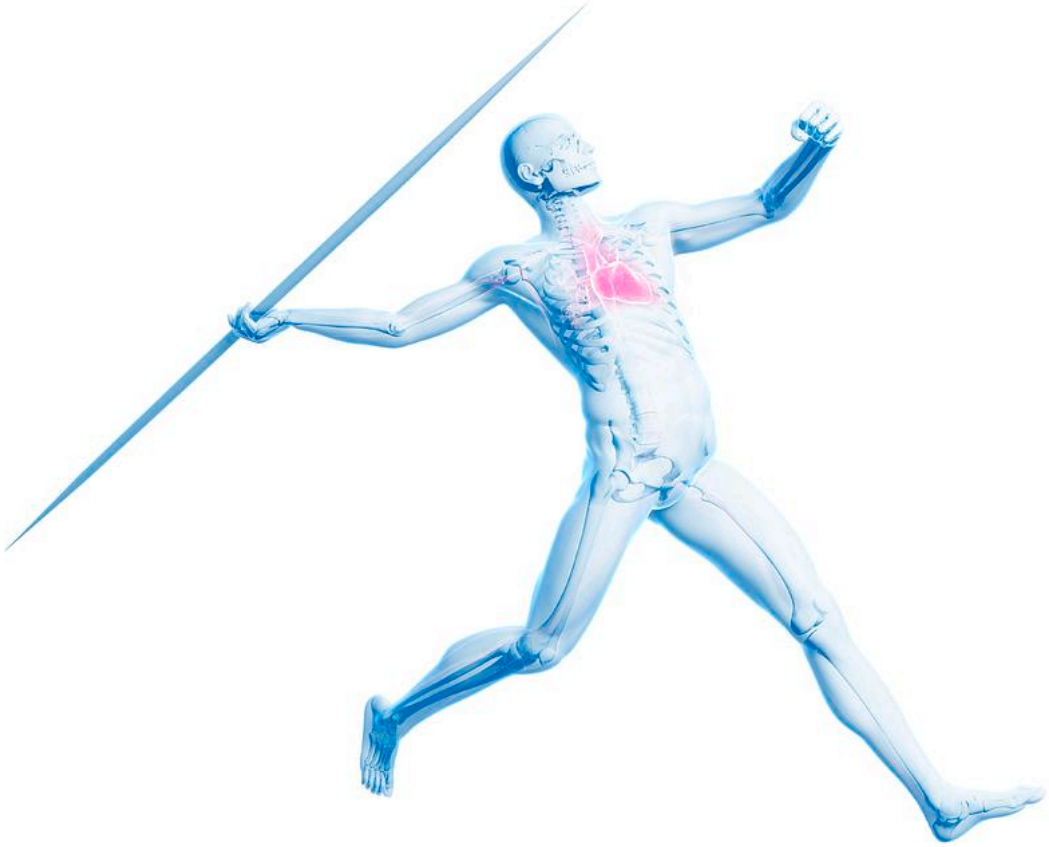
Unit 1: Anatomy and Physiology
Transition work – week 6



Name: _____

Section E – The effects of exercise and sports performance on the <u>Energy</u> systems

Energy is required to make muscle fibres contract. The energy is obtained from the breakdown of foods, particularly carbohydrate and fat. The body maintains a continuous supply of energy using ***adenosine triphosphate (ATP).***

Stored ATP - *ATP is stored in the muscle cell*

TASK: Draw an ATP molecule

TASK: Describe how an ATP molecule released energy

ATP-PC System

TASK: Answer the following questions about the ATP-PC system

1. What does PC stand for?

2. Is this system aerobic or anaerobic?

3. How long does the ATP-PC system last for?

4. Why does it only last this long?

5. How does the ATP- PC system create energy

6. What sports would use this system? What kind of actions will be fuelled by this system?

7. How long does it take this system to recover?

Lactate System

The lactate system is a short-term energy system used to meet the demands of higher intensity over a longer period.

1. Is the system aerobic or anaerobic?

2. What fuel does this system use to create energy?

3. How long does this system last?

4. Describe the process of **anaerobic glycolysis**.

5. What is the by-product of this system? Is it good or bad? Why?

6. How long does it take this system to recover? Why?

7. How many ATP are produced by this system?

Aerobic System

*The aerobic system is the long-term energy system. It only works if **oxygen** is available. The aerobic energy system is broken down into 3 processes.*

TASK: Describe each stage of the aerobic system

Aerobic Glycolysis

Krebs Cycle

Electron Transport Chain

How many ATP are produced by this system?

TASK: Complete the flow diagram for the aerobic system