The Ellesmere Port C of E College

Part of the Frank Field Education Trust

Year 12 Biology SMR
Learning Programme 4

The LORIC skill focus for this LP is: INITIATIVE.
The Moral Virtues focus for this LP are: INTEGRITY and GRATITUDE.

Integrity - Having strong moral principles. I will show integrity by taking responsibility for my actions.
Gratitude - Feeling and expressing thanks. I will show gratitude by saying please and thank you.

What will I be learning about in this Learning Programme?
How specialised exchange systems in animals are structured for their function.

Where have I seen this learning before?
You have learnt about breathing, the blood and the heart in KS3 and GCSE.

What could I use it for?
You will use this again if you study a bachelor of science in physiology or medicine.

Literacy Non-Negotiables:
- Capital letters must be used at the start of sentences and for the first letter of proper nouns
- Full stops must be used at the end of a sentence
- Question marks must be used at the end of a question
- Apostrophes should only be used for possession or omission
- Days of the week and months must be spelled correctly
- Key words must be spelled correctly
- Vocabulary to be taught using the Frayer model

In LP4.1, I will know: 09/03/26 - (WK 2)	Frayer Model Words	Homework
how to complete an assessment of your learning so far; how to review your assessment to close the gaps in your knowledge.	assessment	Revision for assessment.

In LP4.2, I will know: 16/03/26 - (WK 1)	Frayer Model Words	Homework
the need for specialised transport systems; the structure and functions of arteries, arterioles, capillaries, venules and veins.	circulation	Exam questions on blood vessels.

In LP4.3, I will know: 23/03/26 - (WK 2)	Frayer Model Words	Homework
the differences in the composition of blood, tissue fluid and lymph; the role of haemoglobin in transporting oxygen. Extended Task.	haemoglobin	Exam questions on blood.

PRT Task 1

In LP4.4, I will know: 13/04/26 - (WK 1)	Frayer Model Words	Homework
how carbon dioxide is transported in the blood and the impact this has on the body; the Bohr Effect as changes due to carbon dioxide and different oxygen carrying proteins such as myoglobin and foetal haemoglobin.	dissociation	Exam questions on oxygen transport.

In LP4.5, I will know: 20/04/26 - (WK 2)	Frayer Model Words	Homework
the external and internal structure of the mammalian heart; how to carry out PAG2: heart dissection.	myocardial	Exam questions on the structure of the heart.

In LP4.6, I will know: 27/04/26 - (WK 1)	Frayer Model Words	Homework
the stages of the cardiac cycle; how to use electrocardiograms to diagnose conditions. Extended Task.	electrocardiogram	Exam questions on interpreting electrocardiograms.

PRT Task 2

In LP4.7, I will know: 04/05/26 - (WK 2)	Frayer Model Words	Homework
how the cardiac cycle is coordinated by looking at the electrical structures within the heart; how the control of the cardiac cycle links to homeostasis including the maintenance of tissue fluid.	cardiac cycle	Exam questions on the circulatory system.

Resources to support learning:
https://www.youtube.com/watch?v=iGcUcK7Vm_o
https://www.youtube.com/watch?v=J8MVOwbzW14
Knowledge organiser, Synergy.

FFET Award Challenge for this Learning Programme:
Create a fitness programme for someone to improve their cardiovascular fitness, using scientific knowledge to explain your reasoning.