

College Taster Pack
Sport





Welcome

We are delighted that you will be joining The Oxfordshire Business & Enterprise School (affectionately known as TOBES). Please complete this pre-learning pack to help prepare you for your Sport course.

The Sport Study Programmes are part of our award winning Futures courses. These include the same core topics and some elements of these are included in this pack to get you started. The course specific modules will be explained to you when you start college in September.

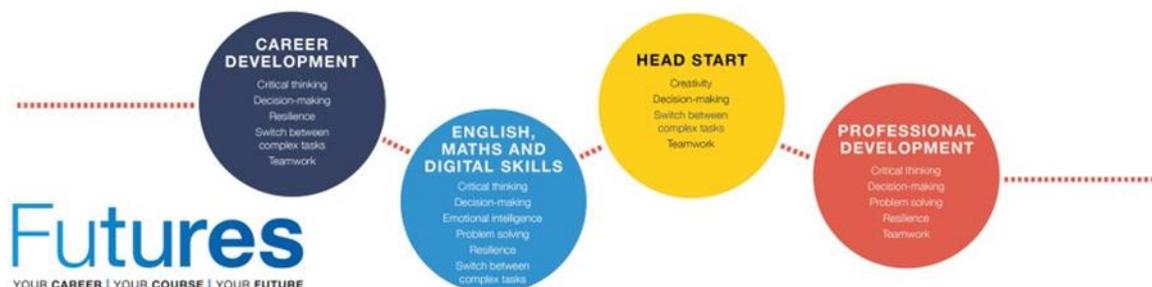
Our sport experts teach industry-trending practical skills that build up your knowledge and resilience, provide real networking opportunities and connect you with work experience placements. Our Study Programmes include a mix of traditional teaching, employer engagement and social action projects with a high level of community engagement.

We will be working together with you to help develop these top 10 skills alongside achieving your qualification.

Top 10 skills

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- Critical thinking
- Creativity
- Decision-making
- Emotional intelligence
- Negotiation
- Problem solving
- Resilience
- Switch between complex tasks
- Teamwork
- Virtual collaboration



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Tasks

Challenge 1: Gaseous exchange home edition

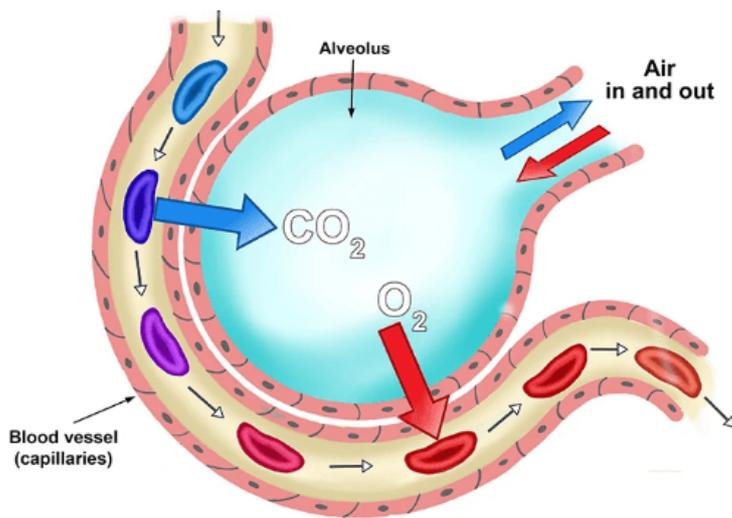


Figure 1: Illustration of gaseous exchange.

Figure 1: An image providing a visual representation of how **air travels** between the **capillaries** and the **alveoli** in the lungs. Your task is to **recreate** this image using items from **your house**. Below is an **example** of how you can make **your own version** of gaseous exchange.

Key:		
Alveoli	=	Shoe rack
Capillaries	=	Socks
Oxygen	=	Colourful trainers
Carbon Dioxide	=	Black shoes



Task: Make you own gaseous exchange model

Stage 1:



Find any object in your house to act as your Alveoli. As you can see, I have used a shoe rack.

Create your own capillary using socks or an alternative object.

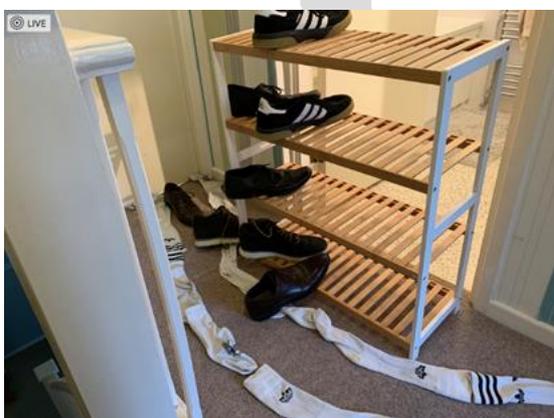
Annotate your belongings and provide a key.



Stage 2: Breathing in

Find a specific item to use as your oxygenated blood heading towards the heart and away from the alveoli.

I have used coloured trainers, but you can use anything as long as they are the similar items and easily recognisable.



Stage 3: Breathing out

Find a specific item to use as your deoxygenated blood travelling away from the heart to the alveoli.

I have used black shoes to show a lack of oxygen/colour, but you can use anything as long as they are easily recognisable and different from the oxygenated blood.



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Stage 4: The complete set

Put all of your items together to demonstrate your design and create gaseous exchange.

Include a description of the process of gaseous exchange including the direction of the O_2 and CO_2 and explain why this process is important.

Gaseous exchange is...

If you need any further support, please follow this link to a useful video:

<https://www.youtube.com/watch?v=aA6-ZA-7YJA>



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Challenge 2: Maths in Sport



In the Olympic and Paralympic Games, medals are awarded for the best performances in each event. We would like you to use different criteria to produce your own record document.

Consider some of the questions below to write your own Alternative World Record Book.

You will need to do some research to answer these questions, and you will need to make some estimations and approximations. You may also need to refine the questions to make them more precise. If you can't determine an exact value for certain contexts, you could try to compute upper or lower bounds to allow you to compare.

In which Olympic or Paralympic event does:

- A human travel fastest? How fast?
- An object travel fastest? How fast?
- An object travel highest? How high?
- A human expend the most calories? How many?
- A human react fastest? How fast?
- A human experience the greatest acceleration or deceleration? How much?
- An object experience the greatest forces, stresses or strains? How much?



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Create your own Alternative Record Book, together with your evidence and calculations.

Can you think of any other categories to include in your Alternative World Record Book?

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