

NBA All Star Voting



This weekend is the NBA All-Star game. Who gets chosen to play in that game and how are they chosen?

The starting NBA All-Stars are selected by a combination of fan votes, votes from the media (think news, newspaper writers, ESPN and so on) and player votes. Each player gets ranked in each type of vote and those rankings are used to determine who starts in the all-star game. The lower the weighted score the better. Let's figure out the formula. Check out the data below and try to figure out how they get the weighted score, based on each rank.

2020 WEST FRONT COURT NBA ALL-STAR STARTER VOTING RESULTS

| Player name | Team | Fan Rank | Player Rank | Media Rank | Weighted Score |
|--------------------|------|----------|-------------|------------|----------------|
| LeBron James | LAL | 1 | 1 | 1 | 1 |
| Anthony Davis | LAL | 2 | 2 | 2 | 2 |
| Kawhi Leonard | LAC | 3 | 3 | 3 | 3 |
| Nikola Jokic | DEN | 5 | 4 | 4 | 4.5 |
| Paul George | LAC | 4 | 5 | 7 | 5 |
| Carmelo Anthony | POR | 6 | 7 | 8 | 6.75 |
| Brandon Ingram | NOP | 8 | 6 | 6 | 7 |
| Kristaps Porzingis | DAL | 7 | 11 | 8 | 8.25 |

2020 WESTERN GUARD NBA ALL-STAR STARTER VOTING RESULTS

| Player name | Team | Fan Rank | Player Rank | Media Rank | Weighted Score |
|-------------------|------|----------|-------------|------------|----------------|
| Luka Doncic | DAL | 1 | 1 | 1 | 1 |
| James Harden | HOU | 2 | 2 | 2 | 2 |
| Damian Lillard | POR | 3 | 3 | 3 | 3 |
| Russell Westbrook | HOU | 5 | 5 | 4 | 4.75 |
| Donovan Mitchell | UTA | 7 | 6 | 4 | 6 |
| Devin Booker | PHX | 8 | 4 | 4 | 6 |
| Ja Morant | MEM | 9 | 7 | 4 | 7.25 |
| Chris Paul | OKC | 11 | 9 | 4 | 8.75 |

1. Give the formula and tell what each part of the formula represents in the context of the all-star voting.

2. Use your formula to find the weighted score and to determine who had the better all-star voting score:

| Player | Team | Fan Rank | Player Rank | Media Rank | Weighted Score |
|--------------|--------|----------|-------------|------------|----------------|
| Jimmy Butler | Philly | 5 | 4 | 7 | |
| Jason Tatum | Boston | 4 | 7 | 4 | |

3. Use your formula to find the missing rank of these players from last year. Be sure to write out the formula (equation) and solve for the missing variable for each player.

| Player | Team | Fan Rank | Player Rank | Media Rank | Weighted Score |
|--------------------|------|----------|-------------|------------|----------------|
| Karl-Anthony Towns | MIN | 11 | 10 | | 10.0 |
| Zach LaVine | CHI | 7 | | 8 | 7.5 |
| Lonzo Ball | LAL | | 14 | 6 | 9.0 |

4. One off the students in my class says that the formula is fan rank plus player rank plus media rank divided by 3 or $(f + p + m)/3 = w$. He noticed this formula worked for DeMar DeRozen and Draymond Green's scores. Do you agree with him? If the formula is wrong, is it correct sometimes and if so, under what conditions?

5. Why do you think the NBA does the voting this way?

6. Do you think this is a fair way to select the starters? What are some other reasonable formulas that could be used to determine the starters? Create at least one new formula and tell if or how it would have changed the starters in the Western Conference based on the data on the first page.

Source: <https://ak-static.cms.nba.com/wp-content/uploads/sites/46/2020/01/2020-NBA-All-Star-Western-Conference-Guard-Voting-Results.pdf>