



WORKING WITH STATISTICS



If you were asked who won a game of rugby, but you hadn't seen the score, then the most obvious answer would be:

“The team that made the most tries always won their game!”

This is true for almost every game since a try is the best way to score points. A try is worth 4 points, and a conversion is worth 2 points. Together, they are worth 6 points.

However, we cannot assume that the team with the most conversions will always win. We explain why below.

In a real season of Rugby League, there were 11 matches where the team who made the most conversions **did not win the game!** This is because there are more ways to score points than just tries and conversions. We can put this information in table like so:

Difference in Conversions per Game	Total Games	
	Won	Lost/Draw
Teams that made more conversions than their opposition	154	11

However, by using statistics we can make predictions about match results without knowing the final score:

“If one of the teams made 2 or more conversions then their opposition then they always won their game.”

Not every match will have a difference of 2 or more conversions, but for the games that do, we will know who won it!

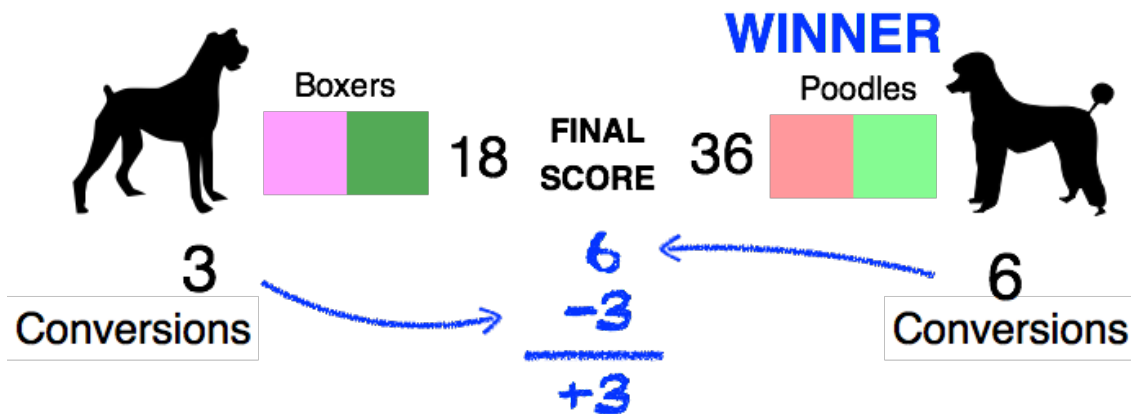


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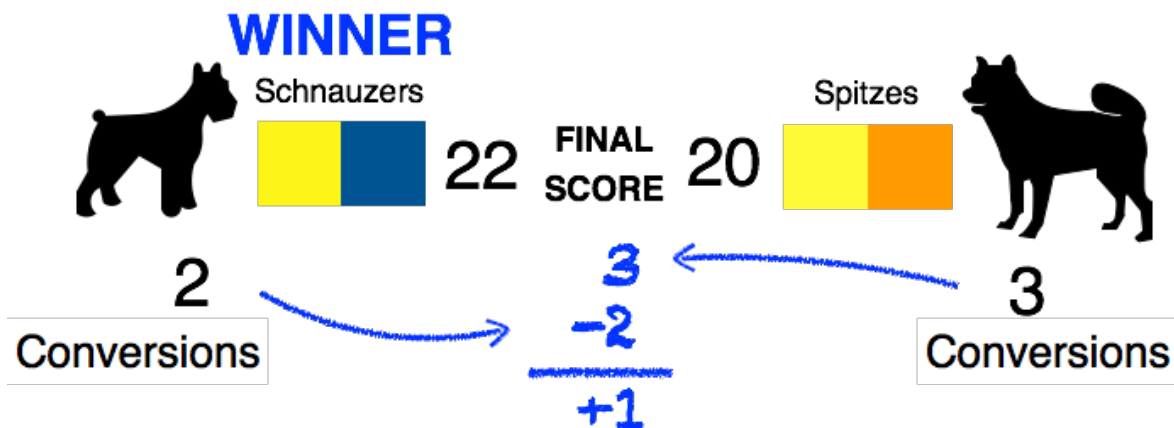


To see how this works, let's look at two matches. We are interested in 3 questions:

1. Which team made more conversions?
2. How many more conversions did they make?
3. Did they win or lose?



In a match between the Poodles and the Boxers, the Poodles had 3 more conversions than the Boxers and won the game. This shows that the team that had 2 or more conversions over their opposition always won the game.



However, in a match between the Spitzes and the Schnauzers, the Spitzes lost the game in spite of having 1 more conversion than the Boxers. Yet this still agrees that the team that had 2 or more conversions over their opposition always won the game. Since the conversions difference was less than 2 conversions, then we cannot say for sure which team won based on just conversions.



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These two matches were the third and fifth in Round 3 of the competition. We can look at other matches in this round and see which teams had a bigger conversion difference and whether or not they won.

Round	Match	Team that made more conversions	Conversions Difference	Won, Lost or Drawn?
Round 3	Spn - Chi	Spaniels	+3 more	W
Round 3	Shp - Pnt	Shepherds	+2 more	W
Round 3	Pdl - Bxr	Poodles	+3 more	W
Round 3	Crg - Bgl	Corgis	+2 more	W
Round 3	Sch - Spz	Spitzes	+1 more	L
Round 3	Hnd - Mst	Hounds	+1 more	W
Round 3	Ter - Dch	Terriers	+1 more	W

We have used red to distinguish teams that lost despite making more conversions and green for those that won. If we re-sort the games by conversions-difference, then the distinction becomes clear: there was only one conversion difference that linked to a losing team – the Spitzes with '+1 more'.

Round	Match	Team that made more conversions	Conversions Difference	Won, Lost or Drawn?
Round 3	Sch - Spz	Spitzes	+1 more	L
Round 3	Hnd - Mst	Hounds	+1 more	W
Round 3	Ter - Dch	Terriers	+1 more	W
Round 3	Shp - Pnt	Shepherds	+2 more	W
Round 3	Crg - Bgl	Corgis	+2 more	W
Round 3	Spn - Chi	Spaniels	+3 more	W
Round 3	Pdl - Bxr	Poodles	+3 more	W

+1 conversion up

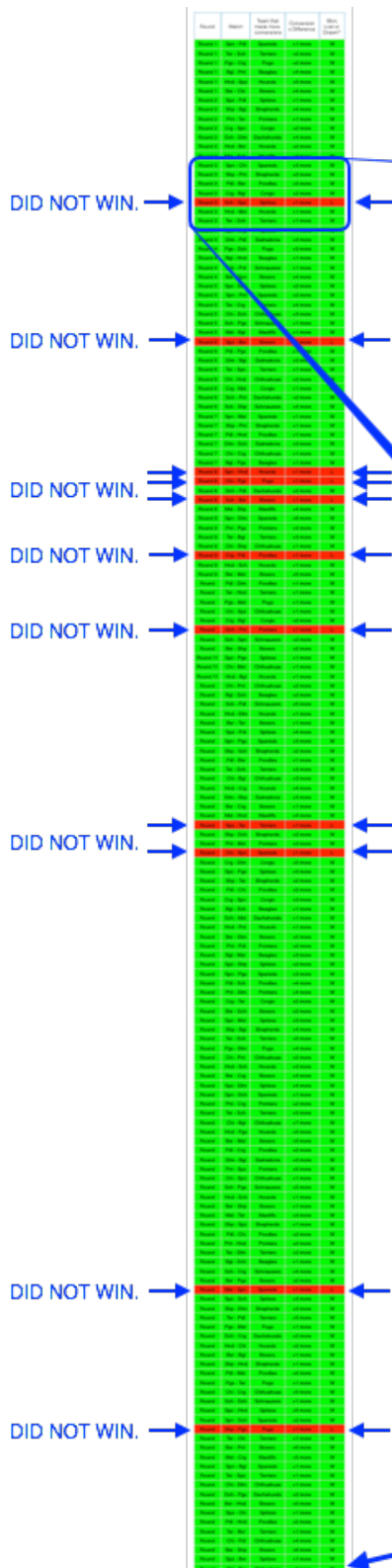
+2 conversion up

+3 conversion up

+1 conversion up. DID NOT WIN.



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Round	Match	Team that made more conversions	Conversions Difference	Won, Lost or Drawn?
Round 3	Spn - Chi	Spaniels	+3 more	W
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Round 3	Pdl - Bxr	Poodles	+3 more	W
Round 3	Crg - Bgl	Corgis	+2 more	W
Round 3	Sch - Spz	Spitzes	+1 more	L
Round 3	Hnd - Mst	Hounds	+1 more	W
Round 3	Ter - Dch	Terriers	+1 more	W

We now move from Round 3 to the entire season. We list every match - in the order played - and look at the same information as before: the team that made the most conversions, the difference in conversions and whether they won or not.

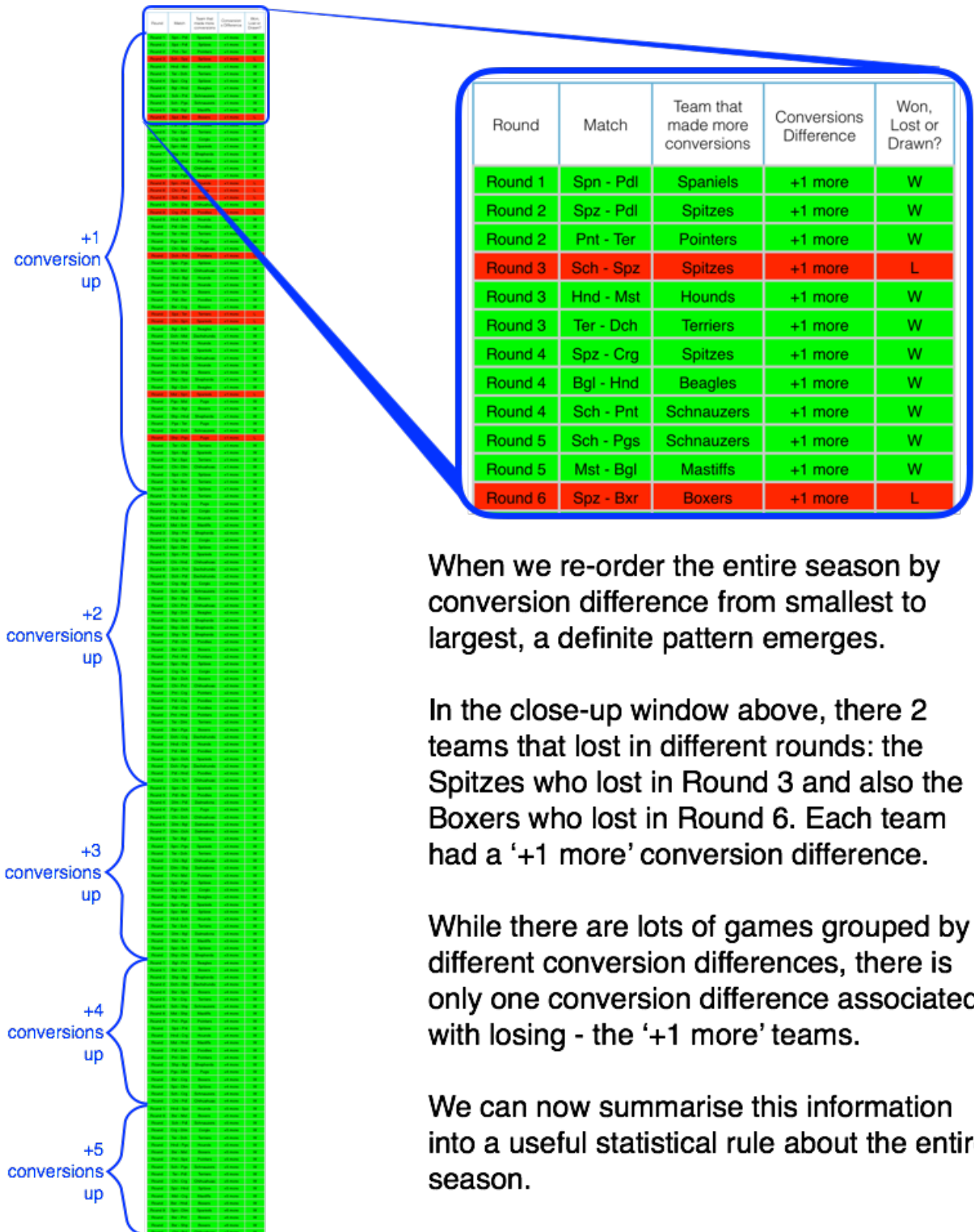
Again, we have used red to distinguish teams that lost despite making more conversions and green for those that won.

While the text is too small to read, the 'Red' matches/teams are clearly visible. Without having to look directly at each match we can see how few there were of these Red teams and how far they were spread throughout the entire season

The Grand Final is GREEN!



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When we re-order the entire season by conversion difference from smallest to largest, a definite pattern emerges.

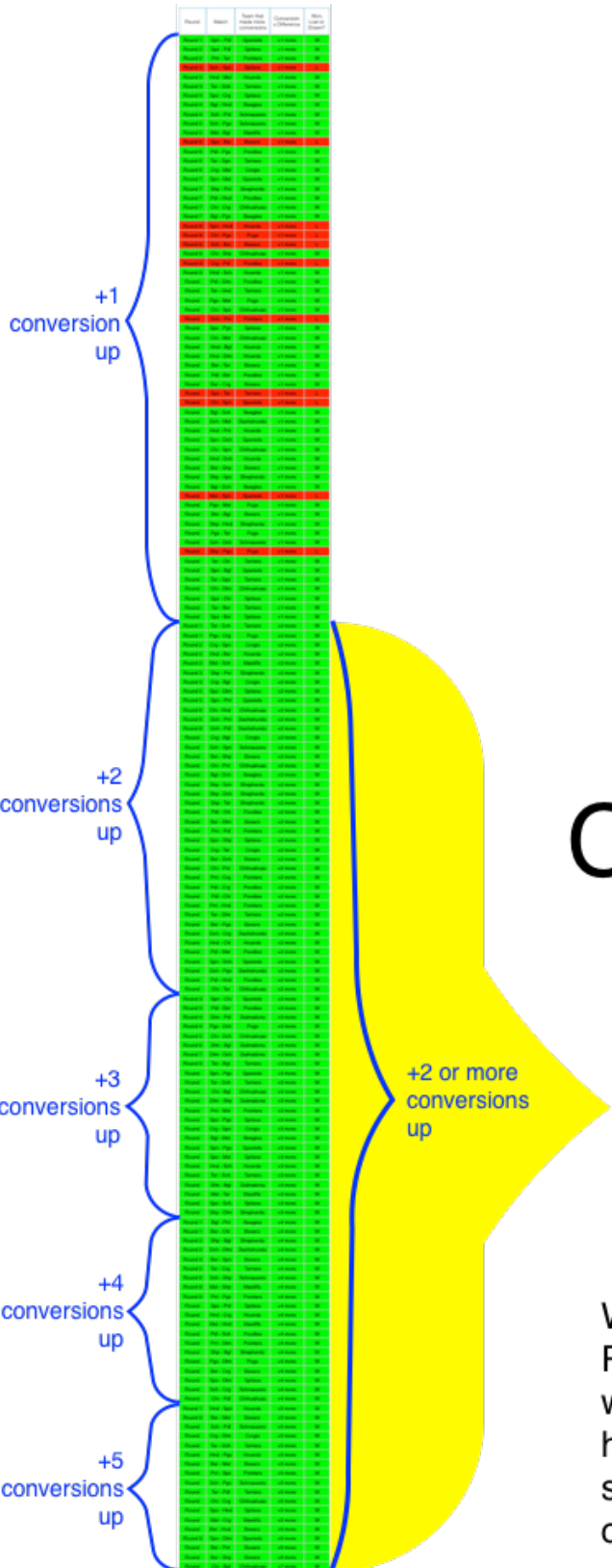
In the close-up window above, there 2 teams that lost in different rounds: the Spitzes who lost in Round 3 and also the Boxers who lost in Round 6. Each team had a '+1 more' conversion difference.

While there are lots of games grouped by different conversion differences, there is only one conversion difference associated with losing - the '+1 more' teams.

We can now summarise this information into a useful statistical rule about the entire season.



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CONVERSIONS RULE

In this season, any team that made 2 or more conversions then their opposition always won their game

We will not be using the Conversions Rule in this activity since it predicts the winner of a match too easily. Instead we have used this method to find other statistical rules that will allow you to work out **Who Won It.**