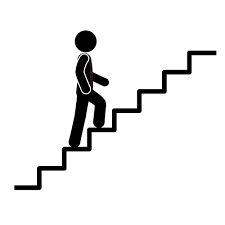
Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Due date \_\_\_\_\_\_

Blood Pressure and Activity

[](http://www.google.com.au/url?sa=i&rct=j&q=running+up+stairs+cartoon&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=http://www.gopixpic.com/200/students-climbing-stairs-in-swenson-science-building-commons/http:%257C%257Cwww*d*umn*edu%257Cadmissions%257Cassets%257Cimg%257Cstairs*png/&ei=rfaIVLO2G8TTmgWQwYLACA&psig=AFQjCNFbMoJqI8hXiDrtHEtAUDwJ9Rr_kQ&ust=1418348533136552)

A sphygmomanometer is a device that measures blood pressure. As the heart beats, blood is forced through the arteries. This causes a rise in pressure called systolic pressure. This is followed by a decrease in pressure as the heart's ventricles prepare for another beat. This lower pressure is called the diastolic pressure.

The **sphygmomanometer** has a cuff that goes around the upper arm or, in some, around the wrist. As thecuff inflates it squeezes on the arm and the blood vessels in the arm. The cuff exerts a pressure well above systolic pressure. It stops blood flowing along some vessels. Once the cuff is fully inflated it starts to deflate again. This causes the pressure to (slowly) decrease. When the cuff's pressure equals the arterial systolic pressure, blood begins to flow past the cuff, creating blood flow sounds that the **sphygmomanometer can detect**. The meter on the sphygmomanometer measures this and records the systolic pressure.The blood flow sounds will continue until the cuff's pressure falls below the arterial diastolic pressure. The pressure when the blood flow sounds stop indicates the diastolic pressure. The meter on the sphygmomanometer records this. Systolic and diastolic pressures are commonly stated as systolic 'over' diastolic. For example, 120 over 80.

Tasks

1. To compare people’s resting blood pressure to the blood pressure they have after running up and down the Science Building stairs three times.

You will need to plan this investigation, carry it out and write up your investigation. This must all be done using Scientific Method. You must state all variables. You will be given a class lesson to plan this and then two classes to carry out the experiment. You will then be given a week to complete the write up at home. You will be provided with a **sphygmomanometer.**

1. When you have completed and handed in this investigation you will be given a validation. The validation will include questions about the investigation and the background knowledge you would be expected to have read to plan this experiment. It will also include information taught in class on Feedback Systems and how these help control of blood pressure. The validation will also assume that you have read the relevant chapter in the text book. While doing the Validation **YOU WILL NOT HAVE YOUR COPY OF YOUR EXPERIEMATL WRITE UP OR ANY OTHER REFERENCE MATIERIAL. IT WILL BE DONE UNDER TEST CONDITIONS.**