Planning and collecting primary data essay

Trial Experiment To see if my hypothesis is correct I carried out a trial experiment, this involved me squeezing a ball at 5 different paces using a metronome and my partner using a stopwatch to time how long it takes for muscle fatigue to occur.

During my experiment I was in time with the metronome, I told my partner straight away when muscle fatigue occurred in my hand so the results were accurate. Some problems that may have occurred were that the pressure of the squeeze of the ball may have changed; I may not have squeezed the ball fully at times I made the test unfair. My partner may not have pressed the stop button on the stop watch as quickly I had some accuracy issues. Also the rate of the metronome may have been too slow so it kook us a longer time to collect the results.

Some ways I can overcome these problems during my actual experiment is: Set the metronome at faster paces because it won't take too long for lactic acid to build up Use a smaller ball so it is easier to fully squeezed Change the ball to a peg so the squeeze can be more accurate. -full squeezes, same squeezes are possible Get a stopwatch that measures more accurately. Measure in milliseconds) Dependent and independent variable My independent variable will be the rate of exercise, so the values at which the metronome will go by beats per minute. My dependent variable the time taken for useless pain/fatigue to take place. Control Variables (Factors that I will keep the same for fair testing) Size of ball/peg/ weight/material Person doing the test Type of metronome Amount of rest time Position of arm The hand that will be doing the exercise Equipment that will be use in my experiment Peg Metronome Stopwatch In my experiment I will use a peg

because the squeezes per minute will be more accurate. I am going to use a digital metronome from the internet because I can hear it better and I can see the beats visually.

I will use a stopwatch because the resolution is higher, it will measure in minute's seconds and mill seconds so the exults for time taken to feel muscle fatigue can be more accurate. Values I will use on the metronome 65 75 85 95 105 Collecting accurate data -To collect accurate data I must make sure that I have a good reaction time to squeeze in rhythm to the beats – I must tell my partner straightaway when muscle fatigue occurs in my hand, but difficult to tell the exact point. My partner must press the stopwatch straightaway when muscle pain comes. -I must squeeze the peg at the same time when the metronome beeps, improve my accuracy.

-Squeeze the same way. Difficult to control (Variables) Temperature-may affect the person doing the test because more blood flow due to bastardization, more oxygen to cells make more time taken to feel muscle fatigue Reflex actions -if the reflex actions are too fast or too slow the results will not be accurate Reaction time-may not react as quickly to the metronome Blood glucose levels. Lactic acid left over.

Method 1 . Get a peg, a timer, an online metronome, and your blank table of results. 2. Set the metronome at 65 beats per minute. 3. Hold the peg in the hand your comfortable in 4. Place your hand on the table.

5. Tell your partner to start the metronome and the stopwatch at the same time. . Once the metronome starts squeeze the peg, make sure they are fully opened and closed. 7. Continue this movement along with the metronome

squeezing at each beep of it. 8. When you hand starts to feel pain/ fatigue tell your partner straightaway to stop the stopwatch.

. Record the time on your table. 10. Take a three minute break, making sure you time it 1 1 . After the break, hold the peg again, set the metronome at the second value, and start it again along with the stopwatch making sure you start squeezing. 12. Repeat this for each of the rates of exercise making sure you take 3 minute breaks in between. 13.

Do a second test with each of the values. 14. Record all the results onto the table, convert them to seconds and work out the averages and write this on your table. Risk Assessment Risks Eye strain Muscle cramp Back/Neck ache How to prevent risks: -Eye Strain Look away from the metronome during the break – eye strain may result in slow reactions when following the metronome and maybe even stopping the test. Eye strain is a low level risk; however precautions will be taken in order to prevent this from happening.

-Muscle Cramp Make sure that in each break you stretch your arms-muscle cramps could cause muscle pains in your body. It may result in discomfort during the test which could affect the performance of the person taking the test and could affect the results.