Chapter 5 - 7: Physiology

Review topics

Section	Issues *Ways the course connects to the world around me…*	Concepts *Things I need to be able to explain are…*	Skills *Things I need to practice are…*
Chapter 5 Energy Systems	A. How do we get energy from food?	A. What are the 3 energy pathways and when are they activated? B. What chemicals are involved in each of the 3 energy pathways? C. How many molecules of ATP are created in each of the energy pathways? D. What are the 3 types of muscle fibres?	A. Identify scenarios where the 3 different energy systems are activated B. Identify scenarios where the different types of muscle fibres are used.
Chapter 6 The Nervous System	A. Is there such a thing as a no-brainer? B. Reflex Lab	A. How does the nervous system work? (in terms of the CNS, PNS, Autonomic, Somatic, Parasympathetic, Sympathetic) B. How does my body respond to stimulus (spinal and cortical reflexes)?	A. Describe the pathway that a signal travels in various scenarios B. Label the components of the reflex arc
7.1 The Cardiovascular System		A. How does the cardiovascular system transport oxygen in the body (circulatory, vascular system)? B. How is circulation measured? (blood pressure, Q, SV, HR) C. What effects do exercise and training have on the cardiovascular system	A. Describe the structure of the heart and vascular system B. Describe the makeup of blood
7.2 The Respiratory System	A. Can you increase the size of your lungs with exercise? B. Lung Capacity Lab	A. How does my body get oxygen into my blood? B. How is ventilation measured?	A. Describe the structure of the respiratory system (conductive, respiratory zones, external, internal and cellular respiration)

Name: _____ PSE 4U1 Date: _____

7.3 The Cardiorespiratory System	A. Why should we warm up and cool down when we play sports? B. VO_2max Lab	A. How is the transport of oxygen measured? (VO2, VO2max, VCO2, RER) B. What happens in the transition between rest and exercise and back to rest? (thresholds, oxygen deficit and EPOC)	A. Describe how VO2max can be found in a laboratory environment

Review questions

Here are some questions to help with your studying for the test. This does not cover everything in the chapters but it's a good start!

1. Summarize each of the 3 energy pathways in tems of what happens, when they are activated and how much ATP is created. Include: carbohydrates, glucose, ATP, ADP, phosphate, phosphocreatine, creatine, lactate, pyruvic acid, lactic acid
2. Give an example of an athlete that would have more slow twitch fibres and an athlete that would have more fast twitch fibres. Explain.
3. Give an example of a no-brainer.
4. Describe the pathway an signal would travel if:
   - You stub your toe
   - You try to hit a tennis ball with a racket
   - You step on a piece of glass
   - You try to grab a ruler that your friend drops in a reflexes lab
   - You see a grizzly bear in a forest and start to run away

   Make sure to include the following: (CNS, PNS, autonomic nervous system, somatic nervous system, parasympathetic nervous system, sympathetic nervous system)
5. Make a quick diagram of the heart (including 4 main quadrants) and label the pathway that blood flows
6. What types of cell are blood made up of? What is the difference between oxygenated and deoxygenated blood?
7. Describe all the ways your body gets deoxygenated blood back to the heart
8. What does Q measure and how is it calculated?
9. What locations do external, internal and cellular respiration occur at?
10. What is the difference between tidal volume, residual volume, vital capacity and total capacity?
11. What is RER and what does it indicate?
12. How can you increase your VO2max? Can you increase your lung capacity?
13. What effect on the OBLA curve does training have?
14. What is the difference between an oxygen deficit and excess oxygen? Where do they occur and why?
15. Why should we warm up and cool down when we do sports?