or smaller) each office suite's portion was, the more (or less) votes (of usage) they got, respectively (the larger the portion is on the pie graph, the more votes it had). In other words, the pie graph was a very easy way to make inferences with the data that I received (easier to see which suite had the most usage amongst the 25 6C student that I surveyed). Making inferences with the pie graph is easily done visually, because no mental calculation is required (I can infer by just looking at it). This is why I chose a pie graph for my first

Graph 2: Bar Graph

The Types of Computers that 25 Grade 6C Students Use Primarily
and the Office Suites They Use on Those Computers



Why I Chose A Bar Graph

I chose a bar graph as my second graph that I used to represent the data that I collected in my survey. This was because I was comparing different amounts of objects (the different office suites), which were in different categories (Mac and PC), which is what a bar graph is meant for. The different object that I was comparing amounts for, in my case, were the different office suites (X-axis) and the amounts of people who use them primarily (Y-axis), both in 2 different categories - Mac and PC. Using this format helps make inferencing easy, because I can simply glance at the graph and see which office suite (in either of both the types of computers Mac and PC) had the most usage amongst the 25 grade 6C students who I surveyed. If the office suite's bar was taller (or shorter), then the usage amount would be greater (or lesser), respectively. (If the scale is counting up, then I know the higher up my bar is, the higher the number it represents is.) In other words, using this bar graph format helps making inferences easier, because they can be done visually; they don't have to be done mentally. This is why I chose to use a bar graph as the second graph I used to represent the data that I collected in my survey.

More Inferences From The Survey

4. I can infer from the tally that Microsoft is a more well known company than Apple is. I say this because the number of Microsoft products that the 25 grade 6C students (aged 11-12) that I surveyed primarily used was more than the number of Apple products they primarily used. For example, look at the 2 different types of computers: the Mac and the PC. 17 people out of the 25 I surveyed primarily used a Microsoft Windows PC, but only 8 primarily used an Apple Mac. $17 > 8$ ($17 - 8 = 9$) According to the calculation to the left, there are more Microsoft products within the students I surveyed than Apple products. These are only for the types of computers that the people used, however.

Total no. of Apple products -

8 Macs +

5 iWork

= 13, therefore the total number of Apple products amongst the 25 grade 6C students I surveyed is 13.

Total no. of Microsoft products -

17 PCs +

15 MS Office for Windows PC

= 32, therefore the total number of Microsoft products amongst the 25 grade 6C students I surveyed is 32.

$32 > 13$ ($32 - 13 = 19$)

There are 19 more Microsoft products amongst the 25 grade 6C students I surveyed than Apple products.