

Football Stats Real Life Problem Solving

National Curriculum Objectives:

Mathematics Y3: Interpret and present data using bar charts, pictograms and tables; Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

Mathematics Y4: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs; Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Mathematics Y5: Solve comparison, sum and difference problems using information presented in a line graph; complete, read and interpret information in tables, including timetables.

Mathematics Y6: Interpret and construct pie charts and line graphs and use these to solve problems; calculate and interpret the mean as an average.

Differentiation:

Beginner Interpret a simple bar chart and answer 5 questions. Use simple information to fill in a table and complete a bar chart. Aimed at Year 3 Secure/Year 4 Emerging.

Easy Interpret a bar chart and answer 5 questions including comparing information. Use given information to fill in a table and complete a bar chart. Aimed at Year 4 Secure/Year 5 Emerging.

Tricky Use given information to fill in a table and complete a bar chart. Interpret a line graph and use it to fill in a table. Find totals of sets of five numbers and answer 3 questions. Aimed at Year 5 Secure/Year 6 Emerging.

Expert Fill in missing data on four pie charts and a table. Answer three questions. Use information in table to complete line graph. Find averages of sets of five numbers and answer 2 questions. Aimed at Year 6 Secure.

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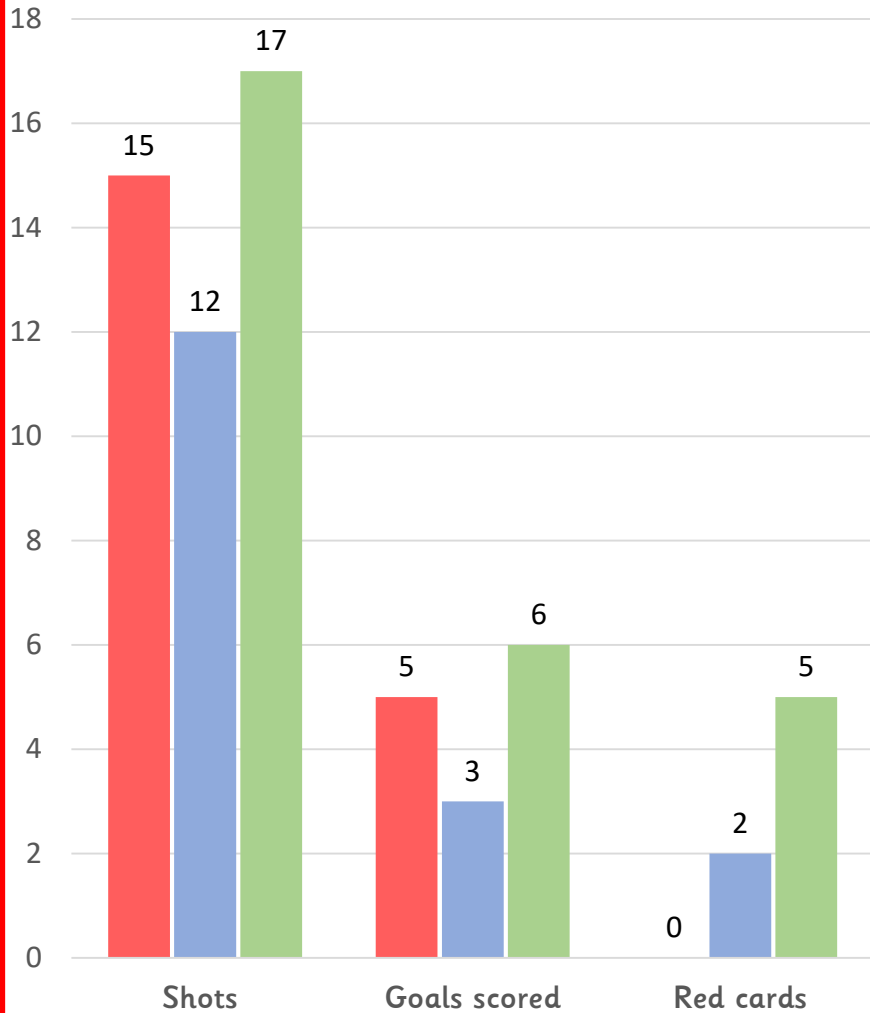
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Football Stats Real Life Problem Solving – Teaching Information

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Past Five Games

■ Delaney ■ Roberts ■ MacDonald



As the football coach, it is your job to choose the captain of the team. It is important to choose somebody who is a good team player, as well as a great footballer. Football coaches often use information called data to help inform their decisions.

Who scored the most goals in the past five games?

Read the chart. Put the players in order from most to fewest shots taken.

Who took the fewest shots in their past five games?

Which player did not receive any red cards?

Who would you choose as the captain? Why?

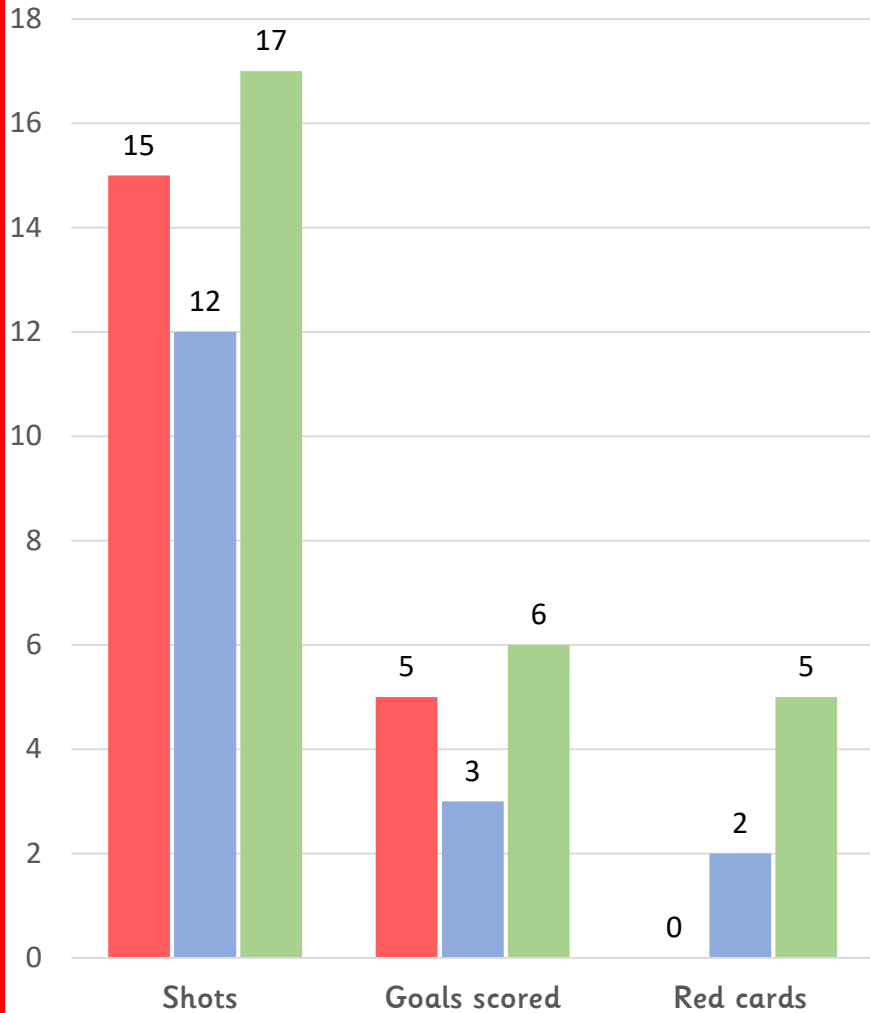
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Football Stats Real Life Problem Solving – Beginner

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Past Five Games

■ Delaney ■ Roberts ■ MacDonald



As the football coach, it is your job to choose the captain of the team. It is important to choose somebody who is a good team player, as well as a great footballer. Football coaches often use information called data to help inform their decisions.

Who scored the most goals in the past five games?

Macdonald with 6 goals scored in the past five games.

Read the chart. Put the players in order from most to fewest shots taken.

MacDonald (17), Delaney (15), Roberts (12)

Who took the fewest shots in their past five games?

Roberts only took 12 shots in the past five games.

Which player did not receive any red cards?

Delaney did not receive any red cards.

Who would you choose as the captain? Why?

Delaney would make the best captain, as he scored 5 goals out of 15 shots and has not received any red cards. While MacDonald has scored more goals, he has gotten 5 red cards; a captain needs a better attitude.

Read the match report and use it to fill in the table.

North FC 3 – 0 South United

In North FC's comfortable 3 – 0 victory last night, all three of their star strikers scored.

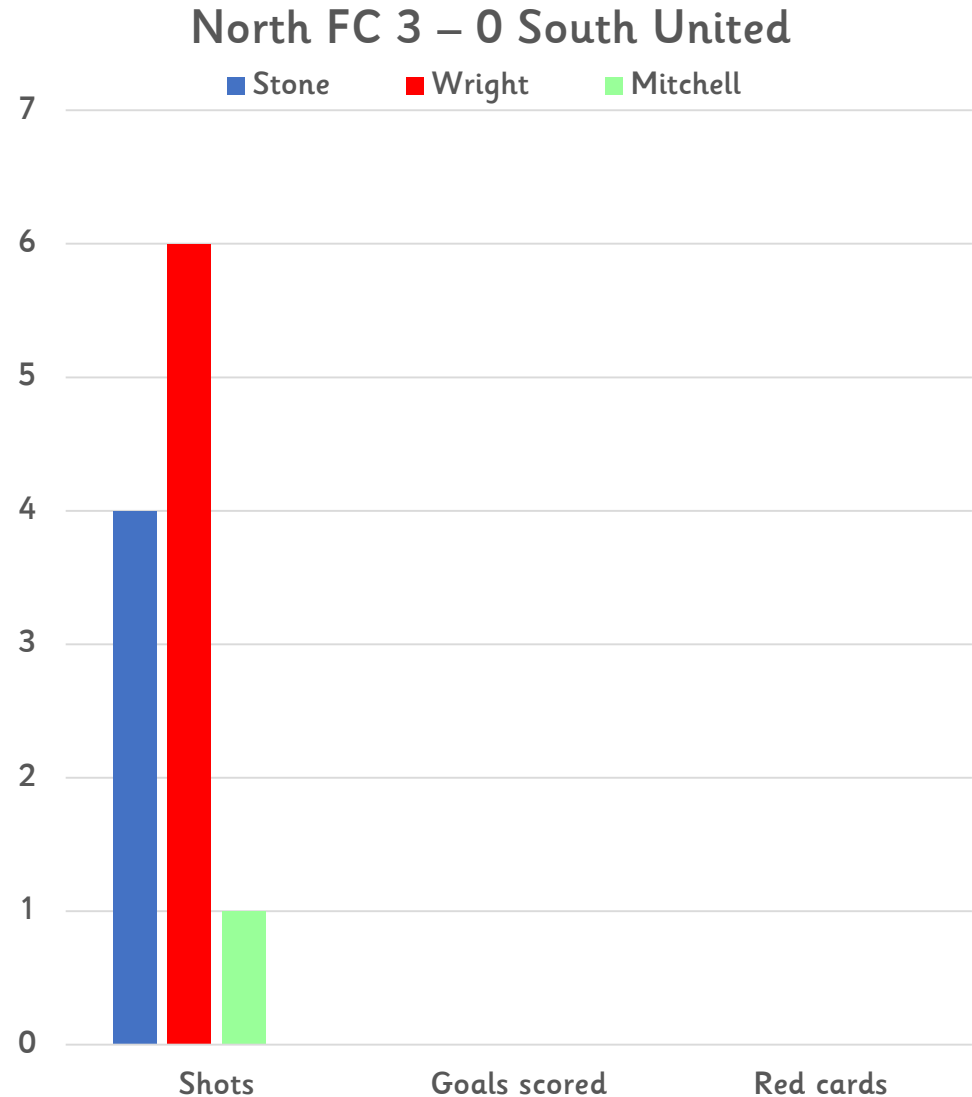
Stone won man of the match, and scored the first and second goals of the game, taking 4 shots in total.

Wright had two more shots than Stone, but his game turned sour after getting a red card in the second half.

Mitchell, who came on as a late substitute, scored with his only shot of the game.

	Stone	Wright	Mitchell
Shots	4	6	1
Goals scored			
Red cards			

Now use the information from the table to fill in the bar graph.



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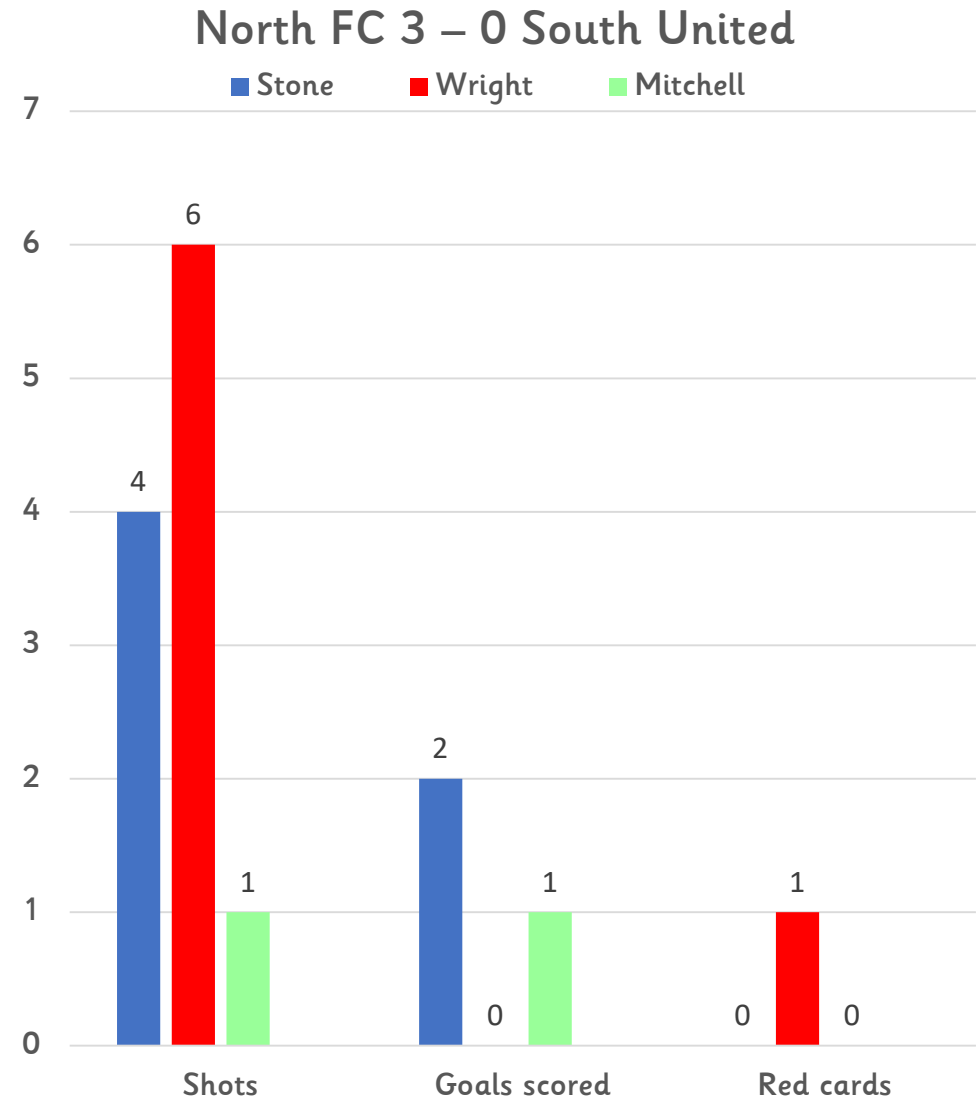
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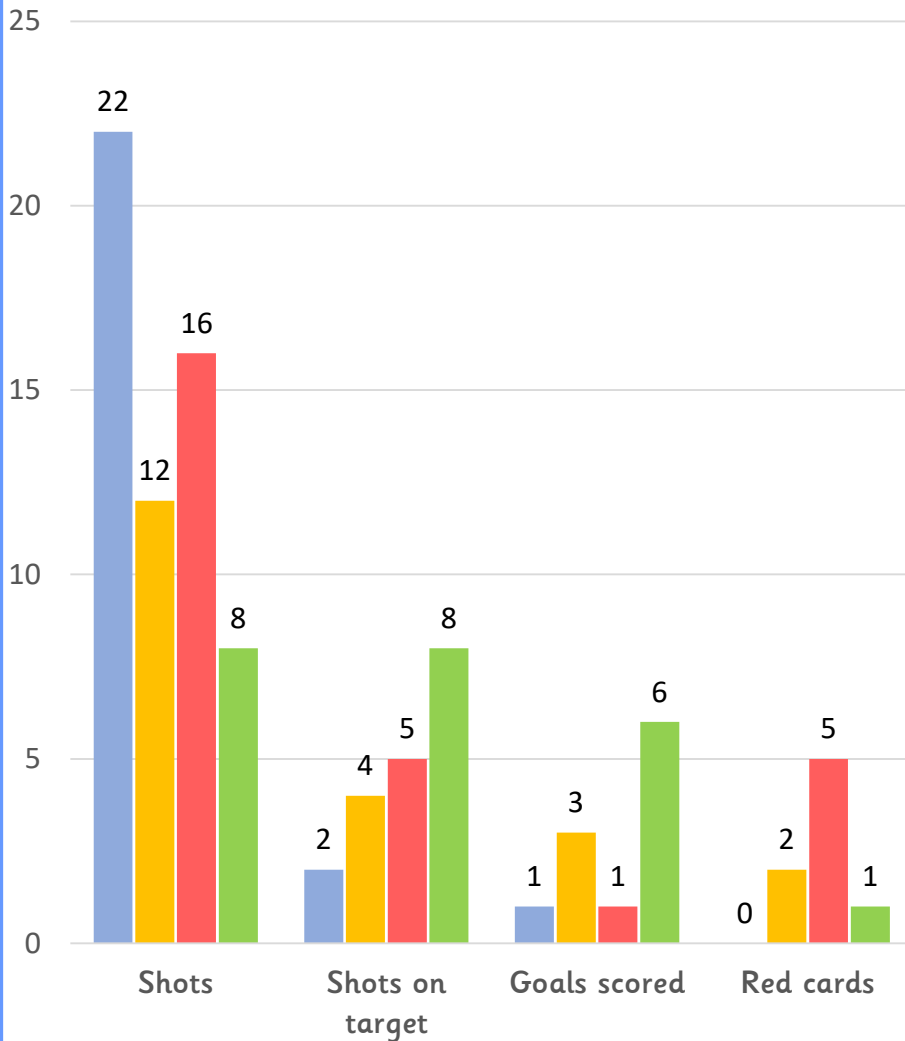
	Stone	Wright	Mitchell
Shots	4	6	1
Goals scored	2	0	1
Red cards	0	1	0

Now use the information from the table to fill in the bar graph.



Past Five Games

■ Delaney ■ Roberts ■ MacDonald ■ Jones



As the football coach, it is your job to choose the captain of the team. It is important to choose somebody who is a good team player, as well as a great footballer. Football coaches often use information called data to help inform their decisions.

What is the difference between Delaney's shots taken and shots on target? What does this number mean?

What is the difference between Jones's shots taken and shots on target? What does this number mean?

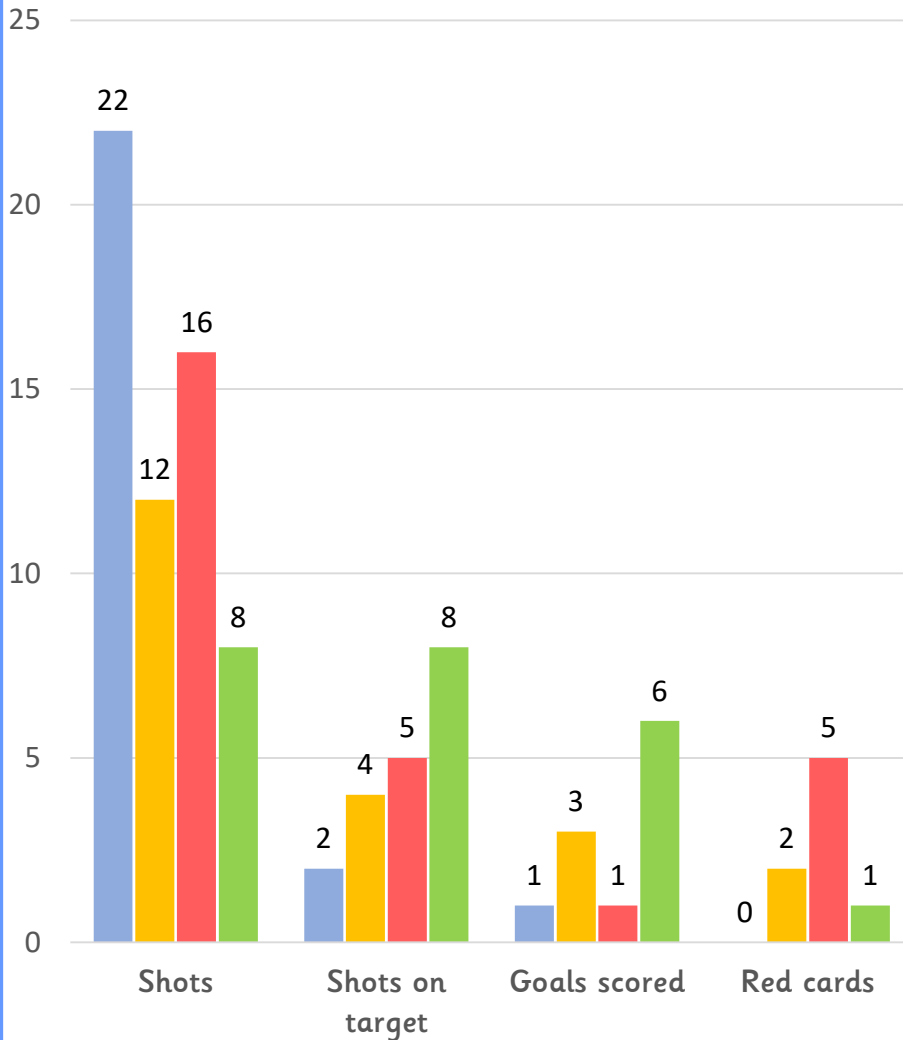
Based on the data given, who is the most accurate striker?

How many red cards have been given out over the past five games?

Based on the data, who would you choose as the captain? Why?

Past Five Games

■ Delaney ■ Roberts ■ MacDonald ■ Jones



As the football coach, it is your job to choose the captain of the team. It is important to choose somebody who is a good team player, as well as a great footballer. Football coaches often use information called data to help inform their decisions.

What is the difference between Delaney's shots taken and shots on target? What does this number mean?

$22 - 2 = 20$. Delaney has missed the target 20 times.

What is the difference between Jones's shots taken and shots on target? What does this number mean?

$8 - 8 = 0$. Jones has not missed the target on any shots he's taken.

Based on the data given, who is the most accurate striker?

Jones, as all of his shots taken have been on target.

How many red cards have been given out over the past five games?

$0 + 2 + 5 + 1 = 8$ red cards have been given out in total.

Based on the data, who would you choose as the captain? Why?

Jones, as he is the most accurate striker and has scored the most goals. Roberts has missed more shots and has more red cards than Jones. While Delaney has not gotten any red cards, he has missed most of his shots taken. MacDonald has gotten 5 red cards, so he is not suitable to be the captain.

Read the match report and use it to fill in the table.

West Bridge 4 – 1 East Athletic

West Bridge earned a comfortable victory last night, finishing 4 – 1 against East Athletic.

Xi started strong with goals in the first and eleventh minutes. All 8 of his shots found their target.

Rideau seemed to struggle throughout both halves, as only two of his 9 shots hit the target, neither scoring any goals.

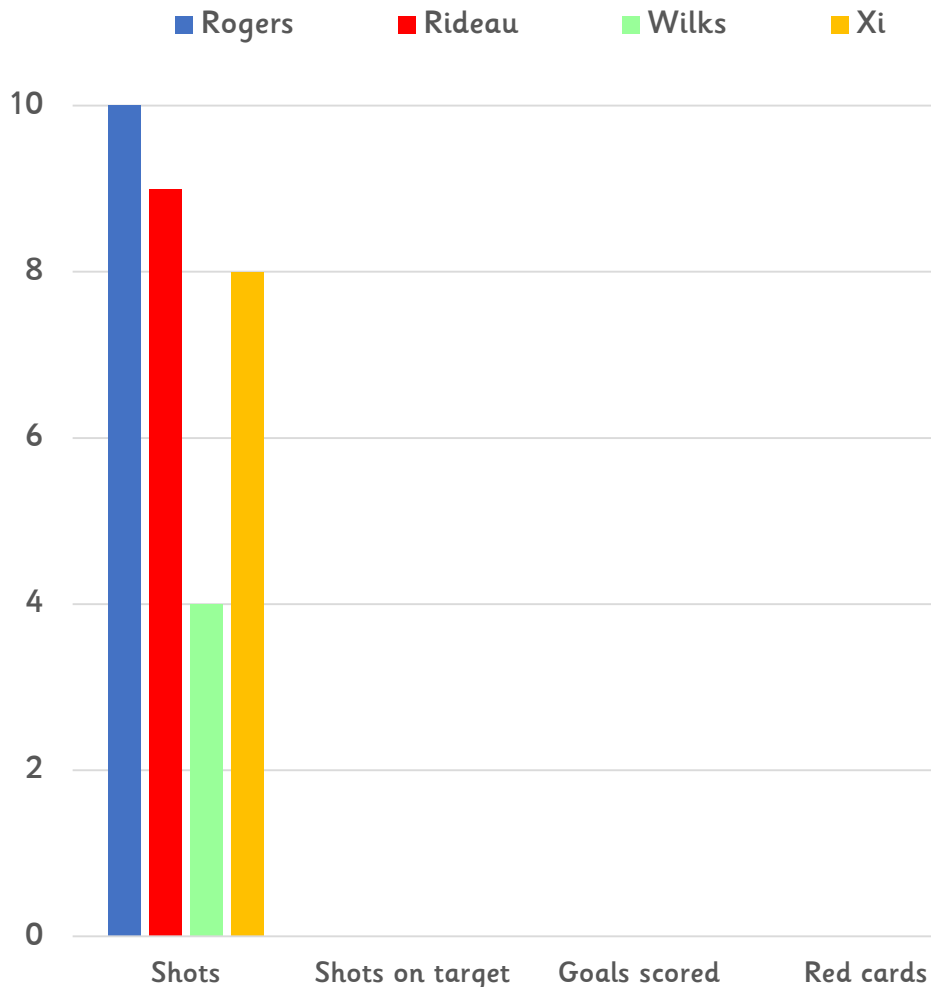
Rogers managed an amazing ten shots, half of which hit the target. He scored a fantastic two goals in the second half.

Wilks managed 4 shots, two of which were on target before being sent off with Rideau. These were the only two red cards handed out in the game.

	Rogers	Rideau	Wilks	Xi
Shots				
Shots on target				
Goals scored				
Red cards				

Now use the information from the table to fill in the bar graph.

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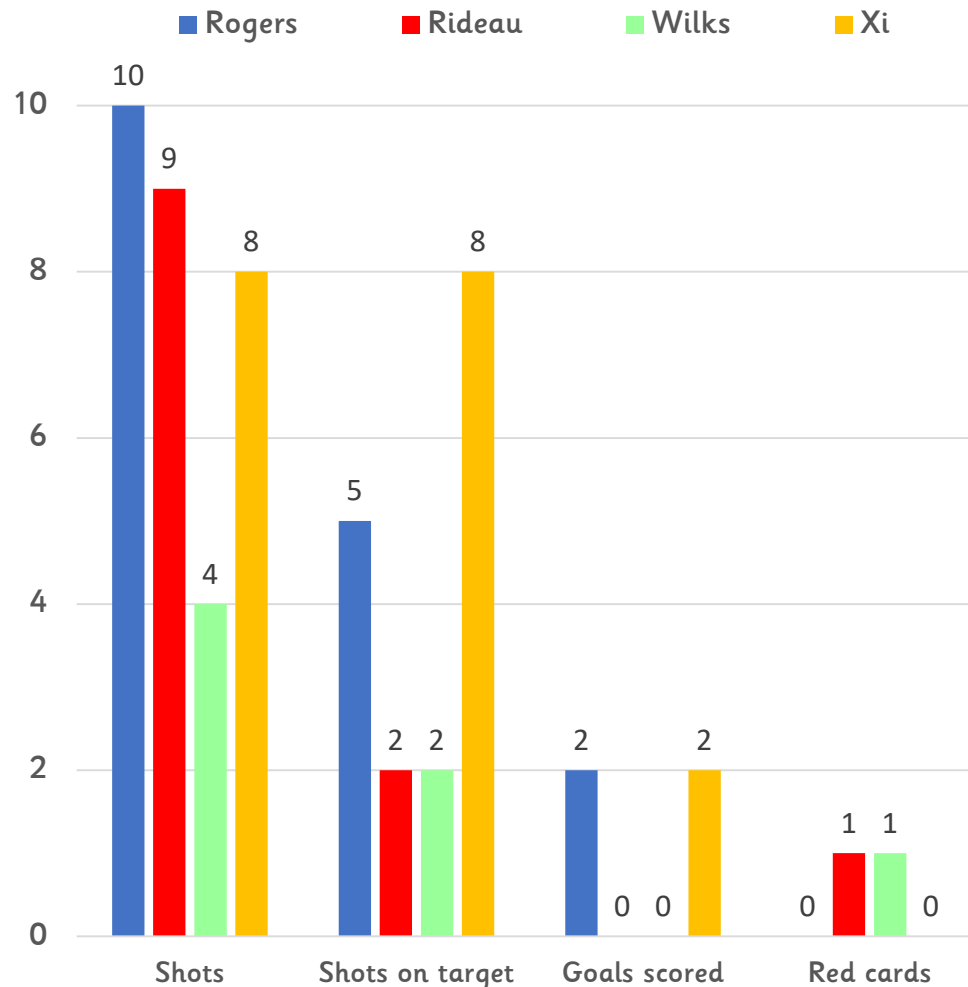
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Wilks managed 4 shots, two of which were on target before being sent off with Rideau. These were the only two red cards handed out in the game.

	Rogers	Rideau	Wilks	Xi
Shots	10	9	4	8
Shots on target	5	2	2	8
Goals scored	2	0	0	2
Red cards	0	1	1	0

Now use the information from the table to fill in the bar graph.

West Bridge 4 – 1 East Athletic



Read the match reports and use it to fill in the table.

West City 5 – 0 North River

West City rose to victory over North River this weekend, thanks to an outstanding performance by Singh, who scored a critical two goals in the first six minutes of play, assisted by Jenson and Hilton. All eleven of his shots fell on target.

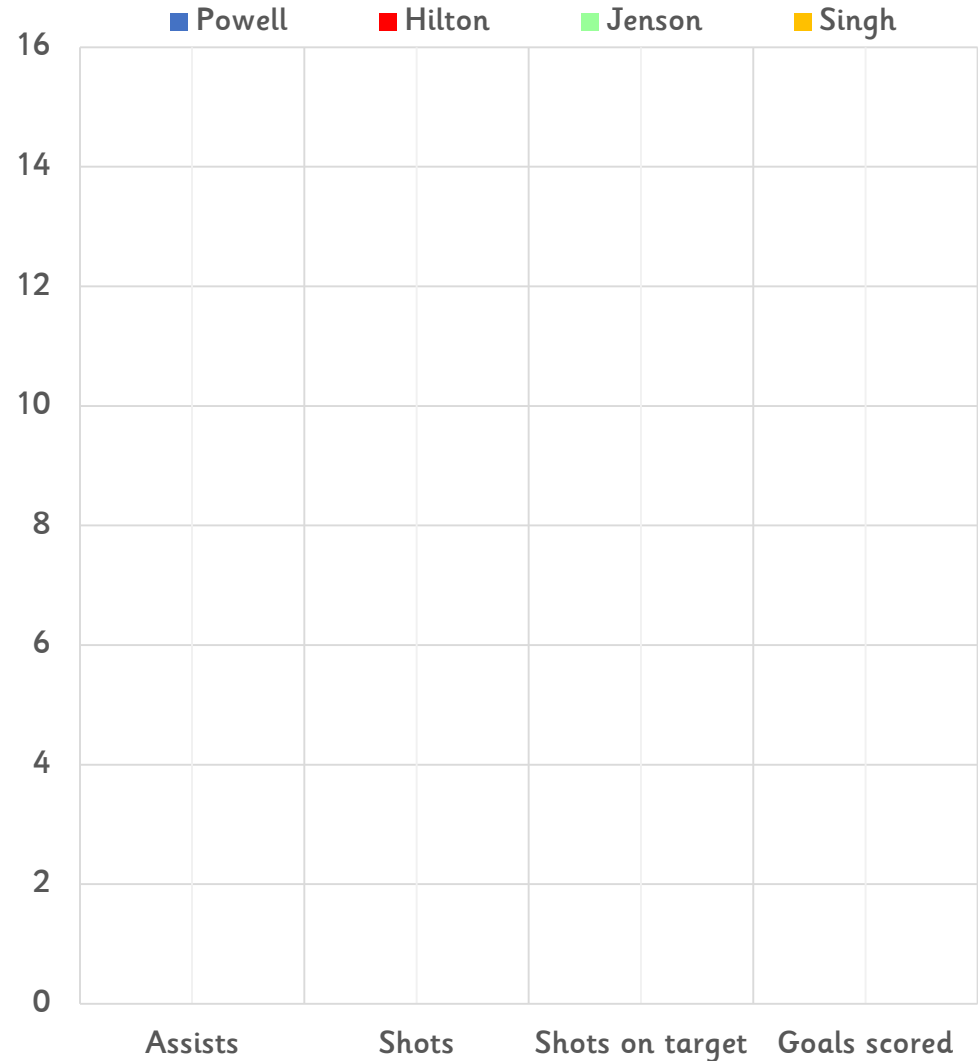
Powell gave North River reason to worry with an incredible 10 of his 15 shots hitting the target. He scored a quick goal just after half time, assisted by Singh.

Hilton and Jenson, the dynamic duo, were responsible for the final two goals of the game, with Hilton scoring both goals and Jenson assisting. A great result for Hilton, as his previous four shots failed to hit the target. Jenson managed seven shots throughout the game, but they all fell short.

	Powell	Hilton	Jenson	Singh
Assists				
Shots				
Shots on target				
Goals scored				

Now use the information from the table to create a bar graph.

West City Performance



Read the match reports and use it to fill in the table.

West City 5 – 0 North River

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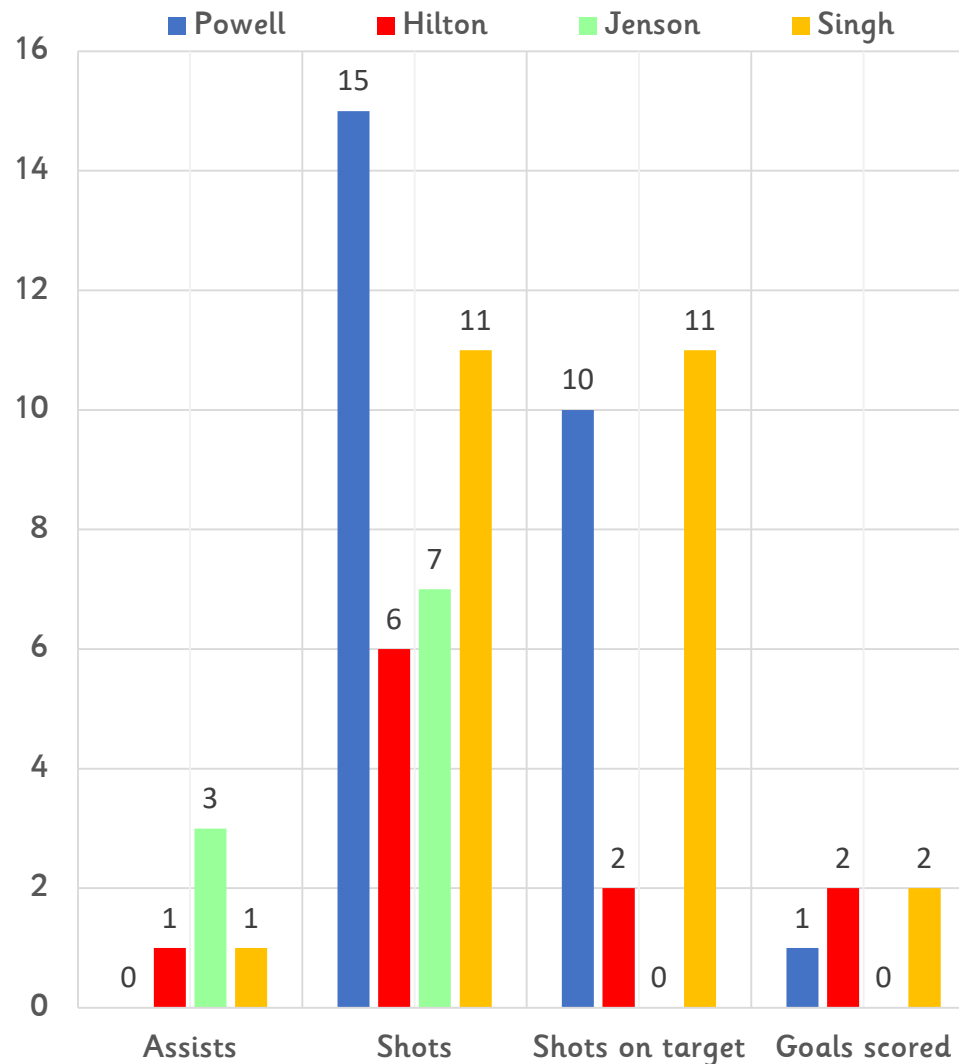
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	Powell	Hilton	Jenson	Singh
Assists	0	1	3	1
Shots	15	6	7	11
Shots on target	10	2	0	11
Goals scored	1	2	0	2

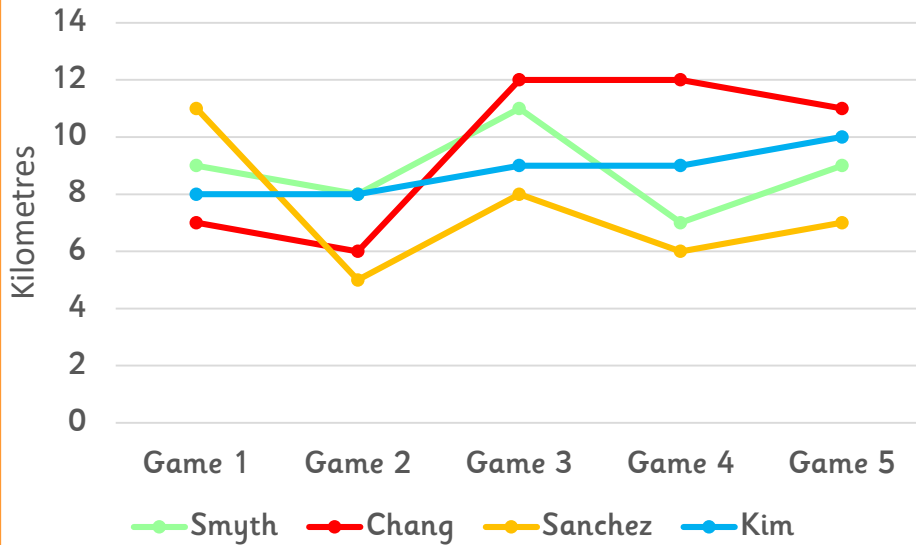
Now use the information from the table to create a bar graph.

West City Performance



There is an important tournament coming up for your team. They have been working hard on the pitch, and if a player covers a total distance of more than 10km in one game, they increase their chance of injury. You can't afford to lose your best players before the Cup, so you must decide who needs to rest. Use the line graph to help you fill in the table and find the total distance each player has covered.

Distance Covered Per Game



	Game 1	Game 2	Game 3	Game 4	Game 5	Total distance covered
Smyth						
Chang						
Sanchez						
Kim						

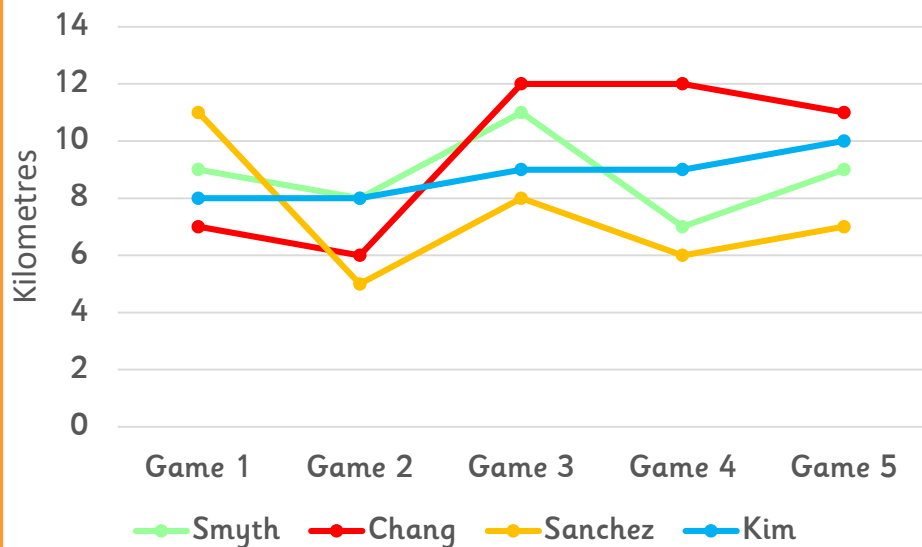
Who needs a rest straight away? Why?

Which player has covered the most distance in 5 games? Which player has covered the least distance? What is the difference between their total distances?

Did the team run more in Game 1, 3, or 5?

There is an important tournament coming up for your team. They have been working hard on the pitch, and if a player covers a total distance of more than 10km in one game, they increase their chance of injury. You can't afford to lose your best players before the Cup, so you must decide who needs to rest. Use the line graph to help you fill in the table and find the total distance each player has covered.

Distance Covered Per Game



	Game 1	Game 2	Game 3	Game 4	Game 5	Total distance covered
Smyth	9km	8km	11km	7km	9km	44km
Chang	7km	6km	12km	12km	11km	48km
Sanchez	11km	5km	8km	6km	7km	37km
Kim	8km	8km	9km	9km	10km	44km

Who needs a rest straight away? Why?

Chang because he has run the farthest overall and has run more than 10km in his past three games.

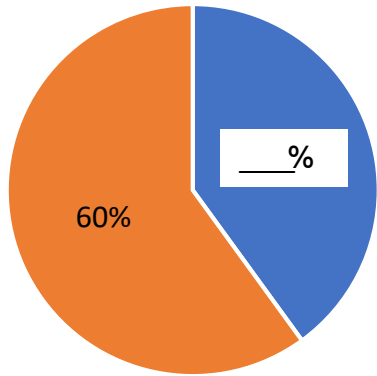
Which player has covered the most distance in 5 games? Which player has covered the least distance? What is the difference between their total distances?

Chang (48) – Sanchez (37) = a difference of 11km

Did the team run more in Game 1, 3, or 5?

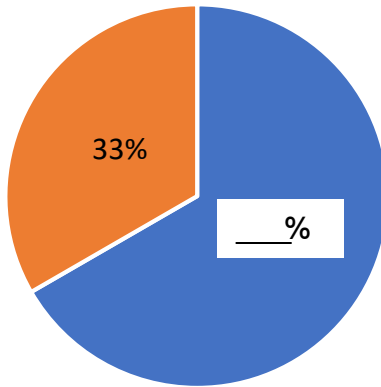
Game 1 = 35, Game 3 = 40, Game 5 = 37. They ran the most in Game 3.

Possession



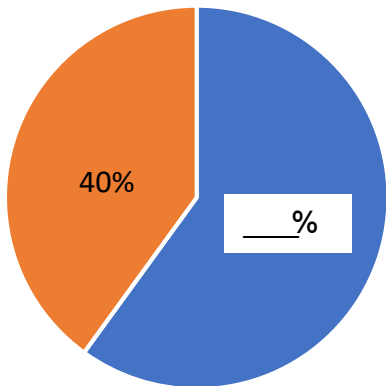
■ South FC ■ North City

Goals



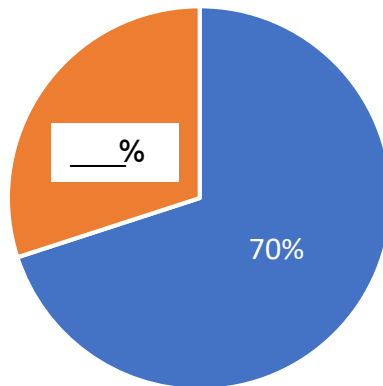
■ South FC ■ North City

Shots



■ South FC ■ North City

Passes



■ South FC ■ North City

Fill in the missing percentages in each pie chart.

Now use the data from the pie charts to fill in the following table. Round to the nearest whole number if necessary.

	South FC	North City	Total
Possession %			100%
Shots			5
Goals			3
Passes			200

Who scored the most goals? How many more did they score?

Who made the most passes? How many more did they make?

A football match lasts for 90 minutes. How many minutes did each team have possession of the ball for throughout the game?

Fill in the missing percentages in each pie chart.

Now use the data from the pie charts to fill in the following table. Round to the nearest whole number if necessary.

	South FC	North City	Total
Possession %	40%	60%	100%
Shots	3	2	5
Goals	2	1	3
Passes	140	60	200

Who scored the most goals? How many more did they score?

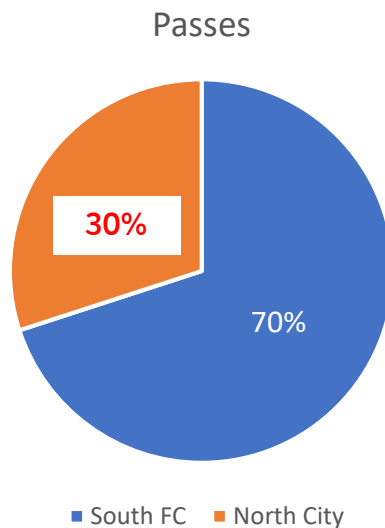
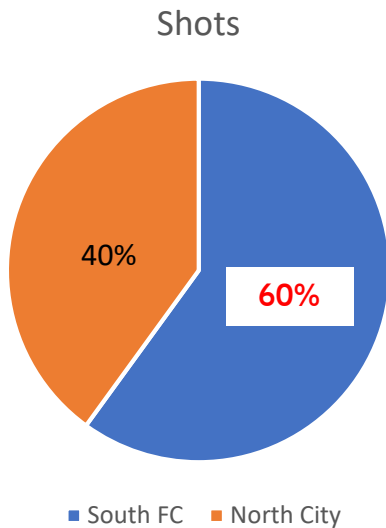
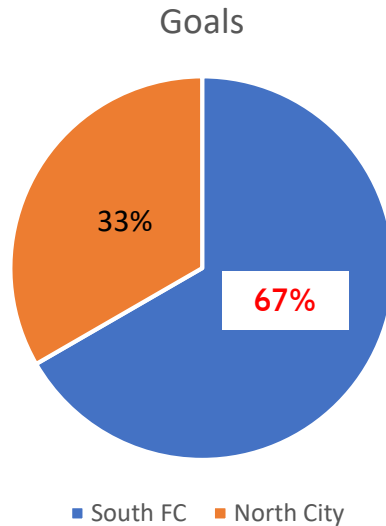
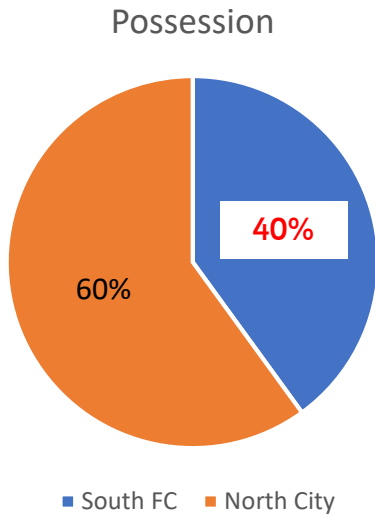
South FC scored two goals, one more than North City.

Who made the most passes? How many more did they make?

South FC made 140 passes, 80 more than North City.

A football match lasts for 90 minutes. How many minutes did each team have possession of the ball for throughout the game?

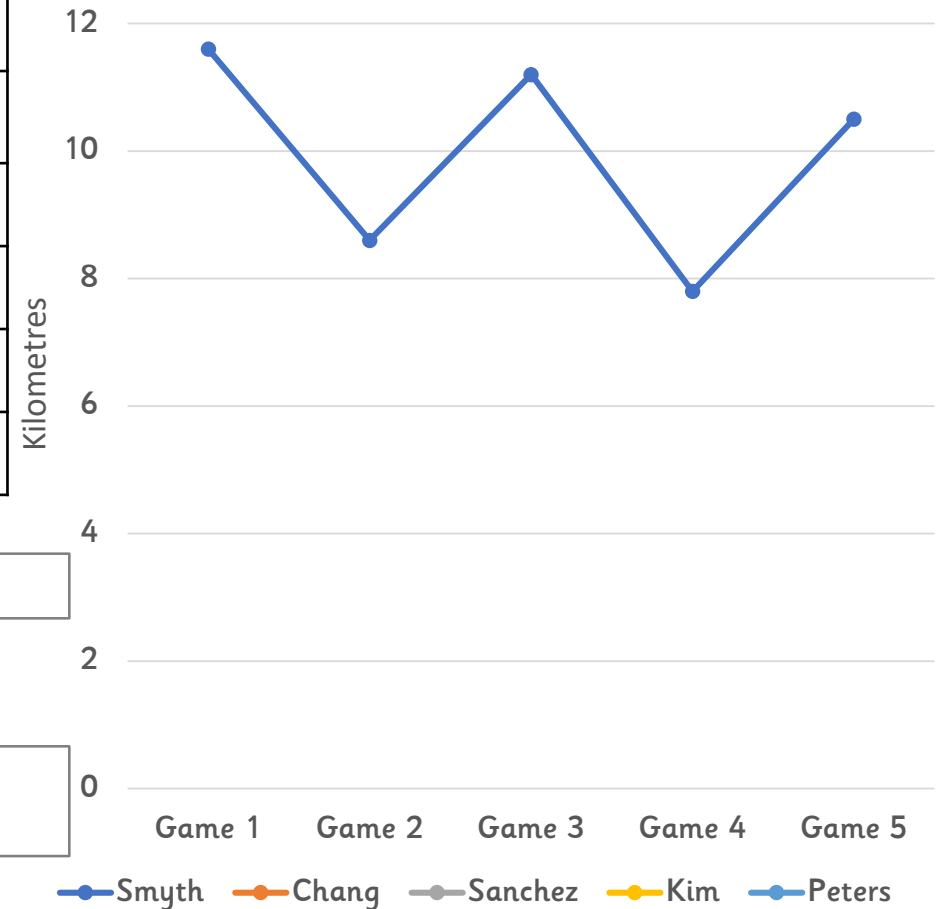
South FC had possession for 36 minutes. North City had possession for 54 minutes.



There is an important tournament coming up for your team. They have been working hard on the pitch, and if a player covers an average distance of more than 10km in one game, they increase their chance of injury. You can't afford to lose your best players before the Cup, so first calculate the average distance each player has covered to determine who needs a rest. Then use the information from the table to complete the line graph.

	Game 1	Game 2	Game 3	Game 4	Game 5	Average distance covered
Smyth	11.6km	8.6km	11.2km	7.8km	10.5km	
Chang	7.4km	6.8km	11.9km	11.2km	11.1km	
Sanchez	11.9km	5.4km	8.2km	6.2km	7.5km	
Kim	8.8km	7.9km	8.2km	9.4km	10.1km	
Peters	11.9km	11.7km	10.9km	7.8km	5.7km	

Distance Covered Per Game



Based on the data in the table, who would you rest up first? Why?

Does displaying the data on a line graph change your decision?

Why or why not?

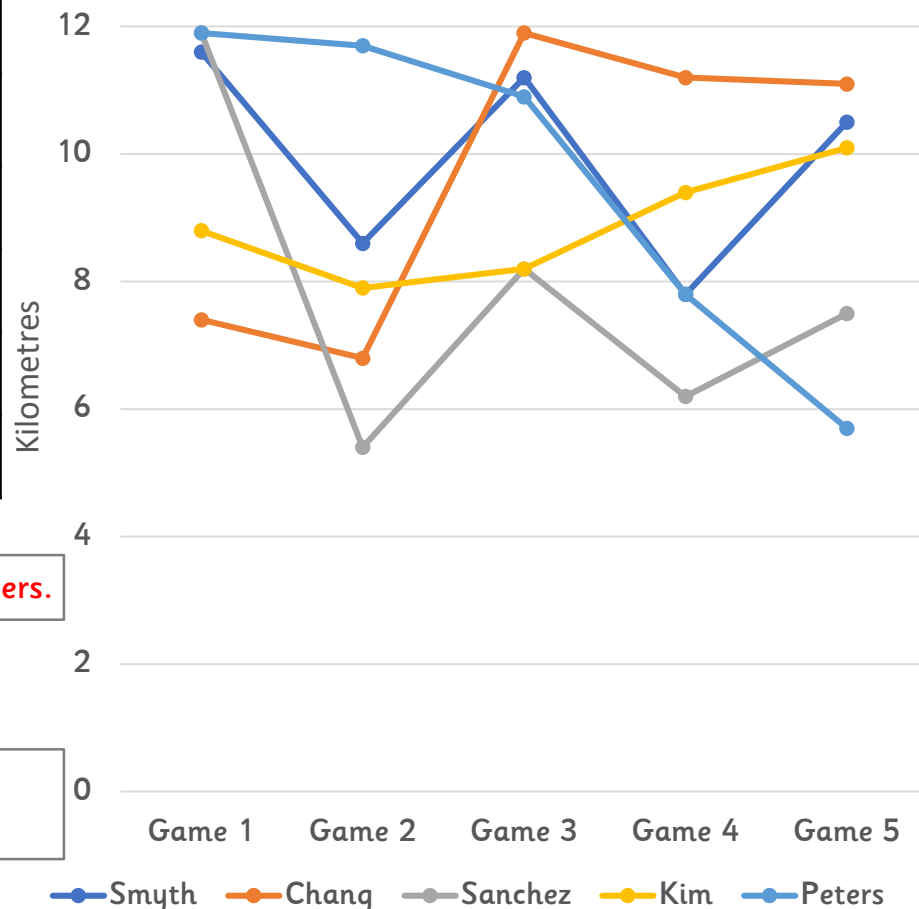
What is the average distance run by the team in each game?

Game 1 Game 2 Game 3 Game 4 Game 5

There is an important tournament coming up for your team. They have been working hard on the pitch, and if a player covers an average distance of more than 10km in one game, they increase their chance of injury. You can't afford to lose your best players before the Cup, so first calculate the average distance each player has covered to determine who needs a rest. Then use the information from the table to complete the line graph.

	Game 1	Game 2	Game 3	Game 4	Game 5	Average distance covered
Smyth	11.6km	8.6km	11.2km	7.8km	10.5km	9.94km
Chang	7.4km	6.8km	11.9km	11.2km	11.1km	9.68km
Sanchez	11.9km	5.4km	8.2km	6.2km	7.5km	7.84km
Kim	8.8km	7.9km	8.2km	9.4km	10.1km	8.88km
Peters	11.9km	11.7km	10.9km	7.8km	5.7km	9.6km

Distance Covered Per Game



Based on the data in the table, who would you rest up first? Why?

Smyth, as he has the highest average distance covered of all the players.

Does displaying the data on a line graph change your decision?

Why or why not?

Yes. It is clear that Chang has run the most in his last three games, and is in need of a break.

What is the average distance run by the team in each game?

Game 1 Game 2 Game 3 Game 4 Game 5