# Optimal SuperCoach Team 2018

Another season over, another empty stare off into the distance.

Congratulations to those coaches who won their leagues. Most of all though, congratulations to Cole of the winning team CharCole Chicken, who took home the $50k with an impressive score of 51,102.

For those of us who were raised in a generation of looking up the answers in the back of the textbook, saying ‘congratulations’ and walking away doesn’t quite scratch the itch. I blame the Information Age for my absolute need for closure.

So please sit back and allow yourself to be indulged in some SuperCoach over-analysis one last time for the year.

With a whopping 62,208 points, we present the Optimal SuperCoach Team for the 2018 season. All the correct trades, captain selections and position choices required to obtain the theoretically highest score possible.

Starting Team

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| **Player** | **Price** | **Position** |
| Kade Simpson | $ 516,300 | BAC |
| Rory Laird | $ 550,800 | BAC |
| James Sicily | $ 402,800 | BAC |
| Luke Ryan | $ 422,300 | BAC |
| Jeremy Finlayson | $ 123,900 | BAC |
| Tom Doedee | $ 123,900 | BAC |
| Sam Murray | $ 123,900 | Sub-BAC |
| David Mirra | $ 102,400 | Sub-BAC |
| Tom Mitchell | $ 653,500 | MID |
| Stephen Coniglio | $ 452,400 | MID |
| Jack Macrae | $ 587,800 | MID |
| Timothy Kelly | $ 117,300 | MID |
| Nick Holman | $ 102,400 | MID |
| Ed Curnow | $ 473,200 | MID |
| Jaeger O'Meara | $ 315,800 | MID |
| Cam Ellis-Yolmen | $ 263,900 | MID |
| Paul Seedsman | $ 300,200 | Sub-MID |
| Nat Fyfe | $ 597,900 | Sub-MID |
| Jake Brown | $ 102,400 | Sub-MID |
| Max Gawn | $ 503,700 | RUC |
| Brodie Grundy | $ 534,700 | RUC |
| Tom Jeffries | $ 102,400 | Sub-RUC |
| Justin Westhoff | $ 479,600 | FWD |
| Brandon Parfitt | $ 295,500 | FWD |
| Zac Fisher | $ 263,600 | FWD |
| Toby McLean | $ 470,200 | FWD |
| Jack Darling | $ 397,900 | FWD |
| Jesse Hogan | $ 383,200 | FWD |
| Bayley Fritsch | $ 117,300 | Sub-FWD |
| Liam Ryan | $ 117,300 | Sub-FWD |

Round-by-Round Summary

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| **Round** | **Score** | **Captain (points)** | **Trade-In** | **Trade-Out** |
| 1 | 2558 | Tom Mitchell (167) |  |  |
| 2 | 2747 | Tom Mitchell (148) |  |  |
| 3 | 2539 | Nat Fyfe (160) |  |  |
| 4 | 2627 | Brandan Parfitt (168) | Mitch Robinson Ben Brown | Tom Mitchell  Liam Ryan |
| 5 | 2626 | Max Gawn (151) | Harris Andrews Patrick Cripps | Stephen Coniglio Jaeger O'Meara |
| 6 | 2633 | Max Gawn (168) | Lachie Neale Jack Redden | Brandon Parfitt Ben Brown |
| 7 | 2813 | Jack Macrae (189) | Dayne Zorko Angus Brayshaw | Sam Murray Jeremy Finlayson |
| 8 | 2738 | Jack Macrae (156) | Tom McDonald Jake Lloyd | Paul Seedsman Zac Fisher |
| 9 | 2834 | Jack Darling (181) | Tom Hawkins Tom Mitchell | Cam Ellis-Yolmen Ed Curnow |
| 10 | 2754 | Mitch Robinson (172) | Patrick Dangerfield Callan Ward | Jack Macrae Jack Darling |
| 11 | 2632 | Tom McDonald (164) | Clayton Oliver Lance Franklin | David Mirra Toby Mclean |
| 12 | 2245 | Callan Ward (156) | Joshua Kelly Ollie Wines Chad Wingard | Mitch Robinson Dayne Zorko Nick Holman |
| 13 | 2302 | Lachie Neale (159) | Luke Breust Sebastian Ross Elliot Yeo | Harris Andrews Timothy Kelly Bayley Fritsch |
| 14 | 2283 | Patrick Cripps (187) | Dayne Beams Scott Pendulbury | Nat Fyfe Ollie Wines |
| 15 | 2839 | Tom Mitchell (181) | Jack Riewoldt Jason Johannisen | James Sicily Jake Brown |
| 16 | 2927 | Luke Breust (165) |  |  |
| 17 | 2772 | Tom Mitchell (159) |  |  |
| 18 | 2783 | Tom Mitchell (192) | Sam Menegola Josh Dunkley | Luke Ryan Jack Redden |
| 19 | 2862 | Patrick Cripps (173) |  |  |
| 20 | 3196 | Joshua Kelly (205) | Jack Gunston | Luke Breust |
| 21 | 2805 | Jack Riewoldt (219) | Lachie Hunter | Jesse Hogan |
| 22 | 2972 | Brodie Grundy (162) |  |  |
| 23 | 2721 | Brodie Grundy (148) |  |  |

A few observations,

1. Some big names were not required this year

Popular choices such as Dustin Martin, Gary Ablett, Robbie Gray and Joel Selwood never appear in the optimal side.

1. Max Gawn and Brodie Grundy take a bow.

For those who had Gawn, Grundy and a loophole rookie in the rucks such as Tom Jeffries here or more commonly Tony Olango, you will not need to be told that this was the optimal strategy this year. What a delight to see an entire position that does not require a single trade or rotation for the season. The All Australian team truly did deserve a second on field ruck spot this year.

1. The preseason analysis got a lot correct

Many teams had popular choices such as Sicily, McClean, Fisher, Holman, Doedee and Tim Kelly for round 1. It is validating to seem them here in the Optimal Team. Doedee deserves a special mention as it turns out that in his first season in the AFL he was a lock in defence for the entire season. Some high scores both early and late in the season ensured that the Optimal Team never traded him out.

1. The selectors of the All Australian team clearly don’t play SuperCoach.

Despite the clear choice of Gawn and Grundy in the All Australian Team, two of the optimal team’s locks for the season Justin Westhoff and Kade Simpson did not even make the 40-man squad. On the other hand it is no surprise that Tom Mitchell is such short favourite for the brownlow. He was chosen as captain an impressive five times, three more than any other player. Interestingly, perhaps to ensure that Mitchell did not get overly confident, the Optimal Team trades him out in round 4 only to trade him back in 5 weeks later.

1. The trading around the byes is very interesting

Rory Laird was another lock for the season, which is somewhat surprising given the poor timing of his injury during the bye rounds; rounds 12, 13 and 14. To get around this the Optimal Team uses some savvy trading around the byes. Notice how two Port Adelaide players Wines and Wingard are brought in round 12 given their earlier bye in round 10. This concept of using many trades to skip players over the byes was a popular trading strategy amongst many coaches this year and it’s validating to see it being replicated by the Optimal Team here.

1. Hindsight can be quite arrogant at times

You would have to be a brave individual to spend almost $600k to pick Nat Fyfe in your starting team only to leave him on the pine for round 1 behind rookies Tim Kelly and Nick Holman. Yet it turns out with Fyfe’s 75 to start the season that is exactly where he belonged.

Who needs cash cows when you can cash in from in form premiums? Macrae started the season with some serious heat increasing in price almost $140k in the first 10 rounds. The Optimal team then cashes in and downgrades Macrae to Dangerfield before Macrae’s hamstring injury saw most of that price increase vanish a few rounds later.

It also shows how nice it would be to know when the key forwards are going to make big scores. Ben Brown, the only Kangeroo who appears in the team, is brought into the team in round 4 and traded out two rounds later after some big scores. Likewise having Jack Riewoldt as captain in for his 219 point demolition would have been pretty handy.

1. Who is Jake Brown?

Perhaps my favourite outcome of this year’s optimal team is the surprise inclusion of young Jake Brown from Sydney, who was included in the team for the first 14 rounds of the season. Brown would probably be surprised by this himself given he has never actually played an AFL game. What might help explain this inclusion is that Brown held MID / FWD dual position eligibility and was also the cheapest possible price, $102,400, at the start of the season. Although you can’t see it in the summary presented here, Brown was swung between midfield and forward benches five times throughout the season to ensure the best possible players were on the ground. I am sure his AFL career will flourish after this quality experience in the optimal team.

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For those who are interested, in order to a do this analysis I use a branch of mathematics called Mixed Integer Programming, or Mathematical Programming. The aim of this field is to develop ways of solving problems where you have to make a number of decisions while trying to maximise or minimise some objective. I think we would all agree that solving fantasy football competitions retrospectively is a very important problem for society to answer. However it just so happens that there are many other almost equally important applications such as routing cars, planes and trucks more efficiently, making better use of resources in hospitals and creating fairer working rosters.

As a side experiment, this year my brother and I were plugging in the projections provided by SuperCoach into the optimiser to make our decisions. At the end of round 15 we were ranked in the top 250 teams before trailing off and finishing outside the top 5,000. It really goes to show that with injuries and suspension SuperCoach will always be a game of luck. Hopefully we will be developing a better forecaster over the off season so if everything goes to plan keep an eye out for team Marcus BOTempelli next year.