



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

Exemplar for Internal Achievement Standard

Physical Education Level 3

This exemplar supports assessment against:

Achievement Standard 91789

Devise strategies for a physical activity outcome

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.	<p>For Excellence, the student needs to devise comprehensive strategies for a physical activity outcome.</p> <p>This involves selecting and explaining, using coherent and insightful reasoning by questioning and challenging assumptions, the knowledge that underpins the strategies to achieve the physical activity outcome.</p> <p>The student has selected and explained, using some coherent and insightful reasoning by questioning and challenging of assumptions, the knowledge that underpins the strategy (goal setting) to achieve the physical activity (aquathon) outcome (1).</p> <p>The student has trialled (2) and made adjustments (3) to the strategy (goal setting) in order to achieve the physical activity (aquathon) outcome.</p> <p>Only one strategy (goal setting) has being exemplified. More than one strategy is required to meet the requirements of the standard.</p> <p>For a more secure Excellence, the student would need to use more coherent and insightful reasoning when explaining the knowledge that underpins the strategy (goal setting) to achieve the physical activity (aquathon) outcome.</p>

Student 1: Low Excellence

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Physical activity outcomes:

- to complete an aquathon in 30 mins
- to make sure my heart rate monitor says an avHR between the 80-90% MHR in the runs
- to make sure I am at all class sessions and keeping to my swimming training program

Goal Setting

Goal setting is an important strategy to have because it will help me achieve my goal by providing me with an image of what I aim to accomplish.

It could be argued that having a goal does make your mind focus on what you want to achieve therefore the training appears easier.

However, I am assuming that having a goal will make me more likely to achieve and will make me train harder. The research says that goal setting focuses attention and enhances persistence and motivation which means an athlete can be encouraged to work harder than an athlete not working towards a goal (<http://www.brianmac.co.uk/goals.htm>) (<http://believepärform.com/performance/goal-settings>). However, we know that when it comes to training and performing there are many individual differences and individual influences such as ... As well as this, completing an aquathon is new to me and I am assuming I am capable of completing it, with the right training. I'm also assuming I can work out what the 'right training' is for me and not just risk following a 'one size fits all' approach. I am also assuming I can apply the science of training and also take care of the motivation side of actually doing it, which is not considered in a lot of training programmes. Then there is the assumptions around training and its effects, which are often stated in a way that says if we do X and Y; then we will be fit and ready.

I believe that having a goal does make your mind focus on what you want to achieve therefore the training appears easier. Research supports this, and this has been my experience in the past when I set myself little goals such as... and I am aware of what motivates me, and this includes having goals and achieving these. However, I am also assuming that my past experience will transfer into what is a much tougher goal and I am untested in sticking to a programme when the going gets tough. Being aware of this I think will help me monitor my motivation and my ability to stick to my goals. For me, I know that having milestones or short term goals acts as positive feedback on my progress and helps me feel good about achieving and therefore am more motivated. It might not be the case for some other people as they are more focused on the end goal rather than the short term goals like running hard up hills in individual training sessions. Often focusing on the final outcome you might lose focus as well as not overloading as much.

What this means is that when I am training, I will be able to be motivated to work as hard as I can to improve. Enhancing motivation will be great for me because in the running I will be mentally weak and having a goal means that I can think about working towards the goal and not giving up or taking breaks on the running. ... My overall goal of completing the aquathon in a time of 30 minutes will be quite hard to achieve, so I think it is important to broaden this goal to getting an Excellence, which is more achievable and it is more realistic. In the first two weeks I will be focused on making every training session and trying to keep exactly to the training session. In my training program I will make sure the session goals are achievable so that I am challenged as this will be me motivated to be successful in completing each session. If my session goals are too easy or too hard I will not make the necessary gains. For example, my goal for the run sessions is to make sure my heart rate monitor says an avHR between the 80-90% MHR (see overload section for reasoning). For the swimming sessions I will need to make sure I am at every session and keeping to my training program. In my 3rd and 4th weeks I will be timing myself to check my progress and from these results I will be able to make any necessary adjustments to my training programme.

Reflection after 2 weeks Over the first two weeks, I have achieved my goal of having an avHR of between 80-90% of my MHR. This has been a big short term goal for me because this means that I am, making improvements and will reduce the time to complete the aquathon. I am making an assumption here though which is that working at the upper end of my THR will make me improve my time over a short timeframe, and we know that changes in aerobic capacity don't happen that quickly. Research does tell us though that over an extended period of time, working at this intensity for 4-5

times a week will improve my aerobic capacity. I am assuming this in turn will increase my speed which I don't know yet!

During the runs have been running with AA and CO, which has helped me to be more positive about my running. I have been having fun, as well as thinking about my goals while I run. This means that I should be aware that a motivating factor for me is the social component of being with my peers and so if I find training hard I should make sure I have this social aspect included in what I am doing. Having the heart rate monitor on means that when my HR goes below 162BPM I can put my head down and work harder, seeing the heart rate go up even though it burns, feels good to know that I am working toward the goal. The only time I have not felt motivated towards my goals is when I went for the W... run by myself, even though it was a good run, I had no idea if I worked hard enough and it wasn't as fun as being with others. This was also because I didn't have my HR monitor on or else I would have known how hard I was working. It seems for me I am motivated my running with others but also by knowing I am working at the top end of my THR zone. These two motivating factors don't always match up unless I run with people who are at the same pace as me or else when I need to increase my intensity to keep my HR up, I risk leaving others behind, which cancels out the social benefits. Having realised this means I am going to be selective about who I run with to ensure I meet my goals as well as being motivated by being with others.

My other goal was to complete every session, which I have done. This means that if I have an effective training programme, I should be making progress towards my outcome goal of completing the aquathon in 30mins. I am on track for my swimming goal of completing all swimming sessions and have not missed out sets or laps in the pool. I think that setting these goals has helped me to complete the training sessions because the goal provides me with a purpose and direction towards achieving my aquathon outcome Therefore this makes me feel more motivated to train. For example, (see log entry).

Overall, I will need to adjust my short-term goals to include learning focused goals because my swimming stroke is not very efficient. I plan to join the school squad for each swimming session to make use of the school swim coach. My first learning goal is to focus on a high elbow recovery as my hand and arm come forward and slam into the water which causes me to lose momentum in the form of drag, and my arm fails to move me forward (see my blue highlighted log entry) The coach will there to provide me feedback in achieving this goal and subsequent short term goals I will set with him to improve my stroke efficiency.

	Grade Boundary: High Merit
2.	<p>For Merit, the student needs to devise in-depth strategies for a physical activity outcome.</p> <p>This involves selecting and explaining, using coherent reasoning, the knowledge that underpins the strategies to achieve the physical activity outcome.</p> <p>The student has selected and explained using coherent reasoning, the knowledge that underpins the strategy (a place responsive approach and nutrition) to achieve the physical activity (Hikoi) outcome (1).</p> <p>The student has started to use coherent and insightful reasoning by questioning and challenging some assumptions, the knowledge that underpins the strategy (place responsive approach) to achieve the physical activity (Hikoi) outcome (2).</p> <p>The student has trialled (3) and made adjustments (4) to the strategies (place responsive approach and nutrition) in order to achieve the physical activity (Hikoi) outcome.</p> <p>To reach Excellence, the student would need to use more coherent and insightful reasoning by questioning and challenging assumptions when explaining the knowledge that underpins the strategies (place responsive approach and nutrition) to achieve the physical activity (Hikoi) outcome.</p>

Student 2: High Merit

NZQA Intended for teacher use only

Hikoi

After deciding on the location of our Hikoi, we focussed on selecting personal and group outcomes as the direction of these would heavily influence what personal satisfaction we received from the Hikoi. Our overall class outcomes for the two day Hikoi included:

- **Learn about the history of locations we pass through and learn about deeper meaning (Place responsive approach)**
- **Complete the Hikoi safely (physically emotionally and psychologically)**

Separate from the class outcomes I also set personal outcomes for myself to achieve. These included:

- Complete every leg of journey without requiring assistance (includes fitness level).
- **Plan and devise my meals for the trip to ensure high energy levels.**
- Evaluate trip and plan clothing and possible risks to ensure a successful Hikoi.

Strategy 1 (Place responsive approach)

As discussed in class, in the past Outdoor Education placed a military approach upon our interaction with the environment. This involved strenuous activity and long journey legs as part of the Outdoor Education course. Although coming out of this, students were left with the feeling of achievement and enduring hardships in order to complete the tasks, it was highly likely most of them would not return to the outdoor environment and would no longer view the outdoors and nature as somewhere of salvation from everyday life. Because of this our outdoor education course will take a different approach aimed at allowing students to increase their outdoor skills as well as becoming aware of the importance of the outdoors in everyday life. This is where the place responsive aspect of what is taught in our Outdoor education class comes about. It also allows for the knowledge of local Whenua and historical aspects to be introduced as learning aspects to our outdoor education experience. Through the introduction of place responsive learning, it allows us to feel a connection to our chosen outdoor environment. An example of this is on our year 12 trip to DN Island where we did not land ashore on the island as this was against the thinking of the local iwi. By being aware of the cultural and natural history of the location it allowed me to feel a stronger connection with the island. Instead of just being a piece of rock that we visited it portrayed a stronger feeling of connection due to being aware of it's history. (Place responsive).

To implement this strategy successfully to achieve physical activity outcomes (see above class outcomes), each member of the class will have the responsibility for researching the history about different bays and landmarks we will be paddling past on our day kayak trial. My landmark will be the local maunga. I will research interesting facts about the maunga as we will want to achieve a deeper meaning and more connection with the places we visited on our kayak. For example, (refer to section 1 of the planning appendix) This means we could become more connected to the area that we live in and return and share with family members.

Reflecting on our practice one day kayaking trip, our place responsive knowledge helped to improve our historical knowledge of our local area. We learned about the significance of the journey we took in the harbour tracing the trip made by ancestors to fishing grounds and historical landmarks. For example, (refer to highlighted section in reflection log) I enjoyed the way the Kaumātua at the start of our day trip shared through personal stories, myths and legends that have been passed down through his family. This made more connection to the kayak trip on the harbour that we were following the route our ancestors had travelled to their fishing grounds. I realised I needed to do more than my brief facts I had presented.

I made an assumption that I knew my own environment. However, it was from my own narrow perspective of fishing off the rocks with my dad rather than from local iwi perspective. This means that

I could be missing out on what happened here in the past. The place responsive approach also challenges and questions the need to provide student opportunities that are high risk and strenuous outdoor experiences. However, from my kayak experience this is not necessarily the case. The trip was enjoyable because I had time to enjoy my surroundings and I learnt more about the stories of the ancestors of this area rather than just rushing to be first to the destination. By being aware of the cultural and natural history of the location it allowed me to feel a stronger connection with the island on our kayak trip.

So now, I could see that I need to adjust my strategy by telling more about the stories from different perspectives about the landmark of maunga that was my responsibility to research and share with the class rather than just tell facts found on the internet. The personal stories of the ancestors will make for better understanding connecting the past. For example, in my research I will have to improve on making the connection by making the history come to life. I intend to do this by role playing using the members of the class by preparing them scripts and props. I am also going to explore the possibility of travelling across DN Bay by waka ama so we will be able to connect more with how my iwi ancestors travelled. For example, (see intended planning section in my reflection log). Therefore, this will engage my class mates to make a better connection with the local area and will enhance our Hikoi experience. Hopefully my classmates will return and share with their families.

4

Strategy 2: Plan and devise my meals for the trip to ensure high energy levels

As part of my planning I also will look into planning and devising a nutritious meal which would help with the overall goals of having an enjoyable time as food can be a great morale booster after a long day. Our Hikoi will take place over two days where we depart school at 8am on Monday 29th and arrive back at approx 4pm Tuesday the 30th. Because of this I will have to plan my meals from Breakfast onwards to dinner and a full day on the 30th up to lunch time. In order to ensure a constant metabolism and reduce fluctuating energy levels I will split my meals for Monday and Tuesday into numerous smaller ones. This will help to provide my body with a constant supply of calories and maintain constant blood sugar levels. Because we will be completing high physical activities, I will incorporate a 50/30/20 split of Carbohydrates/Protein/Fats ratio. I will base my carbohydrate intake on foods with a low glycaemic index, as these will result in a slow increase of the level of glucose within the blood and hence slow raising of insulin levels. For example, (see Table 2). This will assist in keeping me full and energized for longer. This will help with the overall goals of the Hikoi as adequate nutrition will result in a better physical and emotional levels. Protein and fat intakes will also heavily influence this. Because I will be partaking in moderate physical activity, my energy intake will be required to be higher than usual. Also times when we are stationary, energy will be lost to the environment in order to maintain body temperature. This also brings the opportunity to achieve some of the other overall camp goals. Thus being to form relationships. In order to minimise energy lost to having to maintain body heat when stationary, it allows the possibility for assisting others in the class who may require assistance...

1

Reflecting back on my food planning for the one day practice kayak trip. I needed to think about planning more snack food. Refer to table 1 for a variety of foods I should consider to provide me with the necessary energy for paddling. I under estimated the amount of energy padding used as the weather was quite windy and overcast. Refer to log book comments where I stated how hungry and tired I felt. I also know this because the class had to keep waiting for me more and more as the day went on.

3

On the 2 day Hikoi (kayak and tramp) the adjustments I will need to make are the following: More snack food using the 50/30/30 spit of carbohydrates/proteins/fats ratio. For example, refer Table1 for food choices. I will also plan to take extra snacks in case other class members need an energy boost during day Hikoi. This means I will better fuelled to be able to keep up with the class throughout the 2 day hikoi and the class will be able to complete the 2 day Hikoi safely (physically and psychologically) and have a lot more fun. ...

4

	Grade Boundary: Low Merit
3.	<p>For Merit, the student needs to devise in-depth strategies for a physical activity outcome.</p> <p>This involves selecting and explaining, using coherent reasoning, the knowledge that underpins the strategies to achieve the physical activity outcome.</p> <p>The student has selected and explained, the knowledge that underpins the strategy (continuous training and intensity) to achieve the physical activity (triathlon) outcome (1).</p> <p>The student has selected and explained using some coherent reasoning, the knowledge that underpins the strategy (overload) to achieve the physical activity (triathlon) outcome (2).</p> <p>The student has trialled (3) and made adjustments (4) to the strategies in order to achieve the physical activity (triathlon) outcome.</p> <p>For a more secure Merit, the student would need to use:</p> <ul style="list-style-type: none"> • more coherent reasoning when explaining the knowledge that underpins the strategies (overload) to achieve the physical activity (triathlon) outcome • coherent reasoning when explaining the knowledge that underpins the strategies (intensity and continuous training) to achieve the physical activity (triathlon) outcome.

Student 3: Low Merit

NZQA Intended for teacher use only

Physical activity outcome – to complete a triathlon 300m swim, 10km cycle and 3 km run in 48 mins

Strategy: Continuous training

I have selected continuous training as my first strategy. The reason why I have selected continuous training is I need to work on my aerobic base for all 3 disciplines (swim, bike and run) as I have no experience in triathlon particularly the swim and bike disciplines. I will need to consider each of the disciplines, frequency, duration and intensity as these are all important factors of continuous training. Frequency is key if I intend to gain any benefits from continuous training. The benefits being the development of the aerobic and anaerobic energy systems. This will be important in my triathlon training because (see appendix 2). I intend to start at least 3 sessions per week and slowly build up to at least 6 sessions. I will need to balance all 3 disciplines Continuous training involves working for a prolonged period of time (over 20 minutes) with no rest periods, at a steady intensity level. In order to achieve developing my aerobic base I need to start with at least 20 mins and build up to longer distances slowly. This will ensure the heart and blood vessels will supply oxygen required to my working muscles over the triathlon training. This means (see appendix 3). Based on my research, I can see intensity will be the most important factor of my continuous training at the early stages of developing my aerobic base as the intensity needs to match my fitness level and then I will be able to make adjustments to my workload accordingly. This is due to your heart rate being directly related to exercise intensity and to oxygen consumption. From taking my heart rate I should be able to determine whether the pace will be too slow or too fast. Examples of how I intend to use frequency, duration and intensity for the 3 disciplines of the swim, bike and run can be seen in the highlighted sections of the attached programme(see appendix 1). This will also help me to build cardiovascular and muscular endurance. These components of fitness are both important for completing the triathlon because (see appendix 3). Therefore when I apply this method of training to my triathlon programme, I would expect ... For example,(see appendix 1).

1

This strategy of continuous training also will help me towards my physical activity outcome (triathlon) because I have estimated the duration of the triathlon will take me approx. 48 minutes to complete. I intend to finish the 300m swim in 8mins, the bike in 22mins and the run in 18 mins. I have estimated these based on the in class trials (see appendix 1).

Trialling and Adjusting

After completing the first 3 weeks of my training programme I think continuous training has been working effectively for me. I have noticed it is getting easier for me to complete each training session, especially the sessions which go for longer (time and distance). For example, in my last few training sessions (12/8, 14/8, 15/8 and 17/8) my training heart rates had plateaued (see reflection logs). I have seen improvements in my biking and running times. For example, I can now run 3 km in ... This shows that (see reflection log).

3

For the next 3 weeks I will make some adjustments to my continuous training sessions. I will need to increase the intensity of my continuous training sessions to be able to achieve my triathlon outcome of 48mins. For example, ... I think this will allow me to... (see reflection log).

4

Strategy: Interval It will be important for me to include some interval training sessions in my training programme because this is another great way to improve cardiovascular endurance, this is an important component of fitness for the Triathlon. Interval training involves training using work and rest periods, for example, working for 30 seconds at a high intensity (90-100% MHR) then having a rest period (30-60% MHR). I will use interval by having longer work periods (1 min) at an intensity of 60- 80% MHR and shorter rest period (15 seconds), working at this intensity and having shorter rest periods are important because I will want my aerobic system (the main energy system for triathlon) to be stressed and this will help me to build my endurance. This will allow my body to make metabolic adjustments, which will increase aerobic capacity. During the high intensity period, due to the amount of stress you are putting on your body, your body can no longer provide enough oxygen to carry out aerobic respiration. We will start to use our anaerobic system which also produces lactic acid, which is why we cannot physically stay at this intensity for any more that 30 seconds to a minute, because this lactic acid causes our muscles to break down and fatigue. We will then go into the rest period of the training, where your aerobic system kicks back in. Your aerobic energy system must work extra hard to refuel the muscles with oxygen and break down the lactic acid accumulated. During this aerobic stage you will build stamina and cardiovascular endurance.

In order for the methods of training to be effective, I will also include the following principles of training.

Strategy: Intensity Making sure I will work at the correct intensity (60- 90% MHR) in each of my training sessions is crucial. For the physiological systems to make adaptations they will need to be put under stress, If you don't push your body enough you won't notice significant improvements. Intensity will be important for interval training because when using interval training the work period we should be aiming for is within our anaerobic threshold (90–100% MHR), this will allow us to stress our anaerobic system. It will also allow the body to make metabolic adjustments which will increase the body's aerobic capacity. Knowing your target zones in training will help you to know if you are working at the right intensity. There are differing views from my reading about what intensities you should train at. For example, ... This means for my triathlon training... (see appendix 1) In continuous workouts, I will look to work at about 60-80% of my maximum heart rate (125.4-167.2 BPM). In my interval trainings in the work periods I will aim to work at around 90-100% MHR (188-209 BPM) and during the rest period at about 30-60%.

1

Trialling and Adjusting

After completing the first 3 weeks of the training programme, I still need to monitor my intensity if I am to improve my triathlon time as I forget to take my training heart rate. ...

For the rest of my training sessions. I need to make sure I wear a heart rate monitor to help me to better monitor my heart rate and which training zone I am working in, this will make the sessions more effective as I am able to target a specific training zone and energy system. Because I feel like I have developed a good endurance base I will also be focusing on working at a higher intensity, this will help me to build speed and therefore improve my overall time for the final triathlon. ...

Overload: The principle of overload means gradually adding stress to your training sessions and continually working harder as the body adapts to the current intensity of the training sessions. To improve cardiovascular and muscular endurance it is important to work for longer periods of time, increasing the duration as the body adapts is important to keep making improvements. Training is all about stressing the bodies systems (muscular, cardiovascular, respiratory) to a stage where they need to make changes to adapt to this stress. This is supported by research which states... This means... (see appendix 5). In my training programme, I will start at a low intensity level (for example refer to training programme week 1) because it is my first time training for or completing a triathlon. I asked my friends' father who competes in triathlons how I will apply overload in my programme so I will be able to successfully progress into the full triathlon distance. For example, for the swim... for the bike... and for the run (refer to the highlighted section in my intended training programme). This programme shows how I will start off by working on each discipline (swim, cycle and run) of the triathlon separately (e.g. Monday go for a 2km run and Tuesday swim 300m (which can be seen in the orange highlighted section in appendix one). From here, I will plan to run and swim further distances with the intention of improving my original times on running and swimming. For example, (see appendix 1). If improvements are not happening this will mean that I am not applying my strategy as intended and will need to revisit frequencies, durations and intensities.

2

Trialling and Adjusting

After completing the first 3 weeks of my training programme I think I have been overloading my body by gradually increasing the intensity and duration of my training sessions. I know this because I am starting to feel fitter, my heart rate doesn't increase so much so quickly and my recovery time is improving. I am trying not to increase these too much so that I avoid injury and fatigue. An example of this is in week 1, my 3 runs were 2km, week 2 was 2.5km and week 3 was 3km. I made sure to time how long each run took to complete so I was able to use this as a start point to build on. This will allow me to continue overloading by either increasing the distance I run or trying to beat my time.

3

In last 3 weeks of the programme, I don't really want to increase the distance too much as the run in the triathlon is only 3km as I had intended from my original training programme. Instead I will work on improving my time for the 3km run and include some sessions which include biking and running. This will help me to improve my overall time for the final triathlon and also get my body used to the transitions between each of the stages. Because my longest bike distance in the first 3 weeks was 10km I will be working on increasing the distance to 15km. The reason for this I have joined my friends' dads Sunday group rides. They do a minimum of 20km. This will help my endurance by overloading beyond the cycle distance of the triathlon.

4

	Grade Boundary: High Achieved
4.	<p>For Achieved, the student needs to devise strategies for a physical activity outcome.</p> <p>This involves:</p> <ul style="list-style-type: none">• selecting and explaining the knowledge that underpins the strategies to achieve the physical activity outcome• trialling and making adjustments to the strategies in order to achieve the physical activity outcome. <p>The student has selected and explained the knowledge that underpins the strategies (goal setting) to achieve the physical activity (duathlon) outcome (1).</p> <p>The student has selected and explained using some coherent reasoning, the knowledge that underpins the strategy (continuous training) to achieve the physical activity (duathlon) outcome (2).</p> <p>The student has trialled (3) and made adjustments (4) to the strategies (goal setting and continuous training) in order to achieve the physical activity (duathlon) outcome.</p> <p>To reach Merit, the student would need to explain using more coherent reasoning when explaining the knowledge that underpins the strategies to achieve the physical activity (duathlon) outcome.</p>

Student 4: High Achieved

NZQA Intended for teacher use only

My outcome goal is to complete a 2km run, 14 km cycle and 2km run mini duathlon in 40m 12 s

Strategy: Goal Setting

From my research, I know that my goals must be SMART goals. This means they need to be specific, measurable, achievable, realistic/relevant, and time bound. Making S.M.A.R.T goals ensures that I have something to work towards and that what I am aiming for is achievable. If my goal is achievable, I will be stretched slightly which means that I will be motivated to keep training because I know I can succeed. If the goal is too easy or too hard, I will be more likely not to achieve my duathlon outcome. I know I can achieve the time of 40m 12s because in the practice duathlon I ran in 45 m 12 sec and my running times for 2km were each 10min. I should be able to take 5 mins off my bike time as I will be getting some more technical help from the school's cycling coach. One of my short term goal will be to cycle is to join the school cycling team's training session for at least 3x trainings/week. My other short term goals will be learning goals as I have never biked before. This is relevant to help me to complete my duathlon outcome faster. The coach will be able to help me with the technical aspects of the bike discipline. Having short term goals which I reflect on and adjust regularly is important so I will be able to keep making progress. For example, for cycling ... For running, (see blue highlighted section of my intended training programme). I know having goals will help me to provide direction for my triathlon. I will also have to make sure there is a set time frame to achieve my goal that is written down and shared with others. For example, I plan to complete my mini duathlon 2km run, 14km cycle and 2km run in 40m 12 in the community event in 8 weeks. I intend sharing with my teacher, training buddies and in my diary. This means (see the green highlighted part of my intended training programme).

1

Strategy- Methods of Training (Continuous and Interval)

The methods of training I plan to use during my training programme are continuous and interval. The main reason I will be using these methods is because they are specific to the requirements of the duathlon. Continuous training will help to improve cardio vascular and muscular endurance (these are important components of fitness for the duathlon) because it involves exercising aerobically without stopping for at least 20mins. The mini-duathlon is a continuous event that involves running and cycling and it takes place over a long period of time (about 45 mins). When doing continuous training, I will also need to make sure that I am training at the correct intensity between 60% and 80% of your maximum heart rate, so that my aerobic system becomes familiar with what is expected in the final duathlon. This means that it is more beneficial to your body because it helps it adapt to running or cycling long distances without stopping which will provide me with a good aerobic base. Therefore, the more work I will perform aerobically, or in the presence of oxygen, the more efficient I will be. Prolonged aerobic training produces muscular adaptations that improve oxygen transport to the muscles, reduces the rate of lactate formation, improves the rate of lactate removal and increases energy production and utilization. These adaptations occur slowly over time. Some examples of how I will use continuous training during my programme to build my aerobic base can be seen in my intended training programme highlighted yellow.

2

I also plan to include interval training into my training sessions, this involves short bursts of speed which will help me to train for the transition between legs e.g. run to cycle and cycle to run. It will be especially important to help me maintain speed in the last 2km run of the duathlon, I want to be able to do my last run quickly, therefore by including interval training it means that my muscles should get used to changing speeds quickly which will then help me to have a smooth transition from run to cycle.

Strategy- Principles of Training (Variety)

Variety is also important to add into training programme as it ensures that you don't get 'bored' and that you are motivated and enjoying training, this will help to achieve your goals. When training for a physical activity such as a duathlon you only need to be training for running and cycling but after doing this for a few weeks you will start to become less motivated because you want to do something different. Variety ensures

that you are doing different exercises and training which still helps to improve important components of fitness and also so you stay motivated and train hard. Allowing there to be some variety ensures that you will stay focused and training which will all then pay off at the end of the final duathlon e.g. I will add in a different training session once or twice a week such as going to the gym or doing a circuit. This allows me not to stay focused and not become bored.

Trialling and Adjusting

Having completed a training programme before, I know what I need to include (Methods of Training) and how long I need to be training for to see improvements in my fitness. I think that I have used the correct knowledge in my training programme as I improved my run times, therefore I know that the Methods and Principles of Training that I have included are working and helping me to improve my overall fitness.

Reflecting on my goal setting, I tried to achieve my outcome goal of 40m12 s for the mini triathlon at the 4 week time trial over the actual community event course. I was able to make small gains in my training to both my runs in my mini duathlon practice. I made improvements in both my runs, my first run improving by 12 seconds and the final run by 1 min. My final practice time for the mini triathlon ended up at 44 mins. Even though I am still way off achieving my outcome goal. I did achieve attending the 3 cycling sessions each week. However, I need to be able to set SMART learning goals as there is so many technical aspects for the bike discipline to learn. For example, drafting, transitioning between the run/bike/run. I did learn how to set my bike up so I am now more efficient. I feel my running training was compromised due to the time spent on my bike.

3

So now I am going to have to adjust my mini duathlon outcome goal to 42 mins from 40m 12 s to make more achievable in the 4 week time frame I have left to train. Also I will have to include more short term goals focusing on learning how to pace myself and the transitioning phases of the run to bike and bike to run) in the final 4 weeks of my training to be able to be to achieve my new goal. These adjustments will allow me to... For example,(see my diary reflection).

4

Reflecting on my continuous training, I know I need to train doing longer distances so that I am stronger when running the run section without stopping and at a constant pace. I think I will need to start building up to longer distances on the bike to be able to complete the mini duathlon to the best of my ability. While this will benefit my cardio vascular and muscular endurance, it will give me more time on the bike to be more efficient with when to change gears and how to bike as effectively as possible, for example, the line to take on the road depending on the camber. This will help with achieving my mini duathlon goal.

3

I know that I will need to adjust my training programme to include progressive overload because now I am becoming fitter, in order to keep improving I need to start putting a bit more stress on my body. I will do this by gradually increasing my runs from between 2 - 4km to improve my cardiovascular endurance. Also for cycling, I will gradually increase the cycle distance each week by 2 km each week. This means I will be slowly progressing build up my aerobic capacity and muscular endurance so that I can achieve my outcome goal to complete the mini duathlon in my new adjusted time (see goal setting strategy). The new revised training programme shows these adjustments in the final page.

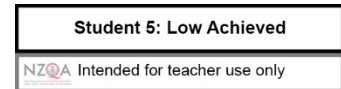
4

	Grade Boundary: Low Achieved
5.	<p>For Achieved, the student needs to devise strategies for a physical activity outcome.</p> <p>This involves:</p> <ul style="list-style-type: none"> • selecting and explaining the knowledge that underpins the strategies to achieve the physical activity outcome • trialling and making adjustments to the strategies in order to achieve the physical activity outcome. <p>The student has briefly explained knowledge that underpins the strategies (practicing skills and buddy system) to achieve the physical activity (scuba) outcome (1).</p> <p>This student has trialled (2) and attempted to make adjustments (3) to the strategies (practicing skills and buddy system) in order to achieve the physical activity (scuba) outcome.</p> <p>For a more secure Achieved, the student would need to:</p> <ul style="list-style-type: none"> • explain how and why in more detail the knowledge that underpins the strategies (practicing skills and buddy system) to achieving the physical activity (scuba) outcome • explain how and why in more detail the adjustments made to the strategies to achieve the physical activity (scuba) outcome. Specific examples should support explanations.

My chosen outcome is: gaining snorkelling and scuba skills to plan a safe, challenging and enjoyable outdoor experience at the sea location.

My strategies are:

1. Practice skills while the instructor is teaching others
2. Using the buddy system
3. Making sure that I have the correct equipment



Research extract

Skill acquisition When we learn a skill, whether it is sports, music, painting, chess, or something Completely different, some experts contend that we go through various stages over time. These stages reflect two things:

- 1) Our increasing sophistication relative to the skill
- 2) Our metacognitive awareness of that Sophistication, or our understanding of our understanding.

The Conscious Competence model helps to explain the process by which we move through these stages to acquire a skill and an awareness of our level of acquisition. Unconscious incompetence is the first stage in the model. In this stage, we don't know much about the skill, and we don't know how much we don't know. In other words, we have only a very rudimentary understanding of what mastery of the skill might entail-and we will eventually find out that understanding is inadequate...(<https://breakingmuscle.com/sports-psychology/the-4-stages-of-skill-acquisition>)

Strategy one

I selected the strategy 'practicing skills while the instructor is teaching others' because I felt that it will be very useful for completing my chosen outcome which is 'gaining skills to plan a safe, to challenging and enjoyable outdoor experience.' I will apply this strategy throughout the whole scuba diving topic because I know that by learning a skill that the instructor has taught, then practicing it while he teaches others will be beneficial for me because it gives me the opportunity to master each skill each lesson before I have to perform it in an open setting, at the sea location. This means I will be able to gain knowledge and practice on skills so I could plan a safe, challenging and enjoyable outdoor experience. Some of the different skills I will learn from the instructor and then practiced when he is teaching others will be equalising, mask flooding/clearing and gear assembling. My time frame, will show the different lessons we will learn different skills on, and which lessons we are to practice skills. For example, (see timeframe attached).

I found this strategy to be very beneficial for me all the way throughout the topic, however, I also found that at times I tended to get bored and went off task for some of the time that the instructor was teaching others. I found that this was because I learnt my skills quickly and as there was only one instructor and a large group of students, it took a long period of time for the instructor to get around everyone. Therefore, in this time found practiced my skill that he had taught me and then got bored so began to get off task. I realised that this was not a wise use of my time So I chose to adjust my strategy to "practicing my skills while the instructor is teaching others, and ask Miss C or the instructor for suggestions on what else I can practice after these skills have been mastered'.

Equalising My research shows that there are many skills involved with scuba diving. One of these skills includes equalising. The goal of equalising is to create pressure inside the ear canal that matches that of increasing pressure from the outside. ...

Mask flooding/clearing

Another skill that I will practice while the instructor is teaching others is mask flooding. Mask flooding is a useful skill to have for many circumstances such as when your mask fogs while you are underwater, if your mask gets knocked or bumped by another diver or if you laugh or smile underwater which would cause the muscles of your face to create channels that will let water into the mask.

In these circumstances, the easiest way to remove water from the mask will be to let water into the mask and then clear it. To clear water from the mask or to replace it underwater, I will need to replace the water with air. When you exhale air into the mask, the air rises to the top and the water flows out the bottom. Replacing the mask underwater is the same process as on land. The steps to clearing water from your mask are: (see table B). When breathing from a scuba, you will need to perform these steps to clearing your mask deliberately and slowly. It is important that you are always consciously thinking about what you are doing and concentrating on inhaling through your mouth and exhaling through your nose. It is important to do this because this pattern is different from normal breathing and is also different from the normal pattern of breathing on scuba. This means that if you are not concentrating on inhaling through your mouth and exhaling through your nose, you may forget and

1

accidentally inhale water through your nose which will cause you to choke and cough. A single, sustained exhalation is more effective than strong or short bursts of air. It does not take a lot of air to completely clear a mask. Removing water from your mask is an important skill to have for diving, and it must be practiced and repeated until you are comfortable with using it underwater. Initially, a dive instructor will have you practice this skill in shallower water, then you will need to repeat it in deeper water.

I found this technique and skill of mask clearing very useful in both of my open water dives as was in a small group that swam very close together when underwater. This meant I would get the occasional bump from another member of my group and found that when this happened, my mask began to fill up with water and I had to close my eyes. To fix this, I used the mask clearing skill that the instructor had taught me in the pool sessions, that I had also practiced while he was teaching other people. I had managed to perfect this skill by practicing it lots in the pool sessions, then being able to use it in a real-life situation while doing my open water dives. However, I found that because the pool and the sea are very different environments, the first time I did my mask flood and clear underwater in the sea, got a shock at the coldness hitting my face. I had not experienced this in the pool sessions as the water was a lot warmer, so I found that in the beginning I felt uncomfortable performing a mask flooding and clear in the sea.

To overcome this, I decided to practice this skill multiple times in the sea while other people were completing their skills with the instructors, as I knew I needed to feel completely comfortable with performing this skill as it is very vital. I found that doing this helped me get used to the colder water on my face and made me feel comfortable performing this skill in an open setting

Strategy two

The second strategy that I selected is 'using the buddy system'. This was my second strategy because I felt that it is a useful way to keep safe in an open environment and make sure that nobody from the group gets lost. This strategy also relates to my goal which is 'gaining skills to plan a safe, challenging and enjoyable outdoor experience.'

Using the buddy System relates to my goal as it contributes to planning a safe, challenging and enjoyable outdoor experience. I will apply this strategy throughout the whole scuba diving topic because I know that by using this skill, it contributes to mine and my buddy's safety. For example... In my time frame, it shows the different lessons that we will learn each skill on. Throughout this timeframe, I will be using this strategy in each pool lesson and also in the open water sessions at sea location.

I found that the buddy system was very easy in the pool as the visibility is much better and the area is a lot smaller. When we got to open water conditions, I found that the buddy System was a lot harder to use and required a lot more concentration. This is because the new environment was a lot different from being in the School pool, as the area was much larger and there was quite limited visibility. Because of this, I found that I had to stay closer to my buddy and check on them a lot more often than had to when we were scuba diving in the pool. By trialling this strategy in the pool, I found that it was successful in working and keeping us both safe. I also found this strategy Successful in open water as it is a vital way to keep both of us safe, in tougher conditions, however I found I was not very prepared for the harder conditions and had to make sure I was putting in a lot more concentration and keeping close to my buddy and continuously checking on them.

It is easy to keep track of your buddy in controlled conditions where the visibility is good and the area is limited, such as the school pool. Maintaining contact with your buddy in an open environment is not as easy, which would be the Sea. There are multiple points to follow to make sure you are keeping track of your buddy and staying safe in an open environment. These steps are (see table C).

Strategy three

Gear assembling is crucial to know for diving. The gear includes cylinder, buoyancy compensator (BC), and regulator as well as the weight belt. It is important for a diver to know that you are responsible for the proper assembly and operation of your equipment. My third strategy is 'making sure that I have the correct equipment.' This is because scuba diving is a high risk activity and you need to take many precautions to make sure you are safe and have the correct equipment. This strategy also relates back to my goal which is 'gaining skills to plan a safe, challenging and enjoyable outdoor experience. ...

	Grade Boundary: High Not Achieved
6.	<p>For Achieved, the student needs to devise strategies for a physical activity outcome.</p> <p>This involves:</p> <ul style="list-style-type: none"> • selecting and explaining the knowledge that underpins the strategies to achieve the physical activity outcome • trialling and making adjustments to the strategies in order to achieve the physical activity outcome. <p>The student has provided some examples of how strategies (continuous training and progressive overload) are intended to be used to achieve the physical activity (5.2km run) outcome (1).</p> <p>The student has trialled (2) and has started to make adjustments (3) to the strategies in order to achieve the physical activity (5.2km run) outcome.</p> <p>To reach Achieved, the student would need to:</p> <ul style="list-style-type: none"> • explain (how and why) the knowledge that underpins the strategies (continuous training and progressive overload) to achieve the physical activity (5.2km run) outcome. More detailed examples should support explanations. • explain in more detail how and why adjustments were made to the strategies (continuous training and progressive overload) in order to achieve the physical activity (5.2km run) outcome. More detailed examples should support explanations.

My final outcome goal for 6 weeks is to run the GV 5.2km run in 26m 30s on the 1st of July.

Student 6: High Not Achieved

NZQA Intended for teacher use only

I need to set goals so I have a target to work towards. Also it gives me extra motivation as I will work harder to ensure I achieve this goal. Having a goal helps me plan my training and I can have check points along the way to make sure I keep on track.

Strategy 1 Methods of Training - Circuit Training and Continuous training

Squats: Squats involve crouching down with my legs shoulder width apart. I had to do as many squats as I could, as fast as I could, in 50 seconds.

Skipping: Skipping is when you jump over a rope. I had to do as many skips as I could, as fast as I could, in 50 secs.

Jump lunges: This is where I had to do a lunge and jump in between while I swapped legs. I had to do as many jump lunges as I could, as fast as I could, in 50 seconds.

Jumping: This type of jumping involved jumping onto a box, then back onto the floor as many times as I could in 50 seconds

.... The Indoor Circuit involved all types of exercises, so I could use most muscle groups in the body, for example, quadriceps, calves, biceps, triceps, gluts, shoulders, abdomen, back, hamstrings, etc. For the indoor circuit training, a short term energy system is used. The Anaerobic system will... (see training log).

I need to apply continuous training to build up my cardiovascular endurance. This is because (see reasoning in my intended training programme). For example, I will start at the wooden benches on the side of the field, then run on to the field, going around two poles on the other side of the field, this simulates running around objects, on the GV run. Then I will run up the big steps on the slope of the field, to simulate running up the big hills on the GV run. Following this, I will run along the footpath, along the top of the field until I reach the beginning of the circuit again at the benches. I will do 10 laps of this 5km circuit, so it will simulate the same distance as the GV run, as well as the same type of conditions, for example, hills, obstacles and different types of surfaces like grass and mud, concrete and roads.

1

I felt I did well in this type of training, as I completed it in 28mins. This made me feel confident about being able to reach my final outcome goal.

2

In the next 3 weeks, I could improve my training by changing my methods of training. I would do more training that is relevant to what I am training for. Also I was not applying enough overload, so to apply overload for the next 3 weeks I would train more at home not just twice a week at school. I have to train at home at least 3 times a week to achieve overload in my training, if I train this much in the next 3 weeks this shows that I am applying overload.

3

The type of training I will do in the next 3 weeks will mostly be continuous training which will include running continuously, in the first week I will run 5.2km, in week 2 I will run 5.5km and in the third week I will run 6km. Also to add variety I will do some circuit training.

Strategy 2 Progressive Overload

I need to apply Progressive Overload to my training for the 5.2km GV run because I will need to add greater stress loads each week and recover, in order to decrease my run time. For example, I can increase the intensity, distance and frequency. (see highlighted sections in my intended training programme). This is important for making improvements in my muscle mass, fitness and stamina, to help me achieve my goal of running 5.2kms in 26m 30s

I will use Non Aerobic Circuit Training which includes 7 or more different exercises, for example, Shuttles, Burpees, Squats, Bear Crawls, Farmers Walk, Lunges, Star Jumps, etc. I will do 50 seconds per exercise and have a 10 second rest in between each set. To apply more Overload, each week I will add one more activity to the circuit and increase the amount of time spent on each exercise, by at least 10 seconds. Also increasing the break in between each exercise.

1

For this circuit training, I will chose Aerobic exercises that have a High PER (8-10). Also at school, I will do a 4.5km run (9 laps of 500m circuit), this has a PER (intensity) of 8. I will do this once a week to ensure we are applying overload. To increase the distance, I will run 1 lap more each session, so when I do it again, the second week, I will run the 500m circuit 10 times (10 laps/ 5km).

This strategy is working, because the first time I ran the circuit, I completed it in 28 minutes and then the second week I ran it in 27 minutes. This decrease in the time taken to run the circuit, proves that my fitness and aerobic ability has slightly Improved. Also, I can see that my muscle mass has increased and I have gained 2kgs in weight over all.

2

What I could have done differently is increased my Progressive Overload a little bit more so I was pushing myself harder rather than staying in my comfort zone. This would have given me a better improved result. If I increased my Progressive Overload I would have seen increased muscle size, improvements in my strength and endurance. By seeing good results I know this motivates me more.

3

Strategy 3: Social Impact

This strategy, social impact, is where I work out with a friend, rather than alone.

The benefits of this include:

Accountability: You schedule in training time and if you cancel, you will be inconveniencing your friend. Knowing your friend is waiting for you, you will be less inclined to make excuses and cancel, because you don't want to let your friend down.

Motivation: Friends can offer encouragement to keep you going, especially when you feel like giving up.

Learn more Moves: Friends can teach you new exercises and circuits and they can point out things you might be doing wrong.

Two Person Exercises: A partner can help you do exercises that require two people, like medicine ball passes, crunches, push ups etc.

Competition: Your friend may be fitter, faster or stronger than you and this can help you increase your intensity and workout time.

Avoiding Boredom: Having a partner can give you more options, like new exercises and greater intensity.

Having a Free Personal Trainer: A friend may be able to help out as a Personal trainer, especially if you have similar personal Fitness goals. They don't cost anything either.

Avoiding Injury: Having a friend train with you can help if they act as a spotter. They can help count reps, check your technique and help make adjustments before you injure yourself.

Having Fun: Having a Training Partner is more enjoyable than working out alone.

One of the main benefits of working with a partner, is helping to keep me motivated and train harder, so I can make greater improvements, than I would, if I trained alone.

By working in a class group situation, I was able to pace myself against the group and also watch other people's technique. This helped me with my training, especially when I felt like giving up.

Being part of a group means we were able to offer each other encouragement which enabled me to carry on and made me see that I can achieve my long term goal. I enjoy working as part of the group because it makes me more competitive when I see someone performing better than me, it makes me want to catch up to them.

What I learnt about myself during this process was: I train harder when I work in a group or with other people, rather than training alone. This made me want to compete with them and made me want to succeed. I found this was also a good strategy to help me not get bored and keep focused. This was a good way to help me not give up on the task.

While these strategies I used worked ok, and were successful to a degree, I believe that over the next three weeks I could've changed my strategies to get an even better result and increased my level of fitness even more, if I had done a few things differently.

Some of the things I would have changed include;

Each week when I'm not at school, I would've trained more with a friend. So I would stay motivated to train after school even if I was tired, or could not be bothered to work out when I came home from school. ...