

Subject: **Physical Education**

Level: **Form Two**

Areas: **Physical Fitness and Wellness**

Topic/Theme: **The Body Systems**

The Circulatory System

The Effects of Physical Activity on the Circulatory System

- **Key Points:**

- The circulatory system transports blood to all parts of the body.
- It provides the muscles with the necessary oxygen and nutrients needed for energy.
- Participating in physical activities affect the way our circulatory system works.
- Our organs and tissues in the system adapt to the stress of physical activity/exercise and this result in changes.
- Some of these changes occur during and after we exercise.
- Other changes are long term and occur due to regular participation in physical activities.

Immediate Effects of Physical Activity on the Circulatory System

- Heart rate increases rapidly
- The heart muscle contracts more forcefully
- Stroke volume increases
- Blood circulation speeds up and cardiac output increases
- More oxygenated blood is sent to working muscles
Deoxygenated blood returns faster to the heart
- Blood flow to working muscles increases

Long Term Effects Physical Activity on the Circulatory System

- The heart muscle grows and strengthens
- The heart muscle and the lungs function more efficiently in terms of stroke volume and heart rate
- Resting heart rate decreases
- Risk of heart disease lessens

Activity 2. Research

Conduct research on the effects of physical activity on the circulatory system to respond to the following questions. You may consult textbooks, websites etc.

1. Explain what causes our heart to beat faster as we begin to exercise?
2. During exercise blood circulation speeds up and cardiac output increases.
Calculate John's:
 - a) Cardiac output, if his stroke volume is **63 ml** and heart rate is **71 bpm**
3. What does a lower resting heart rate due to participation in regular physical activities mean?
What does this suggest about an athlete?