Scatter Plot Activity-Teacher

**Goal:** The goal of this activity is for students to see different types of correlation and recognize the patterns associated with each type of correlation. They will then have to create their own scatter plot based on directions given.

**Materials Needed:** This worksheet and pencil.

**Directions:** Divide students into groups of 2 or 3 and have them work through the worksheet.

Scatter Plots can represent patterns in bivariate data. We can see linear associations, positive and negative linear associations and non-linear associations. Below are 4 scatterplots representing different types of correlation. It is your job to determine the type of correlation that you see in each.

1. What type of correlation do you see in Scatter Plot 1? Why did you choose this?

**The correlation in scatter plot 1 is a perfect positive linear correlation. We could graph a line and it would pass through all the points on the scatter plot.**

1. What type of correlation do you see in Scatter Plot 2? Why did you choose this?

**The correlation in scatter plot 2 is a non-linear correlation, specifically a quadratic correlation. I chose this because these points do not fit a line.**

1. What type of correlation do you see in Scatter Plot 3? Why did you choose this?

**The correlation in scatter plot 2 is no correlation. There appears to be no pattern, linear or non-linear, associated with this graph. Instead the points seem to be randomly spread out, hence no correlation.**

1. What type of correlation do you see in Scatter Plot 4? Why did you choose this?

**The correlation in scatter plot 4 is a negative linear correlation. The data shows a negative trend, but this correlation is not a perfect linear correlation as there is no way to draw one line and have all the data points hit it.**

1. Draw a positive linear correlation association for scatter plot 5 below. **Pictures will vary..**
2. Find another group and compare your scatter plot 5 to their scatter plot 5. Are they different? What are the differences that you see? Please explain.

**Answers will vary. Most likely each groups drawing will start and stop at different values, have a different number of points, but should show a positive linear association in the graph. The idea with this question is for students to understand that there could be many different graphs associated with a positive linear association.**

1. Find a different group and compare your scatter plot 5 to their scatter plot 5. Are they different? What are the differences that you see? Please explain.

**Answers will vary. Most likely each groups drawing will start and stop at different values, have a different number of points, but should show a positive linear association in the graph. The idea with this question is for students to understand that there could be many different graphs associated with a positive linear association.**