**Activity Description: NLL and PLL Lacrosse Statistics Worksheet**

**Introduction:**

The National Lacrosse League (NLL) and the Premier Lacrosse League (PLL). The NLL and PLL are renowned professional lacrosse leagues that showcase top-tier athletes from around the world. While the PLL is played in an indoor, smaller field, the NLL takes place on an outdoor field with traditional dimensions. In this worksheet, we will analyze the goals and shots data from the 2021-2022 season of both leagues, collected from the official PLL and NLL websites. Through statistical analysis, we will compare the goals per game in each league, employing sample t-tests and constructing confidence intervals to gain insights into the goal-scoring trends and potential differences between the NLL and PLL.

**Learning Objectives:**

By the end of this activity, you will be able to:

1. Apply 2 sample t-tests to compare the means of goals per game between the NLL and PLL.

2. Construct and interpret confidence intervals to estimate the range of goals per game in each league.

3. Draw meaningful conclusions about the goal-scoring dynamics and potential differences between the NLL and PLL based on the statistical analysis.

**Methods:**

1. 2 Sample T-Tests: Knowledge of 2 sample t-tests, which are used to compare the means of two samples and determine if there is a statistically significant difference between them. Understanding the assumptions, calculations, and interpretation of t-tests will be necessary for comparing the goals per game between the NLL and PLL.

2. Confidence Intervals: Understanding the concept of confidence intervals, which provide an estimate of the range within which a population parameter (such as the mean goals per game) is likely to fall. Knowledge of constructing and interpreting confidence intervals will be valuable in estimating the potential range of goals per game in each league.