**How are your favorite classes related?**

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Is your favorite elective class associated with your favorite core class? Collect class data to see if there is a relationship.

1. Which of the following is your favorite elective class? You must choose only one and mark your choice on the board.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Art | Music | Physical Education | Foreign Language | Technology |
|  |  |  |  |  |

1. Identify the individuals and variable?
2. Is the variable categorical or quantitative?
3. Go to stapplet.com to enter the class data. Make a bar graph and a pie chart. Sketch them below.
4. Sometimes it is helpful to investigate more than one variable. Come to the board and put a tally mark where you belong.

**Find each of the following:**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Core Class** |  |
|  |  | Math | English |
|  | Art |  |  |
|  | Music |  |  |
| **Elective** | P.E. |  |  |
|  | Foreign Lang. |  |  |
|  | Tech. |  |  |

% of all students who chose P.E.:

% of all students who chose Math and chose Art:

% of the students who prefer math that chose Tech.

1. How many variables does the table have? Are the variables categorical or quantitative?
2. Which variable would best explain or predict the other variable?
3. Go to stapplet.com and enter the data. Make a side-by-side bar graph and a segmented bar graph. Sketch them below.
4. How do the bars in the side-by-side-bar graph relate to the bars in the segmented bar graph?
5. Is there an association between favorite core subject and favorite elective? If so, describe it.
6. If there was not an association between favorite core subject and favorite elective, what would the graphs look like? Explain.

Analyzing Categorical Data

Important Ideas:

A picture containing screen, monitor, television, player

Description automatically generatedCheck Your Understanding:

1. The following graph was displayed by a national news organization. Explain why the graph may be misleading, and sketch a corrected version of the graph.
2. A real estate agent is collecting data on the number of houses built in his town’s three neighborhoods during three different decades. The table below gives information.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1960s | 1970s | 1980s |
| Shady Lane | 40 | 30 | 10 |
| Oakcrest | 60 | 15 | 5 |
| Pinewood Estates | 0 | 45 | 15 |

1. What proportion of the houses shown were built in Pinewood Estates?
2. Find the distribution of Decade Built for the houses in this town using relative frequencies.
3. What percent of homes were built in Oakcrest and in the 1960s?