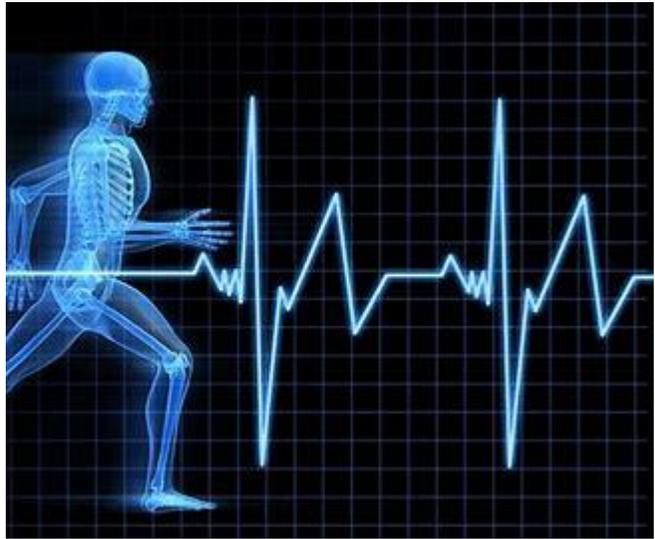


## The Science of Sport

Classification	The action of grouping something based on similar characteristics e.g. mammals have fur
Grass	Can be natural or artificial – grows and usually used for pitches
Growth	Increasing in size, developing physically
Variables	Something that changes or can be changed
Conclusion	To finish, or sum-up a text
Materials	The matter from which things can be made
Property	A characteristic of something – a solid has different properties to a gas
Fair Test	A test that controls all but one variable to answer a scientific question
Comparison	To consider the similarities and differences between two things
Force	A push or pull motion on an object
Air Resistance	A force that acts against gravity on falling objects
Friction	A resistance between two surfaces when they move against one another
Push	When force is placed on an object to move them away
Pull	When forced is placed on an object to bring it closer



Thinking deeper  
Which do you think is more beneficial for athletes – a healthy diet, exercise or natural ability?

### The big picture

**What I should know...**  
Year 2, 3, 4 and 5  
To know what animals and humans need in order to survive  
To know the importance of a healthy balanced diet.  
To know how forces can effect an object

**What I will know...**  
How to conduct a fair test  
How to change different variables  
To work scientifically  
To understand forced on an object

**Links to future topics...**  
  
Forces  
  
Air Resistance  
  
Gravity

## The Science of Sport

### Sports

Different sports have different properties of their kits that are important to making them work better. For example, a footballer needs a shirt that will keep him warm when he is playing in the cold, and will keep him cool after running around a lot. An ice-hockey player will need a hockey stick that can withstand huge force without breaking. The same goes for Paralympians and the different prosthetic supports that they might need to succeed.



### Forces in Sport

Forces are important in sport because the balls would simply not work if there were no forces. The force of the player's foot or hand on the ball is a **push** force and enables the ball to move. The ball then returns through **gravity**. Eventually, every item kicked, hit or thrown will return to Earth because of gravity. Other forces include: push, pull, air resistance and twist.

### Knowing forces

Famous footballers such as David Beckham and Cristiano Ronaldo know their forces! They know exactly how to hit a ball in order for it to do what they want.

### Adaptation and Grass

There are different types of grass that are fit for different reasons. There are some that are allowed to grow wild, and these aid in the natural structure of the world, and there are some that have been artificially bred so that they are stronger, more resilient and easier to repair when damaged by various different show types.

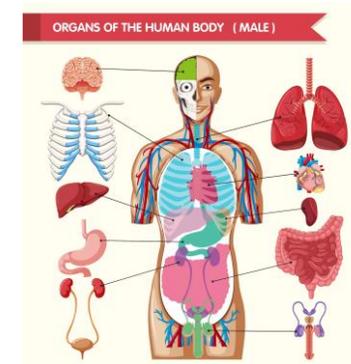
	Perennial ryegrass	Durable Drought hardy Vibrant colour all year round		Slender creeping red fescue grass	Shorter, slender and less vigorous creeping rhizomes Fine leaves
	Fescue grasses	Soft texture Tolerant of close-mowing		Chewings fescue grass	Upright growth Thin leaves Drought resistant
	Smooth-stalked meadow grass	Self-repairs		Brown top bent grass	Fine leaves

Which of these different grass types are best for a football pitch?

### The Human Body

The human body is the most important tool of any sports person. If they do not keep it in good order, then they will not be in their best condition.

Things that keep an athlete healthy include: a balanced diet, exercise, rest and making healthy choices such as not smoking. Athletes know their resting heart rate and what to do, eat and stop doing if things start going wrong.



### Key Questions

- Which tool is the most important for an athlete?
- What are the key items that an athlete needs to follow in order to maintain a healthy, balanced diet?
- What are the different grass types that can make a pitch or field for playing?
- What are the forces?
- Define **gravity**
- Why do different sports need different equipment?