



Lesson 4

All-Time Best Free Throw Shooters



DALLAS MAVERICKS
SCIENCE OF
BASKETBALL



Presented by FLOWSERVE





Lesson 4 - All-Time Best Free Throw Shooters

Description

Scholar athletes compute and analyze free throw percentages of the all-time most accurate NBA free throw shooters, then record their own free throw shooting statistics.

Materials

1. Lesson 4 Worksheet
2. "ALL-TIME BEST NBA FREE THROW SHOOTERS" Chart
3. Calculators
4. Stopwatch
5. Basketballs or Pro Mini Hoop

Answers

1. Steve Nash, Mark Price
2. .90 or 90%, 4 players (Barry, Curry, Nash, Price)
3. Reggie Miller
4. Stephen Curry (he is the only active player on the list)
5. 4,474
6. 516
7. 28 more free throws ($4,398+28=4,426$; $4,426/4,920 = .8996$ or 89.96%, which rounds to .900 or 90.0%)
8. The expectation would be that each player would make 9 out of 10 free throw attempts since each player has a free throw percentage of about 0.9 or 90%.

TEKS - Math

- 6.3.E - Multiply and divide positive rational numbers fluently.
- 6.4.E - Represent ratios and percents with concrete models, fractions, and decimals.
- 6.4.G - Generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money.
- 6.5.A - Represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions.
- 6.5.B - Solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models.





Website References

<https://www.youtube.com/watch?v=7-gore5GbDI>

Video (1:31): “Steve Nash discussing his ritual when shooting free throws”

<https://www.youtube.com/watch?v=QKkp0gyJxmM>

Video (1:09): “Steve Nash making 21 straight free throws in 1 minute”

Lesson 4 Answers

ALL-TIME BEST NBA FREE THROW SHOOTERS (through the 2019-20 NBA Season)				
Player	NBA Games Played	FT Made	FT Attempted	Free Throw %
Allen, Ray	1,300	4,398	4,920	.894 or 89.4%
Barry, Rick	794	3,818	4,243	.899 or 90.0%
Billups, Chauncey	1,043	4,496	5,029	.894 or 89.4%
Curry, Stephen	698	2,552	2,581	.905 or 90.5%
Murphy, Calvin	1,002	3,445	3,864	.892 or 89.2%
Nash, Steve	1,217	3,060	3,384	.904 or 90.4%
Price, Mark	722	2,135	2,362	.904 or 90.4%
Redick, J.J.	868	1,928	2,166	.890 or 89.0%
Skiles, Scott	600	1,548	1,741	.889 or 88.9%
Stojakovic, Peja	804	2,237	2,500	.895 or 89.5%





Lesson 4 Teacher Guide

Have scholar athletes complete the Lesson 4 Worksheet. Once the worksheet has been completed, show the video of Steve Nash, who played six seasons for the Mavericks from 1998-2004, discussing his ritual when shooting free throws:

<https://www.youtube.com/watch?v=7-gore5GbDI>

Video: (1:31): “Steve Nash discussing his ritual when shooting free throws”

Have students predict how many free throws Steve Nash, who on September 7, 2018 was inducted into the Naismith Memorial Basketball Hall of Fame in Springfield, Massachusetts, can make in a row in 60 seconds:

<https://www.youtube.com/watch?v=QKkp0gyJxmM>

Video (1:09): “Steve Nash making 21 straight free throws in 1 minute”

After watching the videos either take the scholar athletes to the school’s playground or gym, and have them practice free throws, or use the pro mini hoop. Recommend that the scholar athletes develop a ritual when shooting free throws.

After the scholar athletes have had sufficient practice shooting free throws, organize a contest (individual or team competition) to determine how many free throws can be made by a scholar athlete/team in 1 minute either in the playground/gym or with the pro mini hoop.





Worksheet 4

The chart below lists the Top 10 all-time NBA free throw percentage leaders as of the end of the 2017-18 season. Fill in the chart, rounding each free throw percentage to the nearest thousandth.

ALL-TIME BEST NBA FREE THROW SHOOTERS (through the 2017-18 NBA Season)				
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Allen, Ray	1,300	4,398	4,920	.894 or 89.4%
Barry, Rick	794	3,818	4,243	
Billups, Chauncey	1,043	4,496	5,029	
Curry, Stephen	625	2,271	2,514	
Miller, Reggie	1,389	6,237	7,026	





Murphy, Calvin	1,002	3,445	3,864	
Nash, Steve	1,217	3,060	3,384	
Price, Mark	722	2,135	2,362	
Skiles, Scott	600	1,548	1,741	
Stojakovic, Peja	804	2,237	2,500	

Use the “ALL-TIME BEST NBA FREE THROW SHOOTERS” chart to answer the questions below.

1. Which two players are tied for the highest all-time free throw percentage at .904 (90.4%)?

2. If free throws percentages were rounded to the nearest hundredth, instead of the nearest thousandth, what percent would be used as the all-time free throw percentage, and how many players would be tied for the lead on that list?

3. Which player from the list had the most number of games played, free throw attempts, and free throws made?

4. Of the ten players listed on the chart, which is the only one who has an opportunity to increase his free throw percentage?





5. Peja Stojakovic attempted 2,500 free throws in his career. How many free throws would he have made had he shot 5,000, if his free throw percentage had stayed the same?

6. Scott Skiles played in 600 games in his NBA career. How many free throws would he have made had he only played in 200 games, if his free throw percentage had stayed the same?

7. Ray Allen made 4,398 out of 4,920 free throw attempts. In order for Allen to have had a free throw percentage of .900 (rounded to the nearest thousandth), how many more free throws did he need to have made in his career?

8. If each of the players on the list attempted 10 free throws, how many made free throws would you expect from each player? Justify your reasoning.

