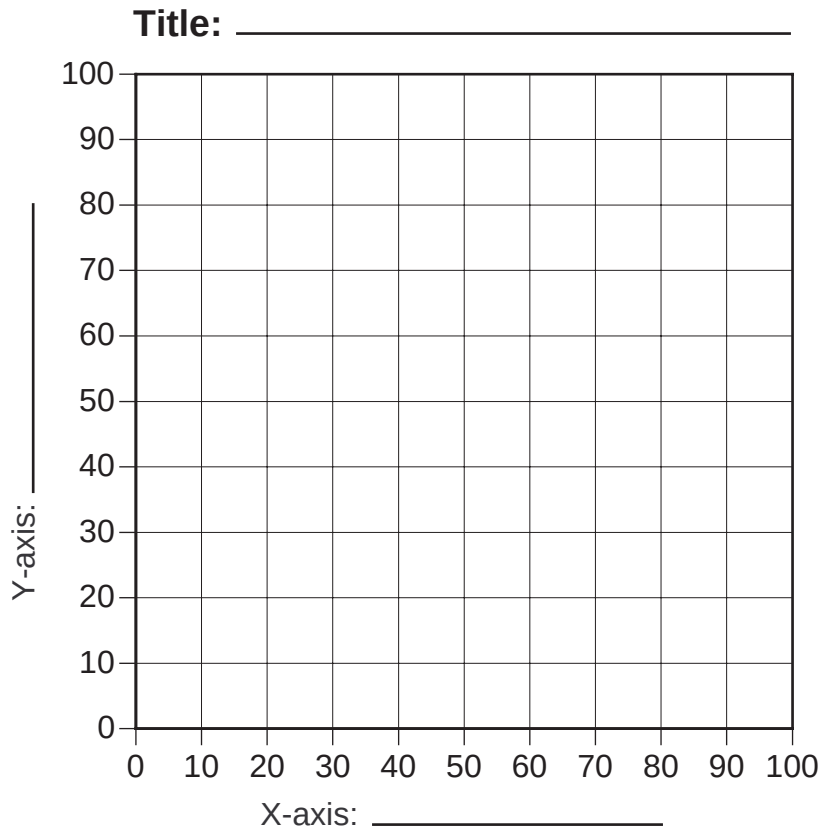
ACTIVITY 3A: SCATTERGRAMS — STUDENT WORKSHEET

A scattergram *(also called scatter plot* is*)*a graph that shows the relationship between two sets of data. To see the relationship more clearly, a line of best fit can be drawn. The line of best fit is drawn so that there are about the same number of points above and below the line. The example below shows the relationship between number of minutes studying and scores on a final exam.

Table

minutes studied	grades
20	30
40	40
50	40
60	20
60	60
60	95
70	75
80	75
90	90
90	95



In the example most of the points are on or close to the line of best fit. The points that are not close to the line of best fit are called **outliers**. How would you explain the two outliers on this graph?

The positive slope or upward slant (left to right) of the line of best fit shows a **positive correlation**. If a line of best fit has a negative slope or downward slant (left to right) then it shows a **negative correlation**. Sometimes no line of best fit can be drawn. In these cases there may be **no correlation** between the two sets of data. Can you think of some data sets that would have a negative correlation? Positive correlation? No correlation?

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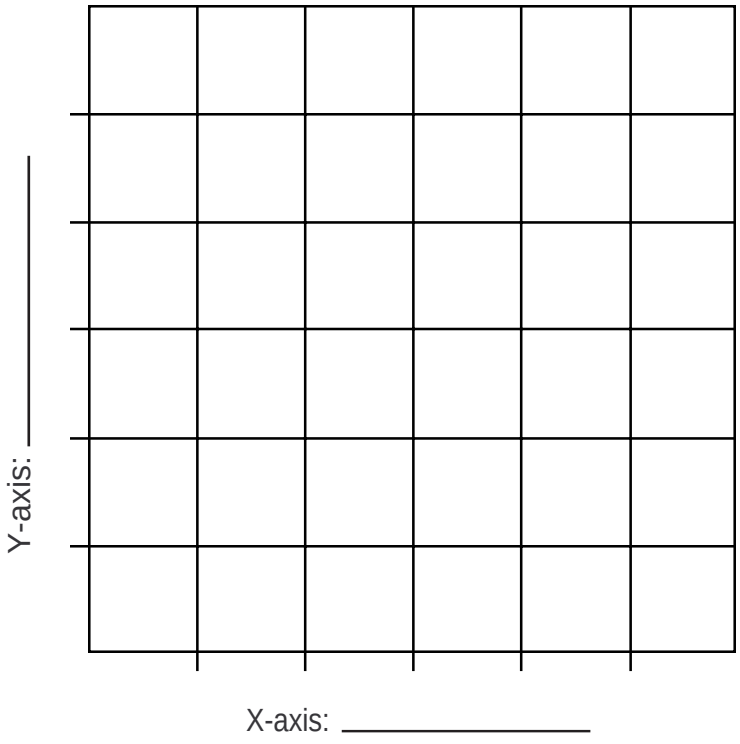
How do we know when a survey is translated from one language to another that the survey has been translated correctly? One way is to give the survey to the same participants in two languages, as in the HHIE-S, and then make a scattergram of the results.

On the graph below, make a scattergram using the data from the "Sample Data Set." Plot the data in column H (English Score) against the data in column I (Spanish Score). Be sure to title the graph. Label the horizontal axis "English Score" and the vertical axis "Spanish Score." Remember that the test scores range from 0–40 and all of the scores are even, so mark the intervals on the axes accordingly. When you finish plotting all of the points draw the line of best fit. Then answer the questions below.

Title: _____



1. What type of correlation exists between English and Spanish scores on the test?

_____

2. Give the coordinates of any outliers.

_____

3. What explanation can you give for the existence of these outliers?

_____

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