Year 9 Maths Investigation

Creating your own Fantasy League Team–Individual Project

Background Knowledge:

NRL Fantasy Rugby League is a game in which the participants serve as the manager, selector and coach of virtual professional Rugby League teams. The competitors choose their team rosters before the season starts and stick to a strict 9.4-million-dollar salary cap.

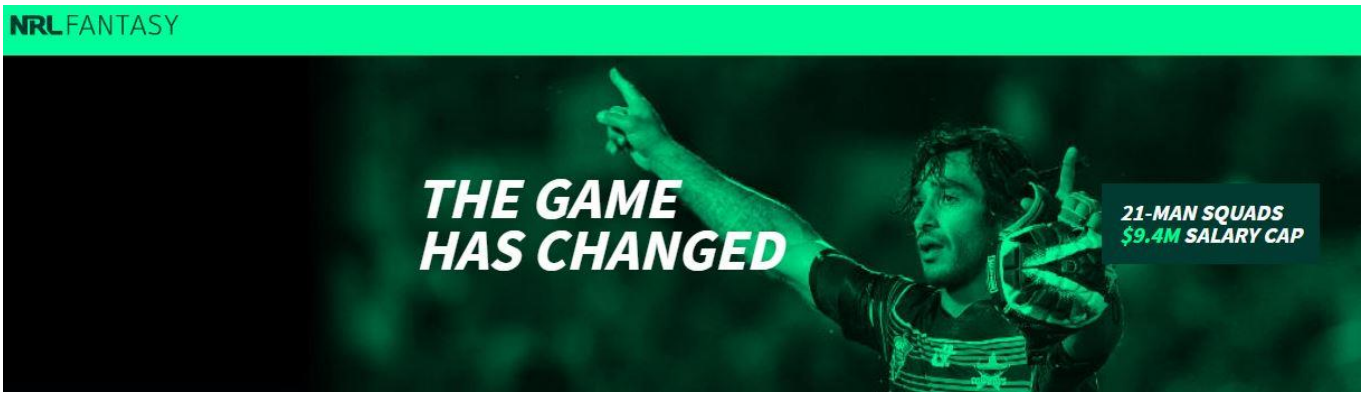
If you're new to Fantasy, the concept is simple: pick a squad of real NRL players, staying under the $9.4 million salary cap, and score points each round of the NRL season based on how your players perform in real life. One of your wingers scores a try? That's eight points. A forward makes 30 tackles? That's 30 points.

Data and statistics drive Fantasy League teams, worldwide this is known as the study of analytics. Analysis of analytics is key to creating a successful team.

Your knowledge of data and statistics will provide you with an advantage over other Fantasy League managers. This is where you get to test the theory of analytics verses personal choice within a specified budget called a salary cap.

Recruitment would be easier if we could select all the superstars of the NRL and disregard salary caps payments but this is not the case in professional sports. Teams only have a certain amount of money they can spend each season and must be strategic with player selections. *Can you select a team that will increase in value more than your peers?*

Teams throughout the world of professional sports are becoming increasingly reliant on analytics to shape decisions within the teams. Professional sports employ sports scientists, mathematicians, and computer analysts in attempts to gain an edge over their opposition. Analytics in sports is amongst the biggest growth trends across the world of professional sports. Clubs are battling to recruit the best analysists of games and player performances.



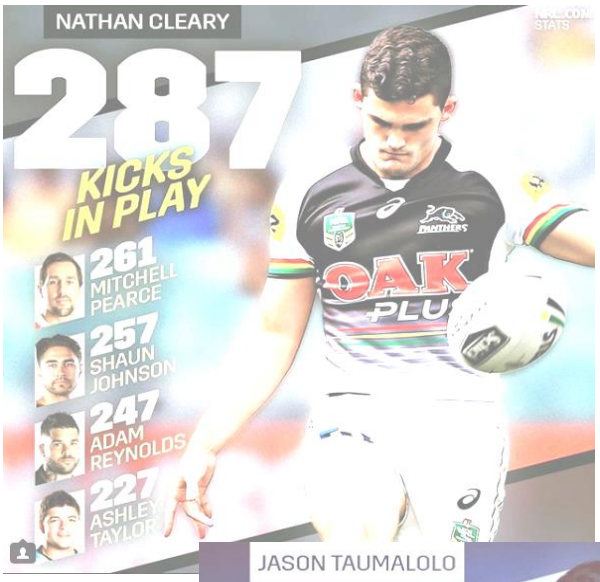
Year 9 Maths Investigation

Creating your own Fantasy League Team

Investigation:

Create a squad of 21 Rugby League Players ensuring you stay within a 9.4-million-dollar salary cap. Data and statistics must be your only decision-making tool in player selection.

- Players must be selected based on data that is important to the specific position they play in.
- Your task is to evaluate each player's important statistics and value to the team.
- You need to manage a budget called the player Salary Cap. Selecting the statistically strongest player in each position will exceed the budget, balancing the team is key.



Tasks include:

- ☐ Task 1: Player Box and Whisker plot
- ☐ Task 2: Player Comparison task; Part A and B
- ☐ Task 3: Team Selection and Justification task
- ☐ Task 4: Mean verses Yearly Totals
- ☐ Task 5: Back-To-Back Stem and Leaf Plots
- ☐ Student evaluation task

Task 1:

Player Comparison

Task 1:

Sort all NRL players according to their player position and place them within the Box and Whisker plot using their individual player salary as the measure.

Instructional Guide:

This 'Box and Whisker plot' will sort all player salaries into four quartiles as well as identifying possible outliers according to their position they play on their team. Players will then be matched to their salary and placed into the four quartile or outlier groups.

Steps:

1. Arrange all NRL players into player position lists
2. Create a 'Box and Whisker plot' for each position according to the salaries of players
3. Arrange all players into sub-set lists according to quartiles and outliers

Some players might feature on more than one positional 'Box and Whisker plot' as they have the ability to play several different positions in a Rugby League side. *Michael Morgan is such as player with his ability to play both Half Back and 5/8.*

For each of the 13 positions in a Rugby League side a 'Box and Whisker plot' is required to be completed. However, there are, a few positions in a Rugby League side where there two players sharing the same position. When completing the data 'Box and Whisker plot' for the two wingers, centres, second-row forwards and front-row forwards (props), the one plot will provide all the player information you require for all 13 spots in a team.

The double up of players positions results in the need for only 9 Box and Whisker plots to be completed.

1. Full backs
2. Wingers
3. Centres
4. 5/8s
5. Half Backs
6. Dummy Halves (Hookers)
7. Lock Forwards
8. Second-Row Forwards
9. Front-Row Forwards

How Is Player Value Calculated?

A player's initial price is based upon their scores from the previous year along with numerous other factors. Exact details regarding how player prices change from there on, other than to say that player prices are based on past performances with most recent games having the largest influence on the value. Player's prices will change once a week every week after the completion of the Round 1 of the regular season. The better their score each round, the more their player value increases. Equally, if they do not score well, a player's value can go down.