Time Frame: 50 minutes

Subject Matter: Scatter Plots

TELL ME

Objective: TSWBAT draw a scatter plot for a set of ordered pairs and classify graphically the relationship between the two variables as either positive, negative, or zero.

Standards: DA – 3.5 and 3.6

 Materials: Graphing papers and Worksheets

SHOW ME

Presentation of Information

The teacher will pose these questions on the board.

1. What causes high blood pressure?
2. What is a Normal blood pressure?
3. What health problems are associated with high blood pressure?

Example 1: Construct a scatter plot for the data obtained in a study of age and systolic blood pressure of six randomly selected subjects. Classify graphically the relationship between the two variables as either positive, negative, or zero. The data are shown in the table.



|  |  |  |
| --- | --- | --- |
| Subject | Age (x) | Pressure (y) |
| A | 43 | 128 |
| B | 48 | 120 |
| C | 56 | 135 |
| D | 61 | 143 |
| E | 67 | 141 |
| F | 70 | 152 |

Example 2: Construct a scatter plot for the data obtained in a study on the number of absences and the final grades of seven randomly selected students from a statistics class. Classify graphically the relationship between the two variables as either positive, negative, or zero. The data are shown here.

|  |  |  |
| --- | --- | --- |
| Student | Number of Absences (x)  | Final Grade (y) |
| A | 6 | 82 |
| B | 2 | 86 |
| C | 15 | 43 |
| D | 9 | 74 |
| E | 12 | 58 |
| F | 5 | 90 |
| G | 8 | 78 |

Example 3: Construct a scatter plot for the data obtained in a study on the number of hours that nine people exercise each week and the amount of milk (in ounces) each person consumes per week. Classify graphically the relationship between the two variables as either positive, negative, or zero. The data are shown here.

|  |  |  |
| --- | --- | --- |
| Subject | Hours (x) | Amount (y) |
| A | 3 | 48 |
| B | 0 | 8 |
| C | 2 | 32 |
| D | 5 | 64 |
| E | 8 | 10 |
| F | 5 | 32 |
| G | 10 | 56 |
| H | 2 | 72 |
| I | 1 | 48 |

Classwork

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: March 21, 2011

In each of the following draw a scatter plot for the variables and classify graphically the relationship between the two variables as either positive, negative, or zero.

1. A manager wishes to find out whether there is a relationship between the number of radio ads aired per week and the amount of sales (in thousands) of a product. The data of the sample is shown.

|  |  |
| --- | --- |
| No. of ads (x) | Sales (y) |
| 2 | 2 |
| 5 | 4 |
| 8 | 7 |
| 8 | 6 |
| 10 | 9 |
| 12 | 10 |

1. A researcher wishes to determine if a person’s age is related to the number of hours he or she exercises per week. The data of the sample is shown here.

|  |  |
| --- | --- |
| Age (x) | Hours (y) |
| 18 | 10 |
| 26 | 5 |
| 32 | 2 |
| 38 | 3 |
| 52 | 1.5 |
| 59 | 1 |

1. A study is conducted to determine the relationship between a person’s monthly income in dollars and the number of meals that a person eats away from home per month. The data from the sample is shown here.



|  |  |
| --- | --- |
| Income (x) | Meals (y) |
| 500 | 8 |
| 1200 | 12 |
| 1500 | 16 |
| 945 | 10 |
| 850 | 9 |
| 400 | 3 |
| 540 | 7 |

1. The director of an alumni association of a small college wants to determine whether there is any type of relationship between the amount of an alumnus’s contribution (in dollars) and the years the alumnus has been out of school. The data follow.



|  |  |
| --- | --- |
| Years (x) | Contribution (y) |
| 1 | 500 |
| 5 | 100 |
| 3 | 300 |
| 10 | 50 |
| 7 | 75 |
| 6 | 80 |

1. A store manager wishes to find out whether there is a relationship between the age of her employees and the number of sick days they take each year. The data for the sample are shown.



|  |  |
| --- | --- |
| Age (x) | Days (y) |
| 18 | 16 |
| 26 | 12 |
| 39 | 9 |
| 48 | 5 |
| 53 | 6 |
| 58 | 2 |

1. An educator wants to see how strong the relationship is between a student’s score on a test and his/her grade-point average. The data obtained from the sample are shown.



|  |  |
| --- | --- |
| Test score (x) | GPA (y) |
| 98 | 2.1 |
| 105 | 2.4 |
| 100 | 3.2 |
| 100 | 2.7 |
| 106 | 2.2 |
| 95 | 2.3 |
| 116 | 3.8 |
| 112 | 3.4 |