DATA SCIENCE

Data is important in football. It is used before the game to measure athletic performance and manage training programs. Data is also used during the game to track the number of passes or goal attempts.

Data on football players and games has also been used to create the FIFA© video games. Think of all the statistics that help you decide your team as a manager in real life or in a computer game.

Some players' data is in the stadium:

Matches:  **Goals:** 

Estimate the correct percentage from the options below that represents the proportion of goals scored to matches played for each of the players in the table below.

Tip: Think about what 1% and 10% of the number of matches would be.

2% / 8% / 21% / 54%

NAME	MATCHES	GOALS	%
ELLIOT	61	5	
CAREY	646	15	
MURRAY	426	91	
ATYEO	645	351	

Maths for the Match

On your tour of Ashton Gate Stadium, see how mathematics is all around us.

Maths effects our everyday lives. Think about the possibility of scoring a goal or the buildings we use or even the design of footballs.

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ASHTON GATE STADIUM TOUR

Maths for the Match

BRISTOL CITY 1894

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MATERIALS

Think about the material that the pitch is made from, what can you see?

The pitch is made from plastic grass *and* real grass – they are a **hybrid** working together. Scientists have researched the best surface for football players to use.

Plastics are a very useful group of materials as they can be made into many things.

If we cut a core from the pitch it would look like the picture below:

The type of plastic used in the grass is the same material used for the chairs, in water bottles and in the carpet in the stadium hallways.

STRUCTURES

Look up in the stadium. Can you see what the roof is made from? We can see that the back end of the roof is **fixed** in place, and the other end is 'floating' **free**.

We call this a **cantilever**. We can think of the roof as a beam with forces acting on it.

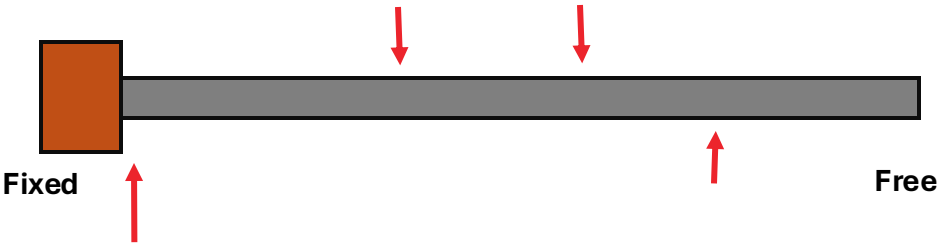
Can you label the arrows below with the forces?

Reaction Force

Lift from wind

Snow load

Weight of the roof



The structure must be stiff enough to not bend under the forces. Can you sketch above what shape the roof would be if it was too weak?