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Coordinating Seminar

Soccer Scatterplots

**Goals:**

Students will develop a deep understanding of representing data by creating a scatterplot graph.

Students will have a sound understanding of the different correlation trends that data displays.

**Objectives:**

* Given a graph, students will be able to label the X and Y axis appropriately with 100% accuracy.
* Given the data he/she collected, the student will be able to make conjectures about possible relationships between the number of goals and number of turns it took for each goal with 80% accuracy.
* Using the data, students will be able to plot points accordingly with 100% accuracy.
* Viewing the data plotted, students will be able to mark lines of trend while describing it’s correlation with 80% accuracy.

**Materials:** (per groups)

* Soccer game board with spinner
* Paper clips
* Score board
* Graph paper
* Data table
* Pencils
* Pennies (game-marker)

**Description:**

In groups of 3, you will label yourselves as two players and one score keeper. Roles of the score keeper are to keep the data of how many turns it takes each player to score ‘said number’ of goals within a four minute game. Each game will be played with 4 quarters and each quarter will be a one minute game.

**Directions:**

1. Place the ‘soccer ball’ (penny) on the solid line in the center of the game board.
2. The two players will take turns spinning the paper clip on the spinner and moving the corresponding yards towards their opponent’s goal.

\*\*\*Each line is represented as 10 yard marks\*\*\*

1. Each time a player reaches their opponent’s goal, he/she will receive one point.
2. Tally each turn within correct goal # box until goal is scored.

**Example ↓**

|  |  |  |
| --- | --- | --- |
| Goal 1 | **IIIII = 5** | **III = 3** |
| Goal 2 | **II = 2** | **IIIIII = 6** |

**Data Collection:**

|  |  |  |
| --- | --- | --- |
| Score Keeper: | Player 1: | Player 2: |
| Goal 1 |  |  |
| Goal 2 |  |  |
| Goal 3 |  |  |
| Goal 4 |  |  |
| Goal 5 |  |  |
| Goal 6 |  |  |
| Goal 7 |  |  |
| Goal 8 |  |  |
| Goal 9 |  |  |
| Goal 10 |  |  |

**Graphing:**

* Label X and Y axis accordingly.
* Plot points from Data table.
* Mark a line of best fit, trend line.



**Types of Correlations**

* **Positive Correlation** – when the two sets of values strongly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ together.
* **No Correlation** – when the two sets of values don’t seem to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ together at all.
* **Negative Correlation** – when one set of values \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as the other value \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**What possible conjectures can we make about what can happen with different outcomes based off of the number of goals and the number of turns?**

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Rimbey, Kimberly. "Play Ball!" *Math Academy*. The Actuarial Foundation. Web. 23 Apr. 2015. <http://www.actuarialfoundation.org/pdf/math-academy-play-ball.pdf>.