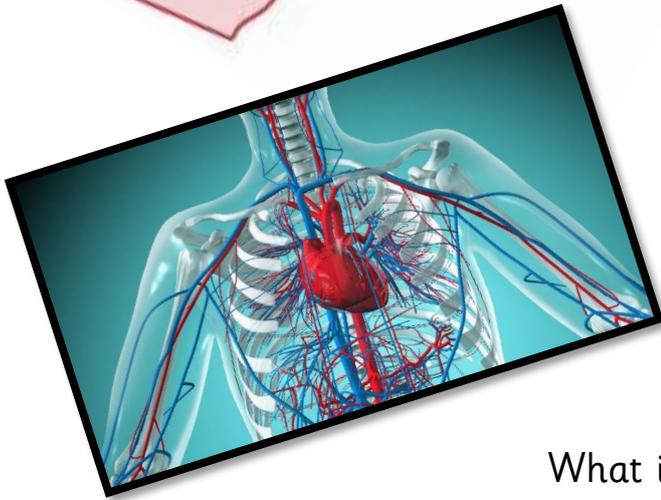
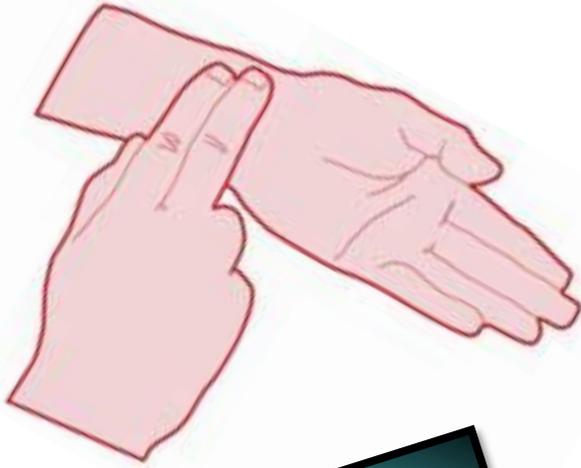
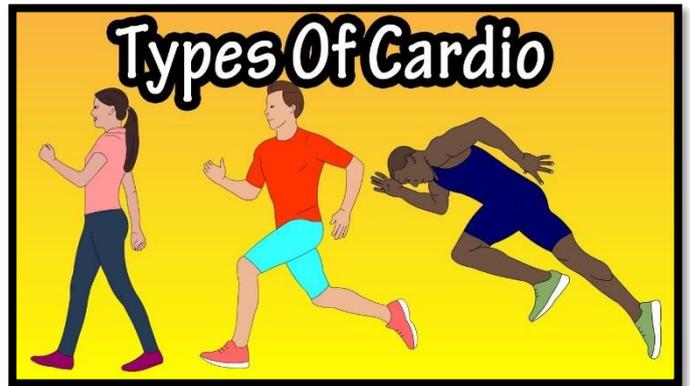


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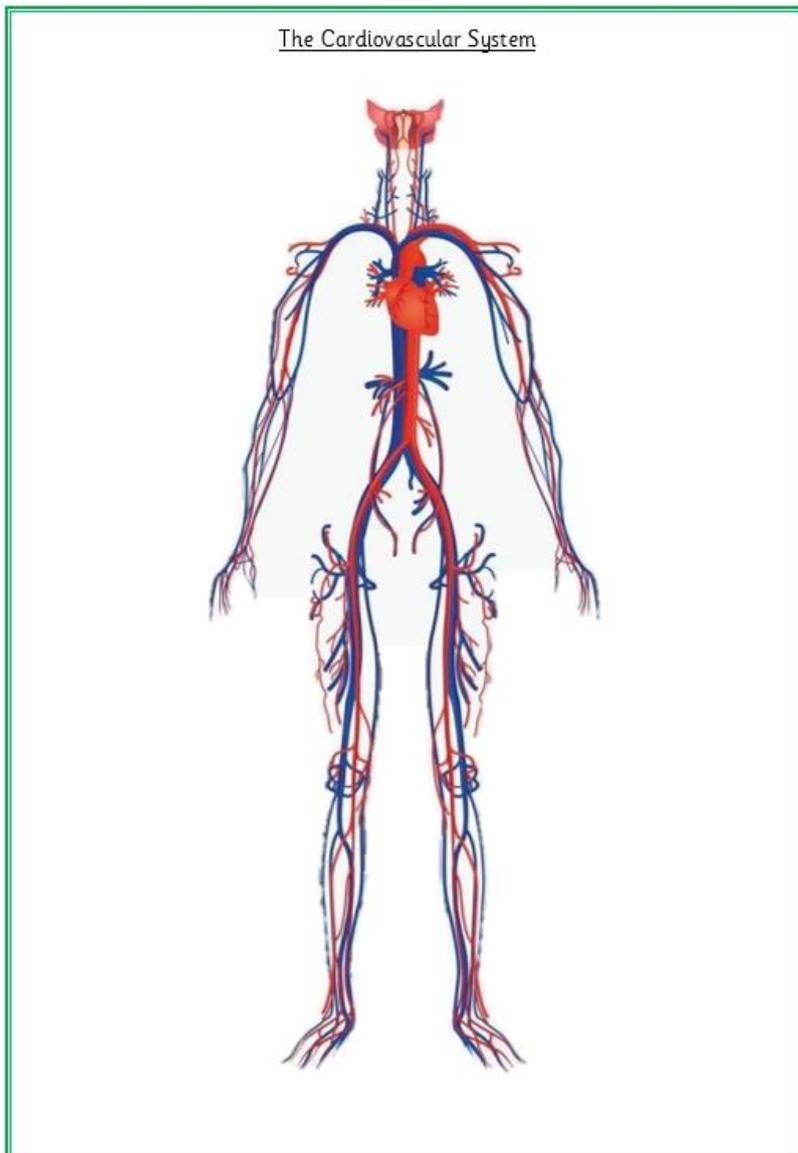
LO: To investigate how exercise affects your pulse rate.



What is a pulse?



Your task is to illustrate a diagram of the human circulatory system and annotate how an increase in exercise can affect the pulse rate.



You will have a template, just like this one, supplied to you for this task. If you would rather, you can draw your own circulatory system but it must include everything between the head and the feet.

The cardiovascular system is made up of three key areas: the heart, the blood vessels (veins/arteries/capillaries) and the blood that flows through them.

Using your sheet, label the key areas/veins/arteries. These must include, but are not limited to:

- The heart,
- The main artery that transports blood from the heart to the body,
- One main artery in the arms, legs and torso.

After having labelled your cardiovascular system, you will also need to document some additional information concerning heart rate. On a separate piece of A4, explain how a heart rate is measured. This should include the digital methods by which heart rate is measured as well as the way in which you would establish your heart rate should you not have any equipment on you.

You will also need to include a section which outlines the fundamental difference between the resting heart rate and the healthy, 'expected' heart rate that a person would experience when partaking in moderate exercise (leisurely jogging or swimming).

After having completed all of these objectives in detail, double check you have included some, if not all, of the terminology below:

cardiovascular	circulatory system	aerobic	aorta
artery	blood pressure	cardiac	exercise stress test
hypotension	vascular		

Questions to Consider

What is a Pulse?

Your pulse is your heart rate, or the number of times your heart beats in a minute (60 seconds). The unit of measure for this is bpm (beats per minute). Your pulse rate is lower when you are resting as your body requires less energy, however, when you begin to exercise, the amount of oxygen your body requires to convert into energy increases. Thus, the rate at which your oxygenated blood needs to be pumped around your body becomes greater. This ensures that the muscles get the energy they need to maintain the exercise your body is undergoing.

What is the Cardiovascular System?

The cardiovascular system is a vast transportation network of vessels comprising of arteries, veins and capillaries. Similar to how a bus transports people where they need to go, the cardiovascular system transports the blood where it is needed. Your blood is a fluid which contains oxygen and nutrients, on which your body is dependent. Central to the cardiovascular system is the heart, strategically located so as to maximise the efficiency of pumping the blood around the body.

What is Aerobic Exercise?

Aerobic exercise is any type of cardiovascular conditioning. It can include activities like brisk walk, leisurely jogging, swimming, skipping or cycling. Some people refer to this form of exercise as 'cardio'. Aerobic exercise means 'with oxygen', and indicates that this form of exercise requires additional oxygen introduction into the blood stream to maintain performance (as your heart rate will increase during aerobic exercise). Not to be confused with anaerobic exercise which breaks down stored glucose in the body for energy instead of oxygen.

Blood Pressure

Blood pressure is the measure of force by which your blood is pumped around your body. This pressure is measured in mmHg (mm of mercury). It is subcategorised into: systolic pressure (the pressure when the heart pumps your blood) and diastolic pressure (the pressure during the rest between pumps). For example, a blood pressure of 140 over 90 is a measure of 140mmHg (pump) for your systolic pressure and 90mmHg (rest) for your diastolic pressure.

High and Low Blood Pressures

Having a high blood pressure is often related to unhealthy living habits (consider our work on leading a healthy lifestyle last week). Essentially, your heart has to work harder to transport the much-needed oxygen and nutrients around the body and therefore the pressure is increased in your blood stream. For low blood pressure, the cause is often a side effect from certain types of medicine, dehydration or other such conditions. It is much less common than high blood pressure.