The Sutton Academy

Knowledge Rich Curriculum Plan

Level 3 BTEC sport – Topic C Respiratory system

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
Lesson 1 – structure of respiratory system and mechanics of breathing	• Students will know the structure and components of the respiratory system (nasal cavity, epiglottis, pharynx, larynx, trachea, • bronchus, bronchioles, lungs, alveoli, diaphragm, thoracic cavity), Intercostal muscles (external and internal). • Students will know the Mechanisms of breathing (inspiration and expiration) at rest and during exercise. • Students will know that mechanism means established process by which something takes place or is brought about.	Mechanism Inspiration Expiration	• Students will already need to know what are lungs are used for • Students will already need to know how muscles work in pairs • Students will already need to know the bones that surround our vital organs	•
Lesson 2 – Control of breathing and gaseous exchange	• Students will know the function of the respiratory system in response to exercise and sports performance. • Students will know that function means the purpose of something Students will know how breathing rate is controlled: • Neural (medulla oblongata as the respiratory centre in the brain). • Chemical (chemoreceptors detect change in blood carbon dioxide concentrations and changes in pH). • Students will know the process of Gaseous exchange. • Students will know that gaseous means relating to or having the characteristics of a gas • Students will know that diffusion means is movement of gases from a region of higher concentration to a region of lower concentration	Function Gaseous Exchange Diffusion Neural Chemical	• Students will already need to know the pathway of air to the alveoli • Students will need to know what the alveoli are • Students will need to already know the mechanics of breathing	•

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
Lesson 3 – Lung volumes	Students will know the different measurements for lung volumes and how lung volumes changes in response to exercise and sports performance. • Tidal volume • Vital capacity • Residual volume • Total lung volume • Minute ventilation (VE) Students will know that a spirometer trace is used to measure lung volumes.	Spirometer trace	• Students will already need to know the structure of the respiratory system • Students will already need to know the mechanics of breathing	•
Lesson 4 – Responses of the respiratory system to exercise	Students will know that main responses of the of the respiratory system to an exercise session are: • Increase in breathing rate. • Increased tidal volume.			•
Lesson 5 – SSS feedback				•
Lesson 6 – Adaptations of the respiratory system to long term exercise	Students will know the impact of adaptation of the system on exercise and sports performance. • Increased vital capacity. • Increased strength of the respiratory muscles. • Increase in oxygen and carbon dioxide diffusion rate.		• Students will already need to know what vital capacity is • Students will already need to know what muscular hypertrophy is • Students will already need to know what diffusion is and where this takes place	•

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
Lesson 7 – Respiratory system exam question practice				•
Lesson 8 – Additional factors affecting the respiratory system	Students will know the additional factors affecting the respiratory system and their impact on exercise and sports performance. • Asthma - Condition where the airways become restricted, • Effects of altitude/partial pressure on the respiratory system Student will know that partial pressure means the pressure exerted by a (specified) component in a mixture of gases. Students will know that altitude means at a great height for example up a mountain	Asthma Partial pressure Altitude		•
Lesson 9 – Respiratory system EOU test				•