



National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Achievement Standard

Physical Education Level 3

This exemplar supports assessment against:

Achievement Standard 91500

Evaluate the effectiveness of a performance improvement programme

An annotated exemplar is an extract of student evidence, with a commentary, to explain key aspects of the standard. It assists teachers to make assessment judgements at the grade boundaries.

New Zealand Qualifications Authority

To support internal assessment

	Grade Boundary: Low Excellence
1.	For Excellence, the student needs to critically evaluate the effectiveness of a performance improvement programme. This involves: • making coherent, insightful judgements by questioning and challenging assumptions about the effectiveness of a performance improvement programme • using those judgements to identify and justify what modification(s) may be made to improve the effectiveness of the programme. The student has made coherent and insightful judgements by questioning and challenging assumptions about the effectiveness of a performance improvement programme (1). The student has used judgements to identify and justify what modifications may be made to improve the effectiveness of the programme (2). For a more secure Excellence, the student would need to make more coherent and insightful judgements by questioning and challenging assumptions about the effectiveness of a performance, for example by using biophysical principles.

Student 1: Low Excellence

NZQA Intended for teacher use only

S.M.A.R.T Goal 1: (related to my baseline data- increase cardiovascular endurance) after completing 2 weeks my 9 week training programme on 16th of February I aim to finish the 4.2km time trial on the ...

S.M.A.R.T Goal 3 (related to my Goal 2 data - increase cardiovascular endurance). After completing 8 weeks my 9 week training programme on 22nd of March I aim to finish the 4.2km time trial on the ... running track in a total time of 20 minutes or less. After completing 8 weeks of my 9 week training program I was able to run 4.2km in a time of 19.53 minutes. This result means I achieved goal 3... I also developed an outcome goal for the final event. I did this so I had a time to aim for on the day of the event, after completing my 9 week training program on 4th of April I aim to finish Course B – 3km off road trail run and a 10km off road trail mountain bike in a total time of no longer than 45 minutes. I achieved this also as I completed it in a time of 42 mins 36 secs.....

Continuous training was the main MOT that I structured my fitness programme around, with most training used across the programme using duration over a time of 30 mins and increasing this as the programme went (see progressive overload) e.g. where I increased my training run from 35 mins and working within my aerobic threshold to 42 mins and still remaining within that threshold. It involved an activity which was done constantly (without rest) for a period of time at a set intensity. This system meant that you worked in your aerobic threshold, which enabled me to enlarge my cardio respiratory endurance, which in turn improved my overall fitness. Due to this my VO2 max (volume of oxygen- in litres per minute) would have increased, even if the benefits were minimal. With this type of training maximal oxygen uptake is a good way to determine an athlete's ability to perform sustained exercise. Generally it is seen as the most accurate indicator of improvements made to aerobic fitness. However along with this, muscular endurance was also developed, via exercise which required my muscles to repeatedly carry out several actions at a set intensity. Coming from a background of little fitness this was a component that took pain to establish. This was due to weaker muscles being torn, which in turn resulted in them becoming stronger. However due to that process DOMS (delay of muscle soreness) was something I felt strongly in the first couple of training logs- due to previous lack of exercise. So I believe that continuous training was successful as time went on I could run for longer up to 60 mins by the end of the programme, I had less DOMs and I achieved all most of the goals (except SMART Goal 1).... Specificity was a principle formed that was designed to train your body as close as possible, to performing movements that would take place in the final event. By mimicking/ replicating similar actions, your body was able to adapt and therefore develop strength to components of fitness that would be specific to the final event. I did this by using the continuous training mentioned prior. However specificity didn't only relate to the type of training I was doing, but also to the environment in which it was taking place. If I was to train for an open ocean swim, in a dead calm 20m swimming pool, the conditions would be completely different, to what I was preparing for. I will take the same argument for the biking component of the duathlon, as an opportunity I got to train was often on an open road, which was straight for several km. Because of this, I was not preparing for the technique aspect of the event, which could have been hugely improved by me being exposed, more often to a similar environment. Out of all my training sessions I only once touched my bike down on an off road track as evident in my training log dated 25/3. This definitely would have been an aspect of the specificity I would improve in future training programmes. I would question the type of event that I participate in the future in regards to where I live/work to ensure that if I picked a technical off-road course, I should have easy access to off-road tracks, otherwise I would be more suited to find an on road rather than an off-road duathlon which would allow me to specifically compete on the type of surface I train on. Next year I plan to study in Auckland, and will have no car, therefore in order to keep my training specific, I would need to train for an on road duathlon, using the roads, paths and possibly an outdoor cycling track as I will not have the

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transport to get to the tracks/trails required to specific training for the off-road events.

Intensity was a principle of training that coincided smoothly with progressive overload. It was an aspect measured by the fatigue felt by me at the end of a training session. Depending on how hard I exerted myself throughout the training would vary where I was rated on the PRE scale. The PRE scale measured your perceived rate of exertion- in simple term how hard you pushed yourself in the training. As shown on my graph (from my logging) my intensity wasn't constant, however this could have been balanced out but the time of that training session, as if I was to exercise at a high intensity it would often be for a short amount of time. However if my intensity was low, it could have been for when I trained over a longer period of time. There wasn't much I felt I could critically analyse about this principle of training as almost every training session I felt as if I was taking it up another notch, either with time or intensity. If anything I could have been more exact about what the intensity was by setting target heart rates etc ... rather than just what I perceived it to be as this can differ in terms of how you are feeling physically, mentally, what you have eaten etc...

Modern sport is becoming more and more like an item that can be simply purchased off a shelf. Rather than it being a way to have recreational fun or test your physical ability, it is now turning into a competition of who has the flashiest gear. I have assumed at the start of some triathlon races that particular athletes must be professional ones with the full carbon bikes, aerodynamic helmets, and top of the line sportswear, however, the ones I assumed would place in the top 3, simply did not! This then made me question does the flashiest gear really make a difference to the final performance? The commodification of sport is something becoming very prominent in our society. When competing in races athletes don't feel the part without all the high tech gear. But does that extra \$5,000, to take off 25g in weight with a more 'aerodynamic' helmet, really give you a huge advantage? Or is it just a psychological game? In my personal opinion commodification of sport has been something blown way out of proportion. Over-rated. For me this whole commodification business is just out to drain people's pockets, as they are gaining not much I return. All the flash equipment is advertised to have better aerodynamics etc. but even if that were true, how much of an improvement is that going to make to your performance. Yes, for sure I definitely think that the commodification of sport comes with its advantages, as it can give you a very false sense of security, and synthetic belief of improvement. Which in turn defiantly increases your motivation. But how much of a price are you willing to pay just for a motivation booster? I definitely believe that, to a certain extent, equipment can help aid you into improving your ability. However, when it comes down to the T it can be a very fine line between investing in a quality product and throwing your money towards nothing but thin air. Over the last 30yrs- roughly, commodification of sport has increased dramatically. Sports are now being viewed as a business, as they are being turned into something that can be sold/ purchased. Due to the tricks of the media, people are being sucked in to buy up big for recreation.

In preparation for the final event commodification wasn't something that affected me largely as a person. However I would have to admit, having a flasher bike definitely would have made me train harder, and want to be out there more giving it a spin. Plus if I had been able to train with a heart rate monitor, my motivation and effort would have defiantly increased. This is mostly due to the HR monitor not being able to lie, so my improvements would be very precise and I could structure my training a lot better, depending on where I was at. However, even though all these things would be nice, they weren't hugely necessary as there were other ways of motivating myself to gain improvements. Although if I was given the opportunity to use high tech gear, I wouldn't turn down the opportunity, as I know it would have directly had a positive influence on my performance...

In the future, a way to improve this aspect of the training programme would be to set up a course that replicated similarities to the course...

	Grade Boundary: High Merit
2.	For Merit, the student needs to evaluate, in depth, the effectiveness of a performance improvement programme. This involves examining in detail a performance improvement programme by using biophysical principles and socio-cultural factors to make coherent judgements about the effectiveness of the programme. The student has examined in detail a performance improvement programme by using biophysical principles (methods of training, principles of training) (1), sports psychology (2) and socio-cultural factors (3) to make coherent judgements about the effectiveness of the programme. The student has made some coherent and insightful judgements by questioning and challenging assumptions about the effectiveness of the programme (4). To reach Excellence, the student would need to: • make more coherent and insightful judgements by questioning and challenging assumptions about the effectiveness of the programme • use these judgements to identify and justify what modification(s) may be made to improve the effectiveness of the programme.

One of the first training methods that I used was continuous training. This was the exercising for an extended period of time (at least 20 minutes) to improve muscular endurance and our aerobic capacity. At first the main continuous training I did was by running around Marshall's block which was the distance of 4.2 km. I continued to this on a regular basis as I understood it was necessary in the development of my Aerobic capacity and muscular endurance. Aerobic capacity is the full amount of oxygen that can be consumed by the body in the course of strenuous (tiring) exercise. This energy system lasts from 2 minutes onwards. This covers the entire cardio respiratory system, the heart (hypertrophy), blood vessels and the lungs. With the enlargement of these areas, we are able to improve our performance of running. Enabling to do this, it created a positive effect to the training for the duathlon as the aerobic system is vital for running the race at a high intensity and keeping a good pace. This intensity stayed the same during the whole run. I would run at least 70-80% which is below the anaerobic threshold and therefore I was using the aerobic energy system. This was an effective training method for the duathlon as I was working at a high PRE (7-8/10 perceived rate of exertion) level which will help to adapt my body under the stress of a great intensity that will be needed to help me set keep a good pace throughout the race. So once my body had adapted to the physical demands placed on it having done Marshall's block so much, it meant I would have to increase my distance. I did this by running an extra kilometre each time. This principle is called progressive overload....A negative aspect about this training method is that because the intensity stays the same the whole way, it does not help me to practice for any bursts of sprinting that will be needed at the beginning and the end of the race, or when I want to overtake someone. But this was improved by using the other methods of training such as interval and fartlek.....

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Throughout this course we had to face a variety of challenges resulting in different intensities being exerted throughout. Referring back to my reflection log I say "I found speed play difficult at times as the intensity varied a lot so it manipulated my breathing to go all over the place, a lot of the time it felt beyond the anaerobic threshold." From this example we can see that I did struggle experiencing this form of training as my body was not conditioned to the effects that occur.

The next Factor that had a major influence on our training programme and performance was economics; this can also be made reference to of commodification of sport. Commodification is how media and society can use the emotional ties with sport and recreation to make you spend money. For example the most relevant example of this was with Bikes. Everybody in our class was training with relatively average bikes. Personally I think that we all were achieving fine, until one day one member in our class invested into a professional mountain bike. This immediately challenged the thinking of all of us in the class. Looking at the bike almost made me feel intimidated that I was going to be at a disadvantage in the final event if I was to be using my 3 year old bike. It also appeared evident to me that I was not the only one in my class; I saw this occur when I came time to the share bikes. Immediately everybody would migrate towards the bike that had the flash gears of shiny colour, and the helmet that didn't have Winnie the pooh on it. When I evaluate this it shows that we were falling into the trap of commodification, we had fallen into the mind-set that a better bike will mean better performance. If I was to challenge this notion and ask, is it really going to improve my performance or is it just going to make me feel better or more confident and make me try harder? I think this would prove true, but where does this cycle end? Does it transfer through to clothing, heart rate monitors, running shoes etc? I think from looking at these examples it is very evident that economics definitely did have an impact on sport but I feel I overcame a lot of the issues so that it would not have a major impact my final performance physically and mentally. If I was to modify my programme in regards to the type of equipment in order to improve my

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performance, I would continue to still use my 3 year old bike, helmet and clothing that I did. My results compared to that of another classmate who had flasher gear did not do as well as me, and our pre-test results were the same, therefore I can conclude that my programme was still effective using the gear and the amount of effort I put in.

This leads me to my point in the final event. Why is it that we use time to define our success? Can it not be that we can be assessed on how our enjoyment levels have increased, and seeing the impacts of endorphins have impacted on our performance? For me because I am a competitive person I do use something like time as a driving factor to improve my performance, But it does make me give consideration to those in my class that are not of physical advantage, or are not so competitively driven as I am. How can time be a true interpretation of their success throughout this training programme? As their improvements in time were minor but their self-belief and motivation were great. This leads me to my conclusive idea that although time may be an unfair representation. It will always remain as a benchmark for improvement, but there is no way to ensure how much fun, or an enjoyable an activity will be. But what memory of the final event will remain in a few years, the time or your enjoyment...

During weeks 3-7 of my training program, my training summaries indicated that I was at or above my training frequency goals. For example in week 4 I did 5 training sessions. These training loads consisted of a mixture of fartlek trainings, being my netball and touch games, and an endurance run around Marshall's block. For the level of fitness I had during the time I feel that I had made very significant gains in my Aerobic capacity. This is indicated by my performance check points at week 1 and week 8. My time for the 3km time trial run improved from 15.49 minutes to 14.20 during the period of training from week 3-8. I believe the application of frequency was significant in training the components of fitness of aerobic capacity and muscular endurance. By participating in a large number and variety of training sessions my body adapted to the demands placed on it, and I was able to meet my short and long term goals. Goal setting proved to be an effective biophysical principle that ensured my performance programme was effective. By setting realistic goals based around my pretest results outlined in my log book (20/3, and 27/3, evidence shows progression did occur. On reflection, by goals recognised my current ability and my future potential. Specific short term and long term goals and checkpoints were crucial towards experiencing success and the entire process helped determine my priorities and provided motivation to improve my performance. Examples of my goal setting action plan can be found on pg 2 on my training log book. I found that I was in complete control of whether or not I could reach each goal if I effectively executed my training programme, but also discovered that the uncontrollable factors such as competition from classmates and weather hugely influenced my results (refer to training log dates 24/3). By evaluating each session, I could adjust/tweak my goals and programmes where necessary, eg, on 29/3 I ...

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The first socio-cultural factor that held impact was a variety social factor. I think social factors tie in very much with sport psychology but in a different sense that we use the people around us for motivation, or drive for better results. For example, when we would go out to train for a run I always seemed to start off with the same group of girls, it was as though we had the attitude if 'you do it I will do it to'. This was a continual pattern right throughout our p.e class; this could be considered is a risky factor to rely on motivation, but lucky we all were motivated students and I guess in a sense we were self driven. But as we can see there was a strong social element linked with doing exercise and being able to compete and relate with your peers. Although In saying this I am a very competitive person so I felt that if was running with another partner it meant I was running slowly and I would continually feel the urge to increase my intensity and go faster. In fact I found it annoying running with a person as their breathing patterns, and footsteps would put me off synch. So from this example we can see that social was not a huge factor that was driving my performance...

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	Grade Boundary: Low Merit
3.	For Merit, the student needs to evaluate, in depth, the effectiveness of a performance improvement programme. This involves examining in detail a performance improvement programme by using biophysical principles and socio-cultural factors to make coherent judgements about the effectiveness of the programme The student has examined in detail a performance improvement programme by using biophysical principles (methods of training, principles of training) (1) (2) and sports psychology (3). The student has made some coherent judgements about the effectiveness of the programme (4). The student has examined a performance improvement programme by using socio-cultural factors to make judgements about the effectiveness of the programme (5). For a more secure Merit, the student would need to examine in more detail a performance improvement programme by using biophysical principles (more than one method and principle of training) and sociocultural factors to make more coherent judgements about the effectiveness of the programme.

I believe that the application of frequency was significant in overloading my bodies system (cardio vascular and muscular). By participating a large number of training sessions during weeks 4 to 7 my body adapted to the demands placed on it....

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One of the major influences on improvement in my running and biking performance has been the application of frequency. Frequency is a principle of training that relates the amount of training sessions that an athlete undertakes in a given week of their training programme. In training for the duathlon it was vital that I was training a minimum frequency of 3-4 times per week which was maintaining my fitness. But more sessions were needed to improve my performance. As I am a competent athlete in relation to aerobic training my body is able to cope with the demands of training at such a frequency. During weeks 3 to 8 of my training programme my training summaries indicated that I was close to achieving my goals and improving my times running Marshalls Block. For example in week 7 I trained 4 times. Theses training loads consisted of 3 runs and 1 one hour circuit. For the level of fitness that I had during this time I feel that I made very significant gains in my aerobic capacity. This is indicated by my performance check points at week 4 and week 7. My time for the 3km time trail improved from 22.10s to 20.20s during my period of training from week 4 to 7.

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Progressive Overload - Training activities must be continually made more 'intense' to continue to apply overload to the different components of fitness. Overload can be applied by manipulating the time and intensity of a training programme. Rest - Training programmes must incorporate sufficient rest periods in order for the body to recover and make adaptations. Time - The length of a training programme and session. The duration of a training programme and session must be long enough for improvements to take place. Intensity - This is how hard you are working during your training session. This is also how you measure the overload that is being applied to your body. You need to be working at a suitable level to gain improvements- but not too hard, to cause injury.

A method of training that I used was Fartlek, which means "speed play" in Swedish. Fartlek Training is a training method that blends continuous training with interval training. The variable intensity and continuous nature of the exercise places stress on both the aerobic and anaerobic systems. Fartlek is unstructured and intensity and/or speed can be varied whenever the athlete wishes. Most fartlek sessions last a minimum of 45 minutes and can vary from aerobic walking to anaerobic sprinting. Fartlek training is generally associated with running, but can include almost any kind of exercise. Fartlek training is so successful because it can be adapted to the needs of the individual. I used Fartlek training when I played netball which was 3-4 trainings a week. This method of training was effective because it put pressure on my aerobic and anaerobic systems. However this method of training was not specific to my goals or specific in the type of training that I needed to complete the final event but I was using a high intensity and getting my heart rate up which was relevant to my final event. I made a judgement that the event would be aerobic based therefore choosing continuous training. My judgement was effective because when completing the final event I mainly used continuous training and it was aerobic based.. I chose continuous training because it was the most specific method needed for me to complete the 2km run and 10km bike in under an hour and meet my goals. Continuous training involves continuous activity without rest intervals. This varies from high intensity continuous activity of moderate duration for example when doing the 3 km time trail to low intensity of extended duration, for example, when doing Marshalls Block-4.2 km. Continuous Training was effective because it trains my aerobic capacity and muscular endurance both which are needed to complete the duathlon. Aerobic Capacity is the ability of the body to continue

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to produce energy aerobically and using this energy to perform tasks involving the whole body for extended periods of time. This is because it puts 'stress' on your cardio-vascular system and also requires muscles to be used over and over again. The improvements in the aerobic system created by continuous training allows me to reach an aerobic steady state faster, accumulate less lactic acid, and recover more rapidly between efforts or after exercise. By using continuous training I knew I would be running for a period of time and I wanted to improve my energy systems so therefore I would receive a good time and achieve my goal in completing my run in under 15 minutes and completing the event in under 60 minutes.

Motivation is defined as the process that initiates, guides and maintains goal-oriented behaviours. Motivation is what causes us to act, whether it is getting a glass of water to reduce thirst or going for a run. By training at school with my friends and encouraging us I began to enjoy training and had fun while doing it. If my friends were running I began to become motivated while at school and also outside of school. By working with a partner it also gave me the motivation to want to train and get a good time. Motivation had a positive effect on my performance because for the final event I was excited and was enthusiastic and wanted to perform well. By running withfor the final event, I was motivated and we both wanted to do well, this gave me motivation and I tried my hardest and enjoyed the event. For the mountain bike I was biking by myself for the first 2 km, during this period on the course I was not motivated and did not bike as fast as I could have due to fatigue, and a lack of motivation and confidence. During the last 8 km biked with really motivated me as she was behind me and I knew that I needed to keep up the pace and she directed me where to go as I had not been there before and this gave me confidence and motivation instead of being on my own. Motivation had a positive effect on my performance because I pushed myself and worked with my friends and peers to motivate each other.....

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The Environmental factor of SPEECH had an effect on my training programme. This is because I was not training in the specific environment. For example when training at school I ran around Marshall's Block which is on the road or at on the school field around the 400 m track.. For the final event it was at a Pine LocationThis had a negative effect on my Overall performance for both the run and the bike because I could not train at the specific location and did not know what the terrain would be like for the run or the Mountain Bike.....

Gender considers the characteristics of males and females and the differences and benefits of one gender over another in specific sports. I was brought up in a sporting family and have played sport from a young age. My performance was not effected by gender stereotypes during my final off road event. All of the males in the class are at a higher level of fitness and are of higher strength than me. However I was not effected by this as I did not see the event as a competition I saw it as a personal challenge and I wanted to perform to the best of my ability. Generally those who are the most aggressive at sports have more success. I believe that I could have been more aggressive the biking throughout the 10km and therefore I may have finished the event with a faster time. I also am not a risk taker, during the mountain bike I was not very confident at the start I went relatively slow around the bends and over the bumps. I was quite heavy on the breaks due to not having the experience of mountain biking before. Also I had not practiced my transitions between running and biking, others in the class had very good techniques but I was not very confident as I had not prepared for transitions. Overall I believe that the idea concept of gender stereotypes did not have a negative effect during my final event.

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	Grade Boundary: High Achieved
4.	For Achieved, the student needs to evaluate the effectiveness of a performance improvement programme. This involves examining a performance improvement programme by using biophysical principles and socio-cultural factors to make judgements about the effectiveness of the programme. The student has examined a performance improvement programme by using biophysical principles (methods of training, principles of training) (1) (2), sports psychology (3), and socio-cultural factors (4) to make judgements about the effectiveness of the programme. The student has made a coherent judgement about the effectiveness of the programme (5). To reach Merit, the student would need to examine in more detail by using biophysical principles and socio-cultural factors to make more coherent judgements about the effectiveness of the programme. The judgements should be supported with specific examples from the performance improvement programme experience.

Throughout this training programme I set goals which helped enable me to complete the final event....These goals were checkpoints for me to ensure I was gaining fitness and improving my cardiovascular endurance. These checkpoint goals helped set my outcome goal for the final event.

After completing my eight week training programme, on Wednesday 4th April, I was to complete a course of; 2km off road run and a 10km mountain bike in a target time of 40.30 minutes or less overall. From my SMART goals previously, they helped me set a time to complete the run which sets the excess time for the bike to be completed in. My goal was to complete the run in 10.30 minutes or less which meant 30 minutes or less for the mountain bike. I completed the overall event with a time of 40.11 minutes. The bike component was a time of 29.16 minutes and the run component was 10.55 minutes. I was pleased to achieve my outcome goal.....

This type of exercise is, as the name suggests, continuous! Rests are not allowed. To achieve this you must exercise at a constant rate which is within your aerobic training zone (60-80% max heart rate). Continuous training should last for bouts of at least 20 minutes (when starting) up to 2 hours or more! (Think of a marathon!). Continuous training helps to develop general fitness and this is the base of all types of fitness. During my training programme this was the main method of training I used. Even though this was the main one I used, I still could have used it more. In my training programme I used this method of training every week, at least once or twice. This was the highest percentage of the one training method, but needed to be more. To make my training programme more effective in improving my performance I should have completed at least two sessions of continuous training per week. The types of continuous training I used were mountain bike rides, runs and walks. The most effective continuous training was the running because it is a higher intensity rate compared to walking or biking. The running effected more muscle components. Biking still affected some muscle components but not as many as I required to relate to the final event. Running, walking and biking all impacted my cardiovascular endurance but I believe that running was the most effective one on my body. The Advantages of continuous training i.e. running, there is limited needs of equipment. Good for aerobic fitness and good for losing weight. Also this training method is relative to the final event as it mainly consists of continuous training. The disadvantages are that it can be boring, doesn't improve anaerobic fitness so is not assisting with the short bursts of speed that I may require in the final event to compete against somebody near the end of the event.....

One of the things that I found was that towards the end of the eight weeks of my training, I was struggling a little with fatigue. In week eight I was finding that during a training run my times were starting to become out of sync with my PRE scale that I was using to measure my intensities. In week eight of training my PRE scale was an average of 6, whereas in week eight of training my PRE scale was an average of 9. The problem was that in the eighth week of training, even though it was a high intensity training scale, I felt that my training in week two was stronger. This was because my body had fatigued from too many training sessions and their intensity. If I was to challenge the notion of 'the more you train, the better you get,' it would be that if you're training with too high a frequency it can place too much overload on my body's systems and as a result, an over fatigued state can become evident. When we were taught the training effect graph it is clear that the body needs enough rest and recovery time in order to adapt, repair and restore its energy supplies. In my final week of training the frequency of training was very low to compromise for the recovery time needed.

Fartlek training involves training at a continuous exercise, but varying the intensity and type of exercise. For example, a running session could include sprinting for 10 seconds, fast walking for 20 seconds, jogging for 1 minute and then repeating this. You can also add in things like running uphill or on sand. I used this type of training towards the end of my training programme to assist my body in understanding when to push it hard and when to take it easy. In my training sessions for this method I did orienteering tracks where I used 20 second spurts every 3mins to up the intensity. The advantages of this was that it was good for sports I do in my own time which require changes in pace, this was not effective for this training programme though. This was easily adapted to suit my level of fitness and sport. Also it enabled me to gain fitness without realising, because it was enjoyable. The disadvantages were that it was too easy to skip the hard parts and so I was not getting a full work out that contributed to my fitness for the final event.

Progressive overload was another part to the training programme that I attempted. The problem was that I was not consistent with this progressive overload. Some training sessions had progressive overload because the intensity was an improved overload in comparison to the previous sessions that did not consist of progressive overload. To improve the effort I gave to this training programme of progressive overload I should have included an increase of either; intensity, frequency or duration in the post training session. This would have allowed progressive overload to occur more frequently.

The application of sport psychology is a way to approach goals and improvements in certain parts of the training or final event. Sport psychology includes many aspects for mental encouragement and event focus. To be motivated in the duration of the event was quite hard for me because my confidence in running the distance of 3km required a huge effort. For me to be motivated in this I had to set goals that helped enable me to finish each training or time trial session. Self-talk was also a handy method to motivate and encourage myself. "You can do it! Don't stop 90 more metres." These sorts of statements pushed me to my limit. Even though some self-talk statements were not beneficial, it kept my head high and pushed my body physically and mentally to my maximum performance. A judgement that I have resolved after completing the training programme and final event is to apply sport psychology a lot more in the final event compared to the training sessions.....

Commodification of sport is closely linked to economics. Using emotional ties with sport to persuade them to spend money. Relating this to my training programme means this question is asked. Would my training have been more effective if I had purchased a new set of running shoes or a heart rate monitor? From my experience, buying new gear or equipment for the event would not make any difference or an improvement compared to not buying a new pair. I believe that it is a mental thought that makes yourself feel that it will make you better, this is an emotional pull. This then makes you think you are performing better. I bought a new pair of runners for the event and my time trials did not have such a dramatic improvement that proved the shoes were worth buying. Heart rate monitor for past events didn't show improvements either.....

Scientism is a part of sport that people use to try improve performance. Scientism looks at the body as a machine. This involves using science to measure how effective your training is. Success is defined by meeting goal times and comparing performances to baseline data. "If it moves, measure it." For example measuring everything about training to determine success – VO2 max, heart rate, stroke volume, respiratory rate and Map My Run. The problem with scientism is that it is classified 'only success if you improve your times by the end of it all.' In my training programme I was really worried about scientism as I was unsure of improving my times each session. However, besides scientism I gained fitness and knowledge of how to train properly for an event.

	Grade Boundary: Low Achieved
5.	For Achieved, the student needs to evaluate the effectiveness of a performance improvement programme. This involves examining a performance improvement programme by using biophysical principles and socio-cultural factors to make judgements about the effectiveness of the programme. The student has examined a performance improvement programme by using biophysical principles (methods of training, principles of training) (1) (2), sports psychology (3) and socio-cultural factors (4). The student has made some judgements about the effectiveness of the programme (5). For a more secure Achieved, the student would need to examine in more detail a performance improvement programme by using biophysical principles and socio-cultural factors to make more judgements about the effectiveness of the programme. The judgements should be supported with specific examples from the performance improvement programme experience.

SMART Goal 1 (related to my baseline data – increase cardiovascular endurance). After completing 2 weeks my 8 week training programme on 16th of February I aim to finish the 4.2km time trial of Marshall's Block in a total time of 25 minutes or less... **SMART Goal 3** (related to my Goal 2 data - increase cardiovascular endurance) After completing 8 weeks my 9 week training programme on 22nd of March I aim to finish the 4.2km time trial of Marshall's Block in a total time of 19 minutes or less. I have also developed an **outcome goal** for my final event ...I aim to finish Course A – 4km off road trail run and a 10km off road trail mountain bike in a total time of 45 minutes.

....When it came to my final event, I did not meet my goal by achieving a time below 45 minutes. Instead I finished with a time of 46:15. There were many factors that contributed to this, mainly biophysical. I feel that I wasn't in the best fitness when I reached my final event as the weeks leading up to it I had lacked frequency, specificity and progressive overload in my training sessions, which caused my fitness to slowly diminish. However, the catalyst behind these biophysical factors was actually the sociocultural influence on my programme, as I was affected by my schooling, and other social influences that caused me to train less.

Throughout my training programme, I focused on continuous training in each of my sessions. For example, my programme largely consisted of Marshall's block runs, where I would run at a continuous pace for 4.2 km. In doing this, I developed my aerobic endurance over time which allowed me to run faster as well as muscular endurance which allowed me to run further without fatigue. Marshall's block was a good starting place for the development of my fitness. However, I needed to also incorporate training for the biking leg of the event also. To be specific to the odyssey, I would create a routine of Marshall's block where I would run 4.2km and then do two laps of it on a bike. Although this was specific for developing my running ability, I found that the biking leg lacked specificity as it was not all terrain, but instead long well paved roads. This would not help in the long run as the course for the final event is long, windy, and the terrain is constantly changing. Furthermore, in the 10km bike, I ended up using fartlek training rather than continuous as I would pedal aggressively down straights but slow down on approach to corners. Therefore, for my training for the biking leg specifically, I needed to make sure that I was working toward my goal and not doing anything unnecessary. I achieved this by training on the actual course itself, as well as just training on the open road.....

Progressive Overload played a big part in my training programme. I quickly realised that if I was not constantly extending my training sessions, in distance, intensity or duration, then I would not improve. As it became easier to run Marshall's block, I began running further distances to achieve progressive overload. This began with running in my own time at a new course which was 4.8km rather than the usual 4.2km. To follow this up further, when I ran Marshall's block again I extended it by running down an extra side street which made the distance approximately 5km. Alongside increasing the distance, I began to run for longer, and with a higher intensity, which saw my times improve drastically. I ensured in every session that progressive overload was reached as it was crucial to my development..... The frequency that I trained played an important role in the development of my fitness. I began training more frequently, on some weeks doing fitness related to my goal almost every day. Because of this I had a stage in time at about the 8th week of training where I was training at almost my full potential and was seeing great times and results. However, school work, and other commitments began to take over in the weeks leading up to my final event and my frequency decreased. Due to this I began training a lot less and therefore my fitness slowly began to decrease to about where I was after 5 weeks of training, which was nowhere near my actual potential. When it came to the final event I failed to reach my goal as I did not continue a steady frequency throughout my programme ...

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The intensity at which I trained contributed to whether or not I actually improved in my fitness. If I did not train at above 50% intensity in each of my training sessions I would not actually make any physical improvements or gain. I realised this as I would train approximately 3 times a week, but in those sessions where I was not working hard enough, the training sessions that followed would be a lot more difficult as I had not actually improved, but detrained due to such a low intensity. Because of this I needed to make sure that all my sessions were above the minimum threshold in order for advancement in my fitness.....

My confidence played a huge part in my training programme. I had to ensure that I had good self confidence in order to accomplish something. If this confidence lacked, I found that I would not complete my goals or beat personal bests as I did not believe in myself to do it. I found that when I was confident enough about a session or event, I did very well, due to this boost of self motivation. All in all, confidence in myself was crucial to performing at my best.....Ensuring that I was motivated towards something was important to the overall success of my training. If I was to do an event I did not actually feel up to doing, or did not care about, then I would surely put little effort into it, which would reflect badly in the results. For example, when running Marshall's block, I ensured that each time I was trying harder than the session before, in order to beat my personal best. However, if I had completed multiple trainings that week and was quite fatigued, then I would be less motivated to keep up a high PRE (perceived rate of exertion) throughout the entire run. The result of this would be that I came nowhere close to beating my personal best.....

One of, if not the most important psychological factor to me, was goal setting. Every session I trained, I would create a goal for me depending on how I was feeling that day and my perceived ability. For example, ...The Economic factor affected my training programme significantly in a variety of ways. Firstly, the cost of training toward my final event seemed to be one of the most influential factors in my training programme. Because I did not have a lot of money to spend on my training regime, for example petrol to go to specific places such as, I was restricted to particular training areas around, although they had little specificity toward the final event. These included Marshall's block and Sheat's block, which were open road loops where I would practice my continuous training. These areas were in no way specific to where my final event took place, as consisted of varying rough terrains and tight corners, to which Marshall's or Sheat's had little comparison, except for the similar distance. If I had more money to spend on petrol and time to train I would have gone to regularly, to specifically train to my goal, rather than just training on a few particular courses in, that weren't actually going to help me in the final event.

Secondly, the Commodification of sport was significant to the Economics of my training. Every day, I am constantly reminded that better equipment, means a better performance when it comes to training from advertisements, and professional athletes. Because of this, I was under the influence during my training programme that if I did not have the most up to date equipment, then I would not be achieving my full potential. When it came to my training sessions on the bike, I would not have a bike specific to my training, or own one at all for that matter. I would constantly be borrowing and changing bikes, and because of this I would lack consistency in my sessions as some bikes will be completely different to others. When it came to my final event, I was to use a road bike on an off-road course, with only the front tyre changed to deal with the terrain. Because of this I would slide around corners every so often in loss of traction, as my bike had two completely different tyres, with the frame itself not designed for off road use. In this aspect, I feel that the commodification of sport was significant to my result, because I think that if I actually had a mountain bike, that was reliable and designed specifically to the event, then perhaps I would have performed better. Most other aspects such as Lycra suits, and pedal clamps were insignificant to my training as I know that they would not really matter in the final event, as majority of the equipment itself will do little improvement. The only trap I fell into with commodity was in wanting a better bike more suited to the environment in hope that it would make me perform better, when in actuality it may do nothing at all.

	Grade Boundary: High Not Achieved
6.	For Achieved, the student needs to evaluate the effectiveness of a performance improvement programme. This involves examining a performance improvement programme by using biophysical principles and socio-cultural factors to make judgements about the effectiveness of the programme. The student has briefly examined a performance improvement programme by using biophysical principles (principles of training) (1), sports psychology (2) and socio-cultural factors (3). To reach Achieved, the student would need to examine in more detail a performance improvement programme by using biophysical principles and socio-cultural factors to make clear judgements about the effectiveness of the programme. The judgements should be supported with specific examples from the performance improvement programme experience.

I used a number of SMART goals in my training programme. The goals were set by myself and my teacher, so they were realistic and really specific. I made sure that each goal was related to the duathlon so on the day of the event, I could put in my best performance and know that if I did all my training and met my goals along the way, I would feel proud of myself. In the final event my total run time was 10.23 minutes for the 2km run, my bike time was 38.36 minutes for the 10km bike and my total time was 48.59 minutes. I am happy with my result because I enjoyed the training program most of the time and it developed my interest in mountain biking which I continue to do on some weekends with my brother. By setting SMART goals, I was able to monitor where I was at and to see if I was on track to complete the duathlon. Goal setting made me stay on track with my training and gave me a focus, so made my programme pretty effective. My SMART Goal 1 was related to my baseline data, and was aimed at increasing my cardiovascular endurance. After completing 2 weeks of my 8 week training programme on Wednesday 8th of February I aimed to finish the 3000m time trial on the running track in a total time of 20 minutes or less ... My **SMART Goal 3** was related to my Goal 2 data, to increase my cardiovascular endurance). After completing 8 weeks of my programme, on Tuesday 6th of March I aimed to finish the 3000m time trial on the running track in a total time of....or less. I also developed an **outcome goal** for my final event. After completing my training programme on Wednesday 4th of April I aimed to finish Course B – 2km off road trail run and a 10km off road trail mountain bike in a total time of 40 minutes.

Continuous Training was the method I use most because doing the run part of the duathlon required me to run at least two kilometres without stopping and running at a sustainable pace. I also used the fartlek method which usually involved a game of soccer or touch rugby, like speed play. The other method I used in my training for the duathlon was interval training this involves short periods of time doing exercise and an equal period of rest, as you improve you can shorten the rest and exercise time respectively to increase the intensity of the training.....

My training was specific to my final goal of the event, in terms of the fact I ran the same distance or further than I would have to in the final event and I biked 10km regularly during my training program which prepared me for the final event. The environment I had to work with for my training program was not specific enough and was not similar to the terrain that the final event had, this could have influenced my progress negatively as I wasn't use to running or biking on off road rough surfaces. I had trained for the first six weeks solely on tar sealed roads and the running track at school which is grass. My training program was not specific enough for the biking part of the duathlon because I didn't have the right environment to train in. The roads I trained on were very different terrain to the tracks, if I had been able to train on the track twice I week it would have significantly improved my end performance. Training in specific environments is a good way to make improvements to times and fitness, as it required different techniques to bike on the road compared withmountain bike track.

I achieved my aims, goals and objectives of most of each session throughout my program because I worked hard and was determined to do as well as I could. In week four I ran three times and did an hour and a half of horse riding because I could see that I was improving and that I was on my way to meeting my end goal. In the early stages of my training program I was able to make better physical gains.....

Progressive overload helped me improve faster than just doing the same thing over and over. I increased the distance that I ran and not walking for the full time of the run and how quickly I ran. This affected my training program positively as it meant I improved at a steady pace.

Having rest days where I did no exercise helped my body recover from long or difficult running session. By increasing the amount of time I was exercising for this increased my fitness level and meant I was working at an average of 7 on the PRE scale. My training program was supposed to be eight weeks long but in the final week I wasn't motivated and didn't do any exercise until the final event a week later I didn't focus too much on scientism with my training program because I felt it was important to also look at my success with doing more exercises that I would normally, feeling healthier, have fun with my peers and trying a new skill which was mountain biking. It was an important part of my training to look at my times and VO2 max to see if I had improved and by how much. On most occasions as I did more exercise e.g. running I noticed that I improved every time even if it was by a small margin.

Healthism: I think that my training program did influence me to think that my personal health is my responsibility and that a body and a car are similar in the way that they both need to be maintained. If I don't maintain my body by eating well and exercising regularly it can cause mechanical problems for my bodies. My brother re-enforced this idea for me because he is very fit active and healthy, where as I am not very fit or active and I get sick more than he does and have ligament problems that would be improved by exercise that builds muscle. Health problems can be genetic or hereditary however often they can be improved by doing exercise and being more active.

Gender Stereotypes: Different genders benefit from more because of their gender when doing certain sport. Gender can be an advantage for example males are better at rugby then females because they are stereotypically more aggressive than females. The differences between males and females are instilled in each gender from birth, pink for girls blue for boys. Barbie's for girls and Action man for boys, it shows that society has certain expectations form different genders. Males will be strong, fast and aggressive and females will be pretty, wear dresses and cook.

Gender stereotypes affected my training because I felt like I was supposed to be more co-ordinated and not aggressive and still had to maintain a certain amount of grace. Being a female meant that I shouldn't be as aggressive as the males who were all a lot faster than me and the males were very competitive. I was told to just have fun and do my best, I wasn't motivated by my peers, family or friends in the same way that the males were, they were told to train more go faster take risks. Because of this, I wasn't as aggressive as I should have been in my training, and looking back now, I think I should have trained harder and more aggressively.

Overall I would say my training program was successful not only did I improve my fitness and improve my times by minutes each time, achieved my aims, goals and I had fun and enjoyed the training program. On Tuesday the 6th of March I completed my 3km time trial in 16.50 minutes. I improved my initial time of 19.20 minutes by 03.30 minutes over a number of weeks I was pleased with my improvements which resulted from having a successful training program. It was good havingandas running partners because they motivated me to keep going and do better. The biking and running through the township of was a big motivator for me as I didn't want to be seen slacking off or not doing well, also is a more enjoyable environment to exercise in. Biking on the track at was a new and fun experience for me so I enjoyed biking at the venue. It was also helpful that my teacher was able to organize to take us to before the final event so we knew where we were going and what to expect.