**Typical Relationships between Variables which can be determined from Graphs**

-Organize the sentence strips into categories based on whether they describe a positive correlation, negative correlation, static, or cyclic relationship between variables.
-Paste two examples of each type of relationship into your handout.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **GRAPH:** | A picture containing shape  Description automatically generated | Shape, rectangle  Description automatically generated | Shape  Description automatically generated with medium confidence | Diagram  Description automatically generated with medium confidence |
| **VARIABLE RELATIONSHIP:** | **Positive Correlation** | **STATIC** Shape  Description automatically generated with medium confidence | **Negative Correlation** | **CYCLIC** |
| **EXAMPLES:** |  |  |  |  |

**Review of how to construct a Line Graph:**

*Draw a graph representing the data below. Use the grid provided. Be sure to label axis, with name of variables and units, and provide a title.*

**Changes in Heart Rate with Exercise**

|  |  |
| --- | --- |
| Exercise (min) - Independent Variable – x axis | Heart Rate (#beats/min) – Dependent Variable – y axis |
| 0 | 65 |
| 1 | 75 |
| 3 | 95 |
| 4 | 105 |
| 5 | 125 |
| 6 | 135 |
| 7 | 145 |
| 8 | 155 |
| 10 | 155 |

***Determine scale by dividing the highest number in each column of table of values by number of grid lines on
 x – axis or y – axis. Adjust interval chosen to make data fit in given grid and easier to plot.***

**The independent variable: Time (min) labelled on x – axis**

$\\_\\_\\_\\_\\_÷\\_\\_\\_\\_\\_=$ so count by \_\_\_\_\_\_\_ starting at zero on x axis! Even spacing and intervals!

**The dependent variable: Heart Rate labelled on y – axis**



$\\_\\_\\_\\_\\_÷\\_\\_\\_\\_\\_=$ so count by \_\_\_\_\_\_\_ starting at zero on y axis!

 Title:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To Do

1. Label axes names & Title
2.Write in numbered
scale!

 -start at zero

 -Even spacing!
 -Equal intervals!

3. Plot points
4. Create line of best fit

5. Interpret data: Describe the relationship between the variables that is shown in this graph?

**Steps:**

1. **Cut out the following descriptions of relationships between two variables.**
2. **What would the data look like if it was presented in a graph?**
3. **Sort into appropriate categories. Check sort with teacher!**
4. **Paste/glue two examples for each category into the table for your notes.**

|  |  |  |
| --- | --- | --- |
| 1. The higher the temperature of the air in the oven, the faster a cake will bake.
2. As the time I spend at the mall increases, the money in my wallet decreases.
3. The more time people spend using social media, the less able they are to express themselves in conversation.
4. As more water pours from the tap, the volume in the bath increases.
 | 1. As a climber increases his/her altitude, the temperature decreases.
2. As the size of a post-it note increases, density of the post-it remains the same.
3. As time in a day increases, ocean water levels rise and fall in a predictable pattern.
4. As the time Ms. Harnik spends watching “The Voice” increases, her singing ability remains the same.
5. As date of the month increases, phases of the moon repeat in a pattern.
 | 1. As distance from the equator increases, temperature decreases.
2. As the time of year changes from September 2018 to September 2019, the temperature in Delta begins to decrease, then increase, and then decrease again.
3. As volume of a piece of quartz increases, its density remains the same.
4. As the time Mr. Turpin spends in the car increases, his distance remains the same. Why would this be?

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