**Using a Scatterplot to Find A Friend**

Peter Smith from Mechanicsburg High School in Pennsylvania shared this nice activity that helps students learn about scatterplots and correlation.

1. Get a copy of the top 10 movies from last year

2. Pair the students up randomly and have each rank the 10 movies in his/her own order of popularity. Do this independently of the partner.

3. Let one student list his/her preferences as the x-axis while the other student's choices form the y-axis.

4. Make a scatter plot of the data.

5. Analyze the data:

a. the stronger the positive association, the more likely the two students would enjoy going to the same movies together.

b. the stronger the negative association, the less likely they would enjoy going to movies together.

c. if the association is weak, then they would obviously hit and miss on their mutual movie enjoyment.

**Teaching Notes:**

This is a nice little exercise but it does help students see how regression analysis can be useful; especially, if this is extended to other factors such as sports, favorite foods, hobbies, etc. It would indicate good compatibility for dating!

Source: an email to apstat-l from Larry Peterson http://exploringdata.net/movies.htm

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_



Read through the following list of movie titles. Without consulting with any other students, please rank the movies from 1 to 10, with 1 meaning you’d like to see that movie the most, and 10 meaning you’d like to see that movie the least.

Some of the top movies in 2014 so far:

|  |  |  |  |
| --- | --- | --- | --- |
| My Rank(x) | Movie Title | Friend’s Rank(y) | Ordered Pairs (x, y) |
|  | The Hunger Games: Mockingjay – Part 1 |  |  |
|  | Teenage Mutant Ninja Turtles |  |  |
|  | Guardians of the Galaxy |  |  |
|  | Divergent |  |  |
|  | The Giver |  |  |
|  | The Maze Runner |  |  |
|  | Edge of Tomorrow |  |  |
|  | X-Men: Days of Future Past |  |  |
|  | Transformers: Age of Extinction |  |  |
|  | The Fault in Our Stars |  |  |

http://www.imdb.com/search/title?certificates=us:pg\_13

Next, number and label the axes, and plot the ordered pairs below.

1. Do you and your friend have similar tastes in movies?

2. What would you expect a graph to look like if two friends chose exactly the same ranks for the movies?

3. What would you expect a graph to look like if two friends chose none of the same ranks for the movies?

4. What would you expect a graph to look like if two friends chose about half of the same ranks for movies?