Name: _____ Date: _____

How Soccer Is Measured

Reading level 13 · 1554 words

Under the roof of a World Cup stadium, twelve cameras watch the pitch. At Qatar 2022, FIFA says, they tracked the ball and up to 29 points on every player, fifty times a second, while a sensor at the center of the match ball sent its own data 500 times a second. All of that machinery exists to enforce one rule, offside, which people have argued about for more than 160 years. FIFA calls the system a support tool. It alerts video officials in a room away from the pitch, and before the referee is told, those officials check by hand the kick point and the offside line. The cameras supply positions. People still make the call.

The rule is shorter than the fuss about it. Under Law 11 of the Laws of the Game, a player is in an offside position if any part of the head, body or feet is in the opponents' half and nearer to the goal line than both the ball and the second-last opponent. Hands and arms do not count, and being level is not enough. The first surprise is that the position is not an offence. The Laws say so in their first sentence. A player is penalized only for becoming involved in active play, by touching the ball, blocking an opponent's view of it, or challenging for it, and the position is judged at the moment a teammate plays the ball.

The second surprise is in the list of exceptions. There is no offside offence when a player receives the ball directly from a goal kick, a throw-in or a corner kick. A ball that rebounds off a goalpost, the crossbar or an opponent can still count as an advantage, and so can a ball that an opponent deliberately saves. A ball that an opponent deliberately plays, other than a deliberate save, does not count as a gain. The punishment is an indirect free kick from where the offence happened. So position alone decides nothing. The question is whether the player's place gave him a part in the play.

The idea is older than the Football Association's first laws. Eton's field game of 1847 had a rule against "sneaking," and the Cambridge Rules of 1856 said no player may loiter between the ball and the opponents' goal. In November 1863 a newspaper comparing the leading football codes called waiting nearer the opponents' goal than the ball for a pass "decidedly unfair." The first law was strict, and in February 1866 the Football Association softened it into a three-player rule. The Scottish FA urged a two-player rule from 1893, and after a trial match at Highbury on March 30, 1925, the International Football Association Board adopted it. In the next season, English Football League teams scored 6,373 goals in 1,848 games, about a third more than the season before. Historians credit the change with an immediate shift in style, from short passing toward longer balls, though one season is a small sample.

Counting a player is harder than counting a rule. At the 2026 World Cup, Lionel Messi scored 8 goals and made 4 assists, through the final on July 19, 2026, at age 39. The figures come

from ESPN and SI reports. Kylian Mbappé scored 10 goals in France's eight games, and he has one more World Cup goal than Messi over their careers. Goals are rare, though: the tournament produced 308 in 104 matches, or 2.96 a match, so one game's score is a noisy signal. An assist is harder still. It is not defined by the Laws of the game, so organizers or journalists keep the count, and the number depends on who keeps it.

Analysts therefore count chances. Expected goals, or xG, rates each shot from 0 to 1 using nearly one million past shots, where 0 is a chance that cannot be scored and 1 is a chance a player would be expected to score every time. It uses where the shot was taken and what came just before it, such as a through ball or a cross. A shot from the halfway line scores far less often than one from inside the penalty area, and Opta's model also includes where the goalkeeper stands. Its makers add a caution. A team with more xG did not necessarily deserve to win, because xG measures the quality of chances and not the outcome of the game.

Running can be counted too, and it shows what a body has to do. A 2005 review of the science found that elite players run about 10 kilometers, or 6 miles, in a 90-minute game, at an average effort of 80 to 90 percent of their maximum heart rate, with many bursts of jumping, sprinting and tackling. The best teams, it found, keep raising their physical capacities. For the 2026 World Cup, FIFA announced that the referee would stop every game 22 minutes into each half for a three-minute drink break, whatever the weather, as part of its commitment to player welfare. Messi's later style is described by writers as covering less ground and saving energy for short bursts of speed. That is a description from commentary, not a measurement.

A player has to be made before he is measured. Selection is one filter. A selection year is the span of birth dates used to sort children into one age group. Across ten European countries, professional players are born early in the selection year more often than chance would predict, and that relative age effect did not shrink between the 2000 and 2010 seasons, according to a 2012 study, whose authors propose changing how youth soccer is organized. Size is another filter. When Messi was 13, the agent who arranged his trial recalled, some Barcelona directors thought he was too small. Barcelona signed him anyway.

What separates elite players when the filters are done? A 2012 Swedish study gave 57 players tests of executive functions, which include flexible thinking and holding back a first response. Top-division players beat lower-division players, who beat a norm group, and the scores predicted goals and assists two seasons later. Another study filmed 27 players in 21 matches and found that players who looked around more before receiving the ball completed slightly more passes, though the effect was small. These are correlations. Neither one shows that practicing the skill would make a player better. The first study's authors write that the results strongly suggest thinking tests predict success, but the design is observational.

A 2025 experiment points to one possible mechanism. It showed 171 video scenes of corner kicks to 23 skilled players and 23 less skilled players, and the skilled players predicted where the ball would land more accurately. Some scenes blurred the kicker and some blurred the attackers. The authors write that skilled players appear to use the attackers' arrangement, and that the kicker alone was not enough for either group. Writers describe Messi's role under manager Pep Guardiola in similar terms: a false nine, dropping into midfield, drawing defenders with him and creating space for teammates. The study never mentions Messi, and it was a laboratory exercise on video, not a match.

A World Cup is also an instrument, and its design decides who is counted. Qualification takes about three years and is run by the six regional confederations of FIFA's members, and the hosts qualify automatically. For 2026, FIFA filled 46 places directly, the three hosts among them, and decided the last two in a six-team intercontinental play-off, so 45 teams qualified beside the hosts. In the tournament, 48 teams played in 12 groups of four. Each team plays three games, each group has six, and the last round is played at the same time to keep it fair. A win earns three points and a draw one.

The format changed because of what officials feared. In 2017 FIFA had planned 16 groups of three. In March 2023 it chose 12 groups of four, with 104 matches instead of 64 and eight games for a finalist, and FIFA said the revised format mitigates the risk of collusion, which means two teams agreeing on a result that suits both. The tie-breakers also start with a new test. From 2026, teams level on points are first separated by results among the teams concerned, before overall goal difference. That is a statistical choice, and it makes the head to head record matter more than a big win over the weakest team.

The knockout rounds end in one more method of measurement, the penalty shoot-out, which Argentina won 4 to 2 in the 2022 final. A coin toss lets one team choose whether to kick first. Does kicking first help? One study of 129 shoot-outs from 1976 to 2003 said yes. A larger count of 262 shoot-outs from 1970 to June 2003 found that teams kicking first won only 53.4 percent, which is not significantly different from a coin toss. The study that found an edge called it psychological: kicking first usually means leading, and the team behind must score just to stay level. The two groups of researchers reached different answers, and both studies stop in 2003. The cameras under the stadium roof can place a toe on the pitch fifty times a second. They cannot say whether a team was lucky.

Questions

1. What does an offside position decide by itself?

A. A free kick for the other team

B. A yellow card

C. Nothing; a player is penalized only for becoming involved in active play

2. Why does the book say a team with more xG did not necessarily deserve to win?

A. xG counts only goals
B. xG measures chance quality, not the outcome of the game
C. xG is kept by journalists

3. In this book, what does collusion mean?

A. A foul by a goalkeeper
B. A tied match
C. Two teams agreeing on a result that suits both

4. What happened to scoring after the 1925 offside change in the English Football League?

A. Goals rose from about 2.54 to about 3.45 a game
B. Goals fell by half
C. Nothing changed

5. Why does the book call the studies of executive functions and scanning only correlations?

A. They were never published
B. They show a link but not that practicing the skill makes a player better
C. They were done on goalkeepers

6. Who makes the offside decision when the camera system sends an alert?

A. A computer alone
B. The ball
C. Video officials check it, and the referee makes the final call

Words to know

offside: too far forward
collusion: secret agreement
confederation: regional group
penalized: punished
qualification: earning a place

Answer key: How Soccer Is Measured

1. C. Nothing; a player is penalized only for becoming involved in active play
2. B. xG measures chance quality, not the outcome of the game
3. C. Two teams agreeing on a result that suits both
4. A. Goals rose from about 2.54 to about 3.45 a game
5. B. They show a link but not that practicing the skill makes a player better
6. C. Video officials check it, and the referee makes the final call