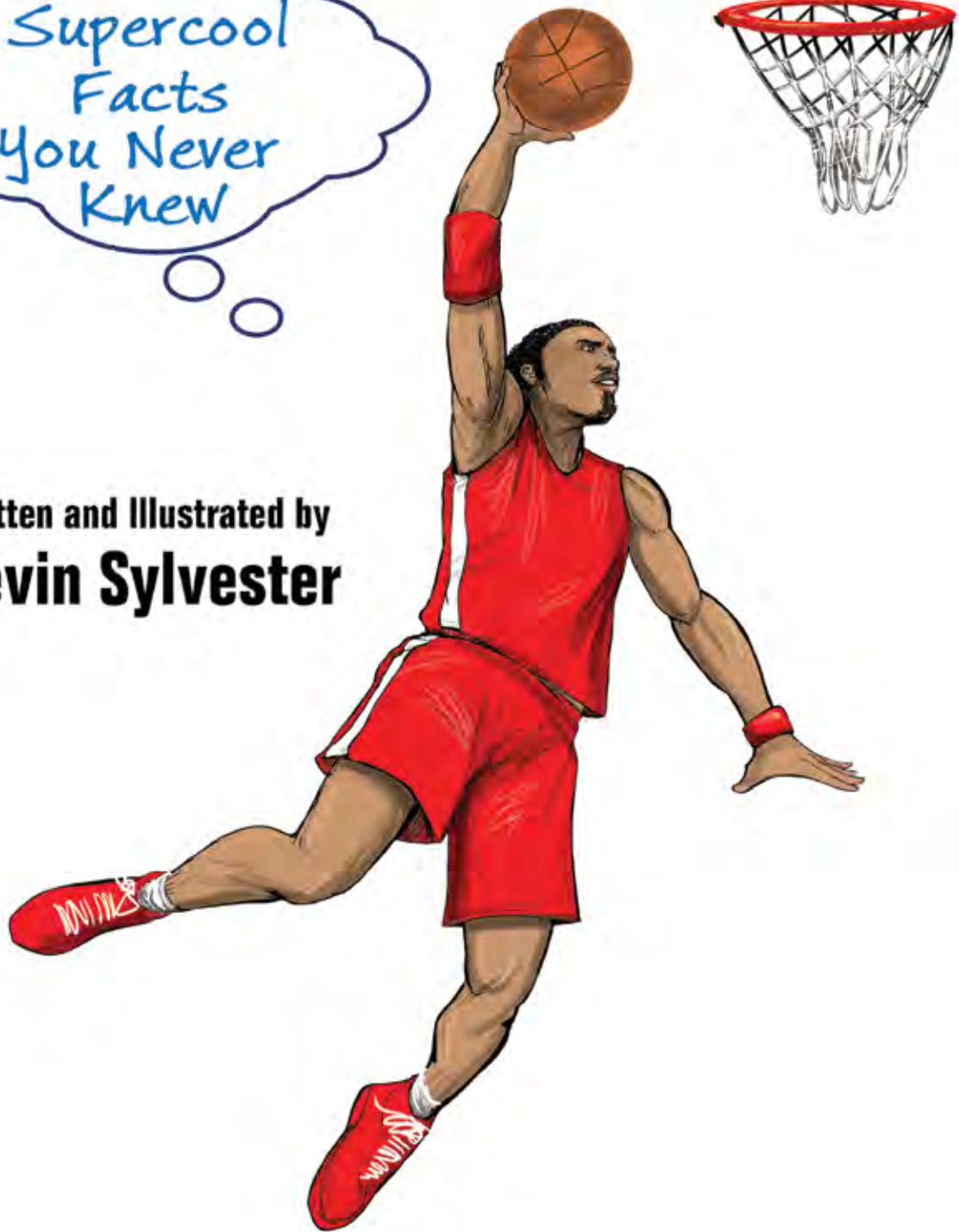


# BASKETBALLOGY



Written and Illustrated by  
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## To Noah, Sara, Zev, Judah, and Ellie—My Basketball Buds

—K.S.

# CONTENTS

<b>Introduction</b>	<b>5</b>
<b>Peach Baskets and Blizzards</b>	<b>6</b>
<b>Follow the Bouncing Ball</b>	<b>8</b>
<b><i>Wood</i> You Like to Play a Game?</b>	<b>10</b>
<b>Don't Quibble with the Dribble</b>	<b>12</b>
<b>Tick-Tock!</b>	<b>14</b>
<b>Timing Is Everything</b>	<b>16</b>
<b>1 – 2 – 3!</b>	<b>18</b>
<b>The Free Throw</b>	<b>20</b>
<b>What Would <i>You</i> Do?</b>	<b>22</b>
<b>The Arc and the Angle</b>	<b>24</b>
<b>Slam Dunk!</b>	<b>26</b>
<b>Feet Firsts</b>	<b>28</b>
<b>Incredible Feet</b>	<b>30</b>
<b>The Color Barrier</b>	<b>32</b>
<b>Integration</b>	<b>34</b>
<b>The Women's Game Is Born</b>	<b>36</b>
<b>Women Go Pro</b>	<b>38</b>
<b>Title IX</b>	<b>40</b>
<b>Globe-Trotting</b>	<b>42</b>
<b>Who's from Where?</b>	<b>44</b>
<b>The Street Game</b>	<b>46</b>
<b>A Drop of Water in the Ocean</b>	<b>48</b>

<b>Growing ... Up!</b>	<b>50</b>
<b>Big Bucks</b>	<b>52</b>
<b>Hair-Raising Superstars</b>	<b>54</b>
<b>For the Record Books—Players</b>	<b>56</b>
<b>For the Record Books—Teams</b>	<b>58</b>
<b>Play-off Pandemonium!</b>	<b>60</b>
<b>Offense vs. Defense: The Numbers</b>	<b>62</b>
<b>The College Game</b>	<b>64</b>
<b>Wheelchair Wonders</b>	<b>66</b>
<b>The Science of Sport</b>	<b>68</b>
<b>Underhanded Shots</b>	<b>70</b>
<b>A Night Out</b>	<b>72</b>
<b>Money In, Money Out</b>	<b>74</b>
<b>Who's Watching?</b>	<b>76</b>
<b>A Different Kind of Cap</b>	<b>78</b>
<b>Different at the Top</b>	<b>80</b>
<b>The Original 13 Rules</b>	<b>82</b>
<b>Trivia Time</b>	<b>84</b>
<b>The Answers</b>	<b>86</b>
<b>References and Further Reading</b>	<b>88</b>
<b>Index</b>	<b>90</b>
<b>About Kevin Sylvester</b>	<b>92</b>

# INTRODUCTION

**Y**ou may have heard baseball and football referred to as “America’s pastimes,” but that title really belongs to basketball. Unlike a lot of other sports, which grew out of field games such as rugby or cricket, basketball is a wholly North American invention, created without any previous rules to build on.

In December 1891, teacher James Naismith looked out the window of his school, in Springfield, Massachusetts, and saw snow, snow, and more snow. Outdoor sports—the normal recreation for his students—were out.

But Naismith, a Canadian who knew how to deal with being cooped up inside during many a blizzard, had a sudden inspiration. He nailed some peach baskets to the walls of the gym, called the stir-crazy young men in, and tossed them an old soccer ball. The goal was simple, he said: throw the ball in the other team’s basket.

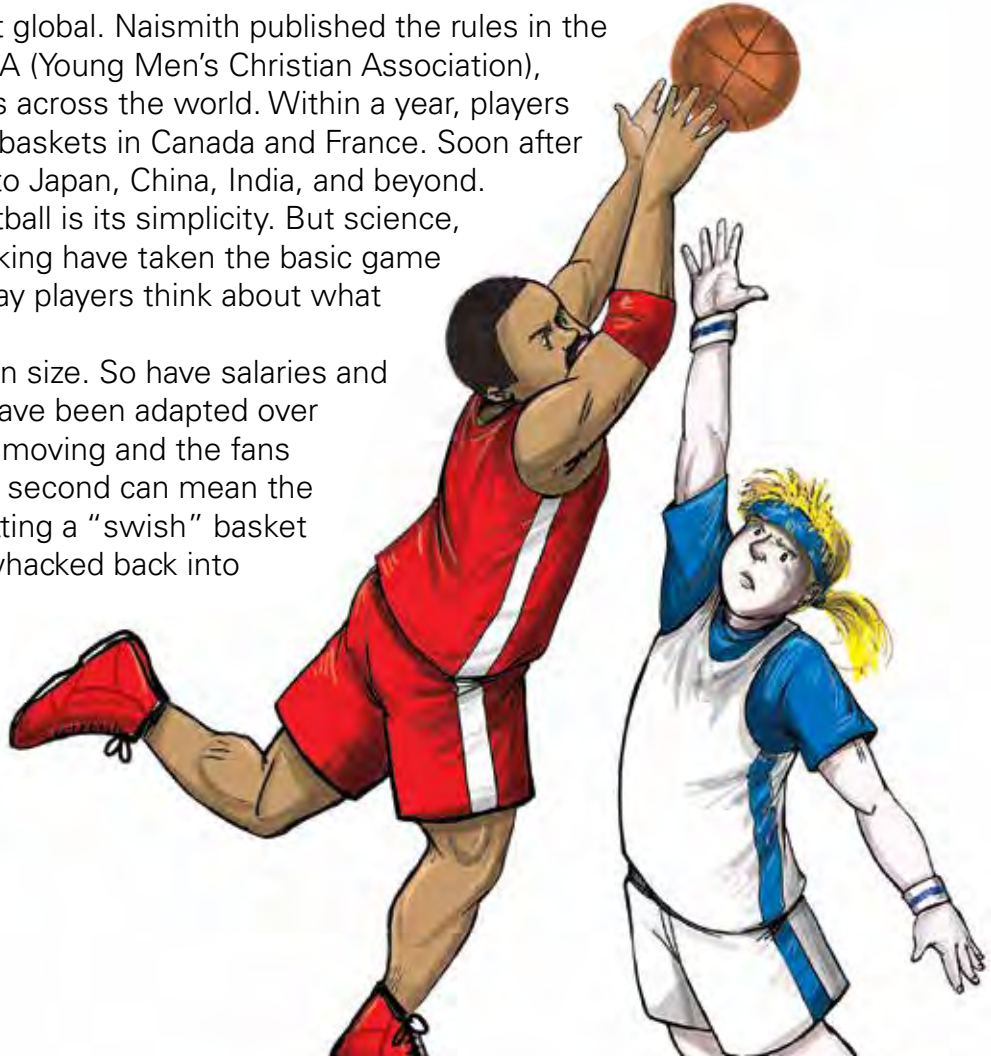
There were only 13 rules, and he made them up. (Check out pages 82 and 83 for the list.) The boys loved it! And they spread the word quickly. The game exploded. Women’s schools picked up the new sport just a few months later.

Then the game went global. Naismith published the rules in the newsletter for the YMCA (Young Men’s Christian Association), which had communities across the world. Within a year, players were tossing balls into baskets in Canada and France. Soon after that, the game spread to Japan, China, India, and beyond.

The genius of basketball is its simplicity. But science, math, and creative thinking have taken the basic game and transformed the way players think about what they do.

Players have grown in size. So have salaries and attendance. The rules have been adapted over time to keep the game moving and the fans entertained. And a split second can mean the difference between getting a “swish” basket and getting your shot whacked back into your face.

Simple? No way. Cool? You bet. Read on and see just how amazing North America’s true pastime really is.



# PEACH BASKETS AND BLIZZARDS



**J**ames Naismith didn't know he was creating a global game when he called those stir-crazy boys into the gym in 1891. He just wanted to keep his students active.

Naismith nailed peach baskets into the balcony that ran around the top level of the gym. Those baskets were 10 feet (3.04 meters) from the floor, and that's remained the official height ever since.

The first game was, in Naismith's own words, a bit of a free-for-all.



**"Before I could pull them apart, one boy was knocked out, several of them had black eyes, and one had a dislocated shoulder. It certainly was murder." —James Naismith**



# 1-0

It was so difficult for the players to move that the winning team made only one basket, a 25-foot (7.62-meter) shot by a guy named William Chase. So Naismith drew up some rules to stop the roughhousing and get things moving. No more holding. No more tackling. Scoring increased. Injuries decreased. The game grew.

## HURRY AND WAIT

Originally, when someone scored a basket, the game stopped—at least till the janitor could get a ladder to retrieve the ball. Naismith finally figured out if they cut the bottom out of the basket, the ball could go through, and the game could resume quickly. Eureka!

**The first metal basket was manufactured in the late 1890s.**



The netting was added to help officials see when a ball had actually gone through the hoop. That *swish* sound basketball players love to hear happens when a spinning ball is slowed down by the netting.

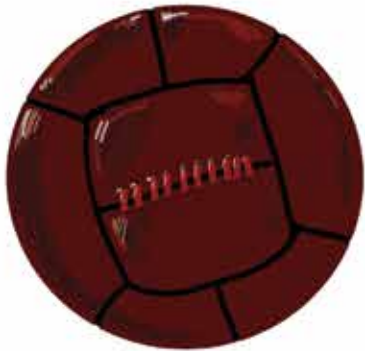


**The backboard appeared in 1895 to stop spectators from reaching for the ball. They were originally made of wood; today, they are made of Plexiglas.**



# FOLLOW THE BOUNCING BALL

**N**aismith used an old soccer ball for the first game and for a few years after that, but once dribbling (bouncing the ball) became the norm, something bouncier was needed.



In 1894, Naismith and the Spalding company (who were also the first baseball manufacturer) designed a ball with a rubber bladder and a leather covering.



Ever wonder what that little hole is on a basketball? It's the inflation hole that lets you inflate the bladder inside the ball. But you need a special pin to do that.

In **1894**, the laces originally ran along the outside seams to stitch the covering together.



The laces were removed in the **1930s**.



The orange ball we know today was developed in the **1950s**.

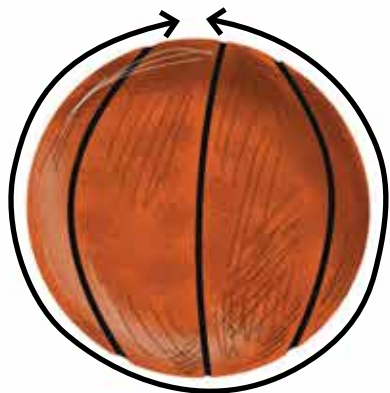


←→  
9.5 in (24.1 cm) diameter



## SIZING IT UP

How does the circumference of a basketball compare to balls used in other sports? Check it out.



**basketball: 30 in  
(76.2 cm)**



**soccer ball: 27 in  
(68.5 cm)**



**football: 22 in  
(55.9 cm)**



**softball: 12 in  
(30.5 cm)**



**baseball: 9 in  
(22.9 cm)**



**tennis ball: 8 in  
(20.3 cm)**



## CAN YOU PALM A BASKETBALL LIKE A PRO?

The leather covering has a dimpled surface to help players grip the ball. Pros can hold the ball with just one hand!

# WOULD YOU LIKE TO PLAY A GAME?

The first game was played on a floor designed for gymnastics and other exercises. It was only 54 by 35 feet (16.45 by 10.66 meters), roughly half the size of the average modern school gym. But, as the game grew, so did the court.



Basketball courts could be as small or as large as the arena allowed. Pro games were held in open ballrooms or indoor arenas. To limit the size of the court and to keep fans safe from flying basketballs—or bodies—teams set up wire barriers. An early version was made of chicken wire, which (not surprisingly) led to *many* cuts and scrapes. Later versions were made of rope or chains. The practice was scrapped in the 1920s, but basketball players have been called “cagers” ever since.

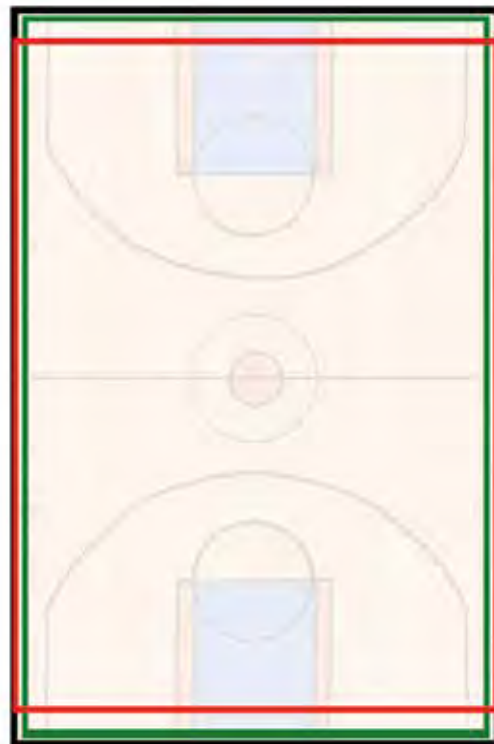
In 1924, as the pro game began to develop, teams got tired of shifting court sizes, chicken wire, and chains. It was time for standard court dimensions.

They set the court size as 60 to 95 feet (18.28 to 28.95 meters) long by 50 feet (15.24 meters) wide, depending on the space. They didn't have purpose-built basketball arenas then.

**Modern pro courts: 94 by 50 feet (28.65 by 15.24 meters)**

**International courts (e.g., the ones at the Olympics): 92 by 49 feet (28.04 by 14.93 meters)**

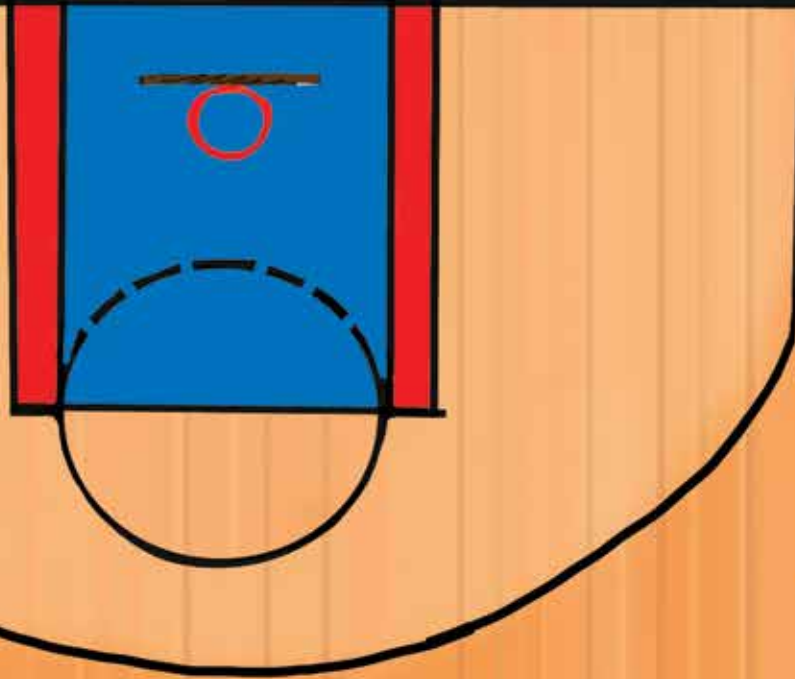
**High school courts: 84 by 50 feet (25.60 by 15.24 meters)**



## HARDWOOD

Basketball court floors are made of hardwood slats, usually maple.

The slats are  $\frac{3}{4}$  inch (about 1.9 centimeters) thick and often 5 inches (about 12.7 centimeters) wide by 12 feet (3.65 meters) long. The National Basketball Association (NBA) makes teams replace them every 10 years to make sure they are always in top condition.



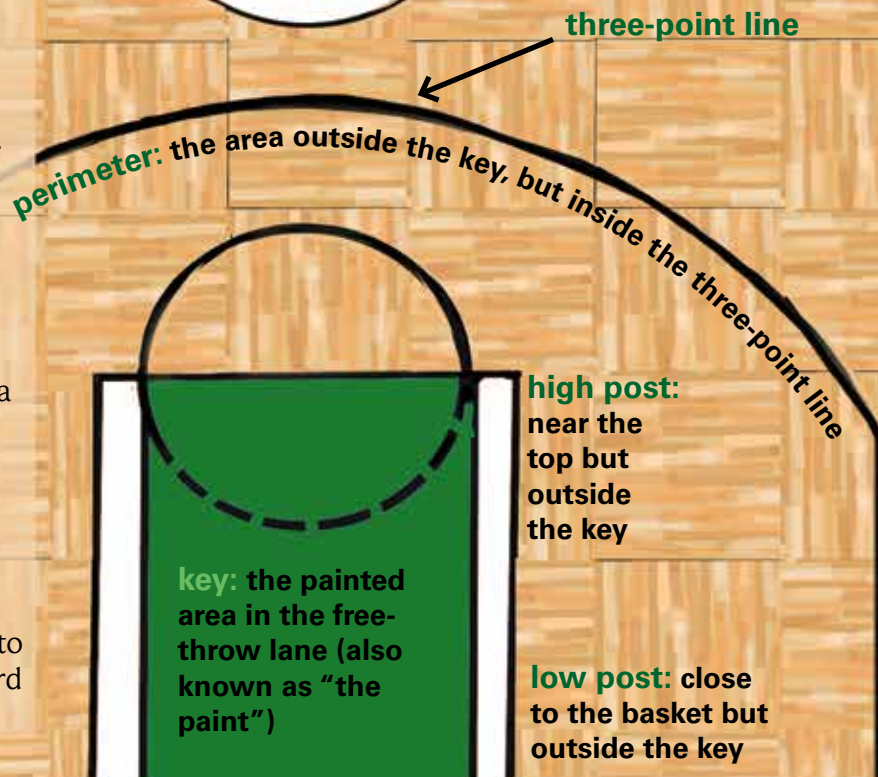
## EACH PART OF A COURT HAS ITS OWN NICKNAME



**center court:**  
the circle in the middle

## HOME-COURT ADVANTAGE

Boston's floor is an exception to the usual rules. It's made from oak, not maple. It's also a "parquet" pattern, made from small square pieces of wood, rather than long slats. The team designed the pattern in the 1940s, during a wood shortage. The original court was notorious for having "dead spots" where the ball wouldn't bounce well. Boston defenders would try to angle forwards toward those spots.



**three-point line**

**perimeter:** the area outside the key, but inside the three-point line

**high post:**  
near the top but outside the key

**key:** the painted area in the free-throw lane (also known as "the paint")

**low post:** close to the basket but outside the key

**baselines:** the lines at the ends of the court

# DON'T QUIBBLE WITH THE DRIBBLE

**B**asketball has seen a lot of innovations over the years, most designed to speed up the game. Dribbling was the first big one—and today, you can't imagine the sport without it.

The first basketball rules indicated that players needed to throw, or “pass,” the ball to get closer to the basket.

Naismith wanted the players to share. But it was way too easy to stand in front of somebody to stop them from throwing the ball. In the early days, opposing players would tackle or hold the player with the ball, preventing them from doing pretty much anything.

So, some ingenious players came up with a way to pass the ball to *themselves*—by bouncing it forward and then catching up. The dribble was born!

It wasn't *against* the rules. They weren't running with the ball, after all.

Naismith liked the idea. It kept the game moving and reduced the urge to tackle.



Yale University's men's team was the first to use dribbling in a game, in 1897. Early rules allowed only one bounce. But by 1909, players were allowed to dribble indefinitely, as long as they didn't pick up the ball and carry it (known as traveling), or “double-dribble” (stopping and starting again).

## WOMEN'S RULES

Women have been playing basketball since the beginning, although with slightly different rules. Initially, there were nine players a side instead of five. And they had to stay inside set zones, to prevent contact. Dribbling was allowed, but it was limited. Even in the 1950s, women players were only allowed to dribble three times before they had to pass or shoot.



**Look at old footage of basketball players and you'll see basic dribbling. But players have developed dozens of variations. Behind the back. Through the legs. Around another player. As long as you don't carry the ball or stop, you can be as creative as you want.**

# TICK-TOCK!

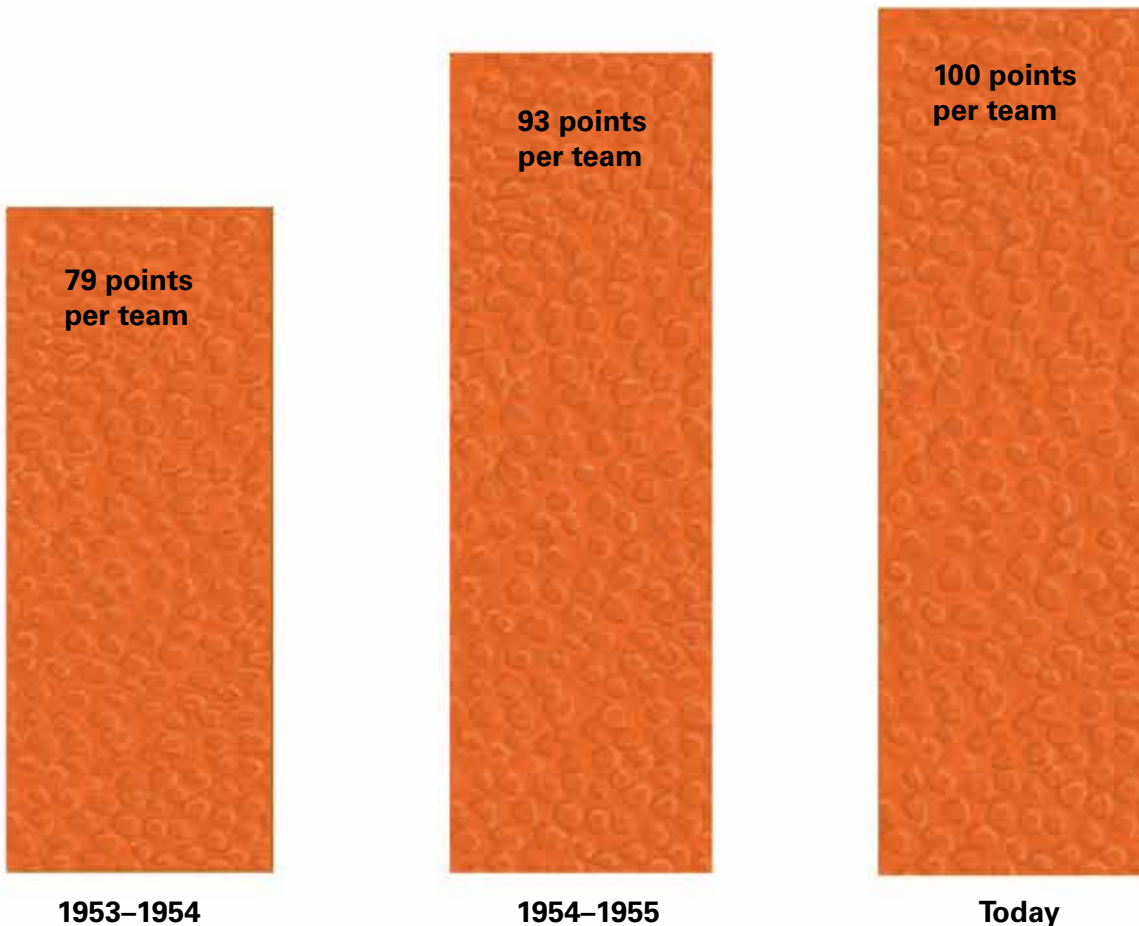
The introduction of the shot clock is arguably the *biggest* change to the speed of the game.



Teams *have* to attempt to shoot within 24 seconds of getting the ball. They don't have to make a basket, but the ball does need to at least touch the rim. This has led to an increase in scoring. Why?

Before the shot clock, players could hold on to the ball indefinitely to protect a lead. The only way to force a turnover was to foul a player on purpose and force them to shoot free throws. **BORING!\***

In the 1953/54 season, the year before the shot clock was introduced, the average score was 79 points a game per team. The year after? A whopping 93 points per team. The average has hovered around 100 points per team ever since.



### **\*HOW BORING WAS IT?**

On November 22, 1950, Fort Wayne beat Minneapolis 19–18. The two teams scored a grand total of *eight* baskets. The rest of the points came on foul shots.

In 1953, Boston and Syracuse battled it out in a play-off game that featured 106 fouls. Bob Cousy scored 30 points from the foul line.

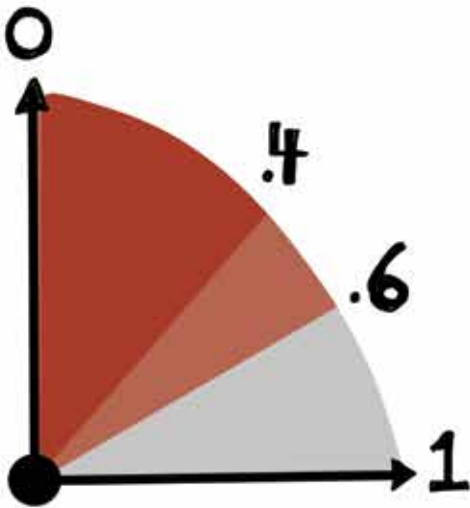
In 1954, Syracuse beat New York 75–69 in another foul-filled play-off game. The teams combined for 75 free throws.



**A “turnover” is when a team loses the ball to the other team without taking a shot. There are lots of ways to do this. They can make a bad pass. Go out of bounds. Double-dribble. Have the ball stolen from them. Good teams will turn the ball over about 12 times a game. Bad teams? Closer to 20.**

# TIMING IS EVERYTHING

**B**asketball games move really fast, and the ability to shoot quickly can be the difference between taking a shot or having the ball smashed back in your face.



A basketball player has less than a second to get off the shot. In that time, they have to set, aim, and then shoot—all while a defender is trying to block the shot.

Steph Curry is probably the fastest shooter of all time. He's able to set and shoot in **0.4 seconds**—0.2 faster than the league average. And he's incredibly accurate. In 2015/16, he made 402 three-point shots. That smashed his *own* record of 286, set the season before.

## ON THE REBOUND

Defenders try to rush the shooter, forcing them to hurry their shot and miss. If they miss, the ball is up for grabs. When a player grabs the ball after a missed shot, it's called a "rebound." If a player on the shooting team gets the ball, it's an offensive rebound, and the team gets **24 seconds** to shoot again. If the defensive team gets it, they get **24 seconds** to head back down the other way and shoot.

Big players often slam into one another fighting for the ball on a rebound. If they grab it at the same time, with no one getting clear possession, the officials call a "jump ball." Then the players have to leap up and grab the ball after an official tosses it in the air.

