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CANDIDATE NO. :

6452



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### **Timescale**

My training programme is going to be completed over a 12 week timescale. This will include at least one session per week in the first 2-3 weeks of my programme including both body weight circuits and my resistance programme. The sessions I have programmed for myself, I hope will improve the muscular endurance in my legs which is required in my sport of gymnastics, in order to prevent fatigue in routines such as a floor routine. I also hope to improve the strength of my core muscles in order to make my movements easier in my routines and also improve the posture and aesthetics during my routines. I will elaborate further on my goals in terms of muscles involved and why they are essential to my sport, in the section below. In order to achieve the goals I am going to set myself and in order to benefit from the training I am doing, I will hope to increase the amounts of sessions I do a week. This will be gradual, for example I will not suddenly increase from 1 session a week in week 1 to 5 sessions a week in week 3, as this is not a sensible and reasonable goal to set myself as it requires me to push my body too far and training would be too hard to see the progression. Therefore the maximum number of sessions I hope to increase to is 3. These sessions will begin short in the first 3 weeks for example ranging from 30 minutes to 45 minutes – allowing me to progress with my exercises but not overwork myself in the beginning. The sessions after the first 3 weeks and up until around week 9, I will increase the length of the sessions to about an 1 hour, where there is a slight intensity increase but not too much considering that I will have increased the session frequency by this point as well. Finally, in the last 4 weeks I will increase the length of my sessions to an hour and 15 minutes and I will have to push myself the hardest in the last four weeks due to the longer intensity and increase in sessions, however hopefully, the last four weeks will show me the most progress from the programme.

# Circuit training log book

## **Goals of the Exercise Programme:**

### **Overall main aims:**

Overall, I would like to improve the muscular endurance of my arms and my legs. This will allow me to power through my routines such as floor and bars, without becoming too tired and my skills suffering from my fatigue. I will therefore focus my programme around the quadriceps group, hamstrings and gastrocnemius; as well as the triceps and bicep brachii and my pectoralis muscles. I would also like to improve the strength of my core which links into the ease of movement and also the aesthetics of my routines. Having good core strength and stability will improve the easiness of carrying out routines and it will allow me to make sure that I using the correct muscles for certain moves instead of relying on other unnecessary groups that may be needed later in the routine, when the core is vital to the move in that moment.

**Short term: (Per session)** – goals that I am hoping to achieve by the end of each session so therefore in a short amount of time.

1. My first short term goal for this programme is to increase the number of tricep dip reps that I complete every session. This is because I not only want to improve my arm strength, but also because I struggle this exercise a lot more than the others in the body weight circuit and wish to improve. By improving the number of the reps of tricep dips that I complete a session, I hope to increase the technique of this exercise. If I increase the technique, I can reduce the risk of using the wrong muscles and injuring myself through strain.
2. My second short term goal is to feel a sense of achievement within the programme. For example, I would not feel motivated if I finished a session and the amount of reps or my technique had rapidly dropped, therefore I wish to feel good about myself after each session. I have purposely made sure that my circuit is not too difficult for me in order to keep my confidence levels high and ensured that progression is not too sudden and therefore is eased in. Hopefully I can use circuit training as a way to

**Long term: (end of programme)**

- My first long term goal is to improve my muscular endurance. My main aim within this target is to improve the muscular strength in my legs. The muscles included in this goal are mainly the quadriceps group, gastrocnemius and gluteus muscles group. These muscles are the ones that combine with speed to produce the power needed for tumbling and vaulting in gymnastics training and competitions. I have included an exercise which targets each of these muscles in order to progress and reach my goals. For example; the squats in the body weight exercise will target my gluteus muscles, whereas the leg extension in the resistance

## Circuit training log book

programme will target my quadriceps group. The reason this is what I aim for, is because my chosen sport is gymnastics which consists of short but incredibly detailed and compact routines. For example a floor routine lasts for only one minute and a half, however consists of four skilful tumbles (both forwards and backwards), leaps, other basic skills and dance - all whilst co-ordinating yourself to the beats of the chosen music.

Due to the routine only being 1 minute and a half, the body is using the anaerobic energy system as it is working for less than 2 minutes and can produce the energy needed without requiring oxygen; and the power used in these routines - such as in the tumbles - is explosive as there are short bursts of power and energy instead of long periods of time in which the body is combining its speed and strength. There is barely any time to stop in these routines and therefore it is essential to have good muscular endurance to ensure that routines are completed with not only excellent execution but also safely. It is important that my muscles can endure these tumbles otherwise I will not be able to focus on technique as much as focusing on safety. For example, in a backwards twist, if my muscles are too tired to gain enough height, I will have to apply more power - resulting in more fatigue - and my main priority will not be the technique of the tumble. This can be dangerous as it can result in dangerous landings and injuries due to lack of height/preparation.

- My second long term goal is to improve my core strength for example, improve the strength of my rectus abdominals and transverse abdominals. Not only does gymnastics require strength through the basic abdominal groups, but moves such as twists, require a level of strength in the oblique's also. This is why I have included all of the core exercises in the resistance programme - such as exercises with the Swiss ball/medicine ball. I hope to increase the number of these exercises that I do each week and they will also hopefully get easier. Core strength is important in my sport as most skills/routines require a mixture of muscle strength from different groups and therefore most skills are harder to complete with good execution, with a lack of core strength and stability. Core strength also helps to improve posture and alignment and therefore which also improves the aesthetics of routines. This is important because gymnastics focuses on fluency and appearance of skills, therefore artistry is a big deduction make by judges in competitions. Having good core strength is also extremely important in carrying out routines. For example; core strength can help hold the handstand before a clear circle in a bar routine. This makes it easier to focus on the harder skill instead of wasting thinking time and energy on the simple handstand and other basic skills.

*Goals*

### **SMARTER – Goal setting**

#### **S**- SPECIFIC

The goals I have set have to be specific and relevant to my first choice sport therefore gymnastics. Gymnastics requires a lot of power and muscular endurance which is why I hope to increase my leg strength and core strength. Most routines cause fatigue fairly early into them due to all of the different muscle groups that are working to carry out different skills. Muscular endurance is important in the legs, as many different positions are required and you have to hold them. This reason is the reason I wish to improve on my leg strength and increase the reps of leg exercises. Core strength is also essential in gymnastics as all skills require strength from more than one muscle group and most of these groups involve the core muscles. For example, during a mount on a beam – press to handstand for example – the arms are the main muscle group that is working, however it is vital to have good core strength in order to lift your body up to handstand. Therefore, I have added a lot of stomach exercises into my resistance programme and wish to improve on my core exercises in the body weight exercises.

#### **M**- MEASURABLE

Each goal that I have set for myself is measurable and does not rely on personal opinion to see a progression. For example, to measure whether my core strength is improving, I can record the amount of reps I complete during the body weight circuit and in the gym. If the number increases from say 20 reps to 23 reps in one week, an improvement in core strength is evident. This is similar for leg strength as I can also measure the reps of exercises which focus on my legs such as squats and lunges, to see if the number increases; and therefore shows an increase in leg strength. I can also measure leg strength and muscular endurance improvement, by recording whether my 1 rep max improves on the resistance programme during exercises like the leg extension.

## A - AGREED

I feel like this programme and my goals are suited to my sport and will be beneficial to me and my training. All of the exercises in my programme will help to improve the areas I find my weakest in my sport, in this case muscular endurance in my legs and core strength. Therefore I am happy that my goals are also achievable and not unrealistic.

## R - REALISTIC

My goals, in my opinion are realistic. If I set myself a ridiculous goal that was unachievable – for example, increasing from 20 squats in 30 seconds one week, to 60 squats in 30 second the next week – it would be completely pointless and not beneficial. If my programme was too difficult such as the goals being too demanding to reach, I would most probably use the wrong technique and risk the chance of using the wrong muscles and injuring myself. An injury can therefore decrease the rate of improvement and motivation and therefore have a largely negative impact on my chance of reaching my goals. However if my training is too easy and the goals are easy to reach then I would not make many adaptations in my training and would not benefit from the 12 weeks of the programme. Therefore I have focused on gradual improvements which I can benefit from in my training instead of unachievable goals which waste the time and energy that could be focused on essential weaknesses.

## T - TIME

The time scale of my programme is also an important factor because it provides a schedule and timetabled programme in which the goals can be completed. The programme is 12 weeks long and therefore by the end of the 12 weeks I hope to achieve my long term goals. The short term goals are hopefully to be achieved by the end of each session. Personally, I think that these timescales are achievable, for example one of my short term goals is to improve my fitness, and I think this is achievable because each week I am increasing the intensity of the exercises and the repetitive programme will help to improve my physical fitness and therefore this goal will be achieved if I keep at my programme.

### **E** – ENJOYABLE

Training has to be interesting and varied in order for a performer to be motivated and prevent boredom. I also have to make sure that the programme is not too hard to complete each week, as it would become de-motivating. The circuit is 'enjoyable' as the exercises are all different, working on different muscle groups and different types of movement. It is also varied as the exercises are spread out, for example – not all arm exercises are packed together in order to make it easier.

### **R** – RECORDABLE

In order to track my progress, I need to ensure that I record my reps and results. Therefore I have a table of results for both the resistance programme and the body weight programme, in which I record reps and weight amounts at the end of each exercise. This allows comparison throughout the 12 weeks and allows visible progression.



## Circuit training log book

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### SPECIFICITY:

Each exercise should be related to your sport and goals e.g. one of my goals is to improve my core strength and therefore I have included exercises which focus on my core muscles such as rectus abdominis and transverse abdominis. For example in the body weight circuit the sit ups and twisted sit ups – which also work the obliques. In the resistance programme I have included, total ab crunches, medicine ball Russian twists, inclined sit ups and Swiss ball ab exercises. This is suitable for my 1<sup>st</sup> choice sport, as there is a range of movements across the sport and apparatus which require me to have good core strength in order to carry out skills to their full potential. Another example is that I wish to improve my muscular endurance and therefore am carrying out a lot of strength exercises in my circuits rather than focusing on aspects such as cardiovascular endurance. Having good muscular endurance will mean that in the long routines in which I have to combine multiple skills, my muscles do not fatigue too easily and therefore I can carry on performing with ease and my moves and aesthetics will not suffer.

### PROGRESS:

In order to reach my goals and see some sort of improvement, training intensity must be increased over the whole programme. The increase must be gradual otherwise it will be too hard and results will become negative. For example, if working on the leg extension at a weight of 50, I will not suddenly increase this to 75 by the next week as I need to ensure I am comfortable with the weight and then increase intensity. As well as the above increases, I will also increase the sets and reps that I complete in the resistance programme – as the body weight programme is completed with set time periods. It is hard to say how I will increase my repetitions and sets because I do not know how hard I will have to work that week or if my body will be capable in that session, however an example of this increase would be increasing the amount of inclined sit ups from 3 sets of 15 repetitions to 3 sets of 20 repetitions. This is only a slight increase but the progression will help me get closer to my goal.

### OVERLOAD:

The overload principle of training requires an increased load and intensity in training in order for the body to adapt and benefit from the work load.

## Circuit training log book

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The overload principle is based on the idea of "FITT"; which includes frequency, intensity, time and type of training. Therefore in order to see any improvements, I need to ensure that my circuits include increases in terms of FITT. Firstly focusing on frequency, it isn't easy to increase the frequency of my training when it is carried out in college hours. However, examples of the **frequency** increase would involve increasing sessions from once a week to two and even up to three during the end of the programme. I can also increase the hours/timings of sessions, for example a gradual increase from 45 minutes to /1 hour sessions throughout the programme. To increase the **intensity** of the programme, with the resistance exercises, I will increase the weights I am working with. For example, working at 20Kg on the leg extension one week then 25KG the next – therefore work will become more intense each week in order to see a progression. Following intensity is **time**, in which I will increase the times I am working for in order to improve over the weeks. For example, working at a pace of 30 seconds per set in the first week and increasing this to 2 sets of 45 seconds the next. Working at the same time and pace will not help your body to improve its strength or endurance of its muscles and therefore the results you show will not increase and the programme will not be worthwhile. Finally links in the **type** of training done, which means that training has to be related to the intended goal. For example, it wouldn't be beneficial to work at a high weight doing a low number of reps and sets, when the goal was to improve the performer's muscular endurance.

### REVERSIBILITY:

Reversibility is the idea that a performer will lose the benefits of their training if they stop suddenly – effects can be "reversed". When performing it is essential to include rest periods, however prolonged rest periods can reduce fitness and therefore it is important in my programme that I don't break in between exercises for longer than 1 or 2 minutes. Seen as though it is easy to lose muscle strength and any other benefits from programmes like this, it is important that I keep on track with the programme and – for example – don't miss any sessions. I also need to make sure that I catch up if I miss/perform less intensely due to injury.

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### TEDIUM:

A programme as long as this can become quite boring and therefore I need to make sure it is varied and tedium is prevented. Each week I will vary the exercises from body weight and resistance so that I am not doing a repetitive cycle and it stays interesting. I will also have to switch the order of exercises so that I am not working certain muscle groups repeatedly because not only is this boring, but also too demanding. ✓

### **Rationale for programme**

Both circuits – body weight and resistance – include exercises of the same muscle group, however due to the order I have put them in, I am never completing exercises that target the same muscle groups consecutively. This ensures that I can carry out these exercises at maximum effort without becoming too fatigued or bored or even de-motivated. ✓

My programme will help me achieve the goal of improving my muscular endurance of my legs. I am practicing 3 leg exercises in the resistance programme which means that most of my programme is based on the lower body. I can increase the weights gradually, but also ensure that I do a lot of reps and sets in order to improve the endurance and not just the strength. My other goal is to improve my core strength and as well as the numerous core strength exercises in the body weight circuit, 4 of my resistance exercises work on my core strength and therefore with this high intensity of workout on my core, it will be easier to reach my goal. I can increase the strength of my core by increasing the reps and intensity of my exercises each week and also increasing the work time. ✓

My tests determined my starting weights as they told me my 1 rep max results. For example, on the triceps press down, the highest weight that I could manage without straining was 15kg. Therefore I will work towards beating this weight to see if there were any improvements.

The programme will last for 12 weeks which when discussed with teachers and coaches, seems to be a long enough time to reach goals and see benefits from the programme. If the programme was any shorter than this, I do not think there would be any room or time for progression and enough time to reach any goals. The longer programme ensures that techniques can be worked on and improved instead of rushing and straining myself to try and increase rep numbers.

I will change my programme if it starts to get too hard and if the progression seems to back track and I am not seeing any improvements. I will also change exercises and intensities if my fitness levels drop due to injury. Injuries occurring will suggest that perhaps it is too demanding and needs to be easier for me until my fitness and strength has improved by a greater amount. Also the same applies if the opposite occurs and the programme seems too easy, as I can then increase intensity with weight load and timings per exercise.

## Personal Warm-up and Cool down

### General background

#### Warm up

A warm up is essential for the body and muscles before exercise for the following reasons:

- It increases the flexibility of muscles – preventing tears and strains.
- Increases the temperature of nerves and therefore increases speed and reactions due to faster nerve impulses
- Increases the blood flow and oxygen flow to working muscles, making contractions easier and faster
- Increases the range of movement at a joint to prevent injury – due to increased amounts of synovial fluids.
- Reduce injury from having cold muscles and viscous muscles, and therefore improves performance.

There are up to 3 stages to a warm up – 2 of which are vital before any bit of exercise or physical activity:

#### **Stage 1 – Pulse raiser**

Gets the heart rate to increase and pump more oxygen and blood to the muscles which will be used in exercise. Gradual increase of the heart rate reduces the pressure on the heart and lungs which may occur from a sudden start of intense activity.

#### **Stage 2 – Stretches**

These stretches should be both dynamic and static however static stretches can decrease the heart rate and therefore it is better to focus on moving around whilst stretching so that the core body temperature doesn't decrease and reduce the flexibility of muscles. Stretches loosen up the muscles and joints to make exercise easier and safer.

*Good theory*

### **Stage 3 – Sport/Skill specific**

This phase usually includes drills and sport specific basic skill practice in order to prepare the body for certain movements and warm up for the session ahead. However this phase is not essential in circuits as there is no specific skill theme required. Therefore it is best to spend more time on stretching as there will be more strain on the muscles during the strength training.

#### General background

##### Cool Down

After finishing a session it is important to carry out a cool down to remove the lactic acid from muscles and pay back the oxygen debt that has built up. The lactic acid is more likely to be removed more efficiently if stopping is gradual and not sudden. Not only will a cool down prevent aching muscles the following day but it helps your heart rate and breathing to return towards resting levels gradually. A cool down also helps avoid fainting or dizziness when vigorous activity is stopped suddenly.

A cool down usually includes a low intensity aerobic exercise such as jogging and then followed by similar stretches carried out in the warm up.

Cooling down prevents post-exercise muscle soreness, also known as delayed-onset muscle soreness (DOMS), which tends to occur after working at a harder level than usual.

### My Warm Up Plan

Firstly I need to start with a pulse raiser in order to increase my heart rate (50-60% of maximum HR). Therefore I will begin by jogging around the sports hall for around 8 minutes, therefore about 10 laps. The jog doesn't have to be fast or high intensity as we are only hoping to get the heart rate going and not push it to its maximum.



- Keep head facing forward with shoulders back and also straight.
- Bend elbows to 90 degrees, and take equal strides at a steady pace.
- Breathe in through your nose/out through your mouth steadily ✓

After the pulse raiser, I need to introduce some stretches in order to prepare further for the session. The stretches will include dynamic movements in order to prevent my heart rate from dropping and also to keep the core temperature up. After the dynamic stretches I will introduce some static stretches in order to warm up the muscles further and prevent strains during the session. ✓

### Dynamic Stretches/Mobilisers: (1 minute each)



#### Lunges:

- Stand with feet at shoulder width apart and take a step forward.
- Place hands on hips for support.
- Keeping your chest lifted and head and shoulders facing forwards, drop down into a lunge, keeping your back knee off the floor and bending the knee to 90 degrees.
- Repeat on the other leg, moving forwards, as if walking. ✓



#### High knee stretches - skipping

- Start by standing upright with your hips directly underneath your shoulders.
- Lift one knee up toward your chest, bending your lifted leg at about a 90-degree angle at the knee while your driving leg is fully straight.
- Lift the next knee, rotating legs and pushing yourself forward with an exaggerated skipping motion. ✓
- Land keeping your arms bent at a 90-degree angle, pumping them in time opposite your legs as you skip.

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### Heel flicks:

- Run as usual placing your palms on your glutes.
- Bend your knees so that your feet hit your palms.
- Repeat 1-3 sets.



### Side stepping lunges:

- Facing sideways with your legs shoulder width apart, enter a squat position by pushing backwards onto your heels and bending the knees so that the knees don't come in front of your feet.
- Lift one leg and pivot the body to face the other side, and repeat.

### Static stretches (4 times 10 seconds each)



### Tricep Stretch:

- Place your left hand behind your head and reach as far down your back as possible.
- With your right hand grasp your left elbow and gently pull it behind the back of your head. Repeat for the other arm.



### Gastrocnemius stretch:

- Stand at arm's length away from a wall and with feet shoulder width apart.
- Place your right foot in front of your left. Keeping both heels flat on the ground lean towards the wall by bending your right knee. Your left leg should stay straight. Push gently against the wall. Repeat for the left leg.



### Groin stretch

- Sit down and place the soles of your feet together.
- Clasp your ankles with your hands so that your elbows rest on your knees.
- Gently push your knees down with your elbows until you feel the stretch.



## My Cool Down Plan:

A cool down must also include an initial aerobic exercise working at low intensity, the only difference to a warm up, is that we are not trying to raise the heart rate anymore, we are trying to gradually lower it back to normal – working at roughly 50-60% of our maximum HR. Therefore I must begin with a jog, to keep the heart rate going and then gradually fade it into a run to prevent injury from any sudden stopping. ✓

## Aerobic Exercise – Jog/Walk



- Jog as normal at a slow pace and gradually slow down into a walk.
- Keep your head and back straight, relax your arms and swing freely.
- Ensure that stride is the same distance. ✓

After the low intensity exercise, I will start to introduce some stretches. Seen as though we are trying to reduce the heart rate back to normal, the stretches will no longer include dynamic stretches but just static. These exercises will encourage the flow of oxygen and help to remove the lactic acid from muscles.



## Standing Quad Stretch: (each leg 3x30 seconds)

- Stand tall with your shoulders back facing forwards.
- Bend one leg and bring it behind you, keeping your knees together and pressing your foot to your gluts.
- Push hips forward without bending standing leg. ✓
- Repeat.



## Shoulder and back extension (3x30 seconds)

- From a kneeling position, extend both hands out, fingers pointing forward.
- Use your hands and forearms to grip the floor, as you gently ease your buttocks backward, until you feel the stretch in your upper back and shoulders.
- Exhale, gently easing your chest down toward the floor. ✓

*Good warm up and cool down.*

### Health and Safety:

Just like carrying out any exercise, there are certain things that need to be taken into consideration before carrying out the 12 week programme and definitely during the programme. Without these considerations, I can injure myself and those working with me.

Firstly, I should not be taking part in any strenuous activity if I am injured especially activity that is largely focused on the muscle or area of my body that I have injured. Carrying on with the exercises will only worsen the injury and prevent me from succeeding further with sport and my programme in the future.

Secondly, I will have to ensure that I carry out a warm up before my sessions in order to prevent injuries being made during the session and possibly affecting my training in the long term. Warm ups ensure that the body temperature is raised and therefore muscles are more flexible and have more energy for contractions; reducing the chance of strains or tears. Also, the completion of a cool down is majorly as important, as it reduces the chance of DOMs – a pain caused by a build up of lactic acid after exercise – and flushes out waste products from the muscles to reduce soreness the next day. As mentioned, not doing these parts of a session can lead to injury and therefore a performer can become bored of the programme due to lack of ability and therefore progression will decrease, making the programme overall pointless.

Finally, when considering safety, I need to ensure my ability and whether I am capable of carrying out certain exercises. For example, if I was not very strong in my lower back and performed the wrong technique on the back extension – by possibly lifting too far or fast – I could strain myself and severely injure my back. Luckily certain equipment provides safety features such as the spinal support on the machine weights to reduce strain. This leads onto the next point that I must be aware of how to do the technique properly in order to ensure that I not only don't injure myself but that I also get the best results. For example, if I am doing sit ups and put more strain on my neck rather than working with my core muscles, I will not improve my core strength which is one of my goals. In my resistance programme, I need to ensure that I don't injure myself whilst using the weights.

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If I use a weight that is too heavy for me then I will be working past my ability and putting a heavy strain on my muscles and therefore could seriously injure myself. Therefore it is important to carry out tests before hand such as 1 rep maxes, in order to calculate the maximum of my capability to prevent injuries and strains. If using weights, it is important to have a spotter, just in case anything goes slightly wrong or the weight is slightly to heavy to the point where the performer needs to stop and puts the performer at risk, therefore I will work with a partner in the gym in order to protect my safety. The spotter also ensures that positions are correct and therefore prevents the wrong technique from being carried out.

Finally equipment and hazards are huge risks and therefore all work areas need to be checked before working in them. For example, check for any obstacles in the sports hall that could get in the way of the exercises and cause injury. In the gym, ensure that all machinery is set up correctly, for example, pins full in the weights, to prevent any accidents or damages. Another example of equipment safety is that all machinery should be checked for damage such as broken pads or snapped cords that could easily cause damage. These equipment hazards also apply to the body weight circuit as the exercises are completed on the floor of the sports hall. It is important to make sure exercises such as sit ups and side lying leg lifts are carried out on a cushioned mat in order to prevent back damage or possible head injury such as concussion from banging your head on a hard floor.

Other factors to consider would include the type of clothing the performer wears, jewellery and footwear. The clothing mustn't be baggy in case it gets caught on a piece of machinery or even under a body part such as your hand in a press up and causes an injury. Clothing mustn't be too heavy for example, doing burpees in a jumper may not be comfortable and may cause overheating and nausea. All jewellery such as earrings and necklaces should be removed due to the risk of them being ripped out and damaging the performer. And footwear must be suitable and provide protection and cushioning for the performer's feet to reduce the risk of impact injuries such as shin splints.

Good  
HTS.

### **Identification and detailed description of each exercise in the programme:**

#### **Resistance machine weight circuit:**

Exercises are in the order of the final circuit followed by information on other exercises performed during the 12 week programme.

#### **Resistance machine (Health and Safety points)**

- Important that body position is correct at all times.
- Legs 90° angle with the floor
- Adjust seat height
- Adjust arm/ leg position
- Protect your spine at all times; use the back support throughout the exercise.
- Do not lift heavier weights than you are capable of



#### **Bicep curl (Muscles Used = Bicep Brachii)**

- Stand with the weight in your hands – shoulder width apart – keeping elbows tucked in and palms facing the ceiling.
- Keeping torso still, curl the weights while your biceps contract.
- Inhale and slowly lower back to starting position.
- Repeat with the amount of sets and reps for that week. ✓



#### **Total Ab Crunches (Muscles used = rectus abdominals)**

- Lie down on the floor with bent knees and raise legs off the floor to a right angle.
- Place hands by your temples and lift the top half of your body to create a V shape with your thighs.
- Lower back down, but don't rest shoulders back on floor until done. ✓



#### **Leg Extension (Muscles used = Quadriceps)**

- Sit with your back upright and place hands beside your body.
- Lift your legs to extension as far as possible.
- Bend knees and lower the weight with as much control as you can.
- Adjust weight when necessary and carry out until the suitable reps and sets are done. ✓

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## Tricep press (Muscles used = Tricep Brachii)

- Standing upright with the torso straight, bring the upper arms close to your body and at a 90 degree angle to the floor.
- Using the triceps, bring the bar down until it touches the front of your thighs and the arms are fully extended perpendicular to the floor.
- Only the forearms should move.
- Exhale as you perform this movement.
- After a short hold at the contracted position, bring the bar slowly up to the starting point. Breathe in as you perform this step.
- Repeat for the recommended amount of repetitions. ✓



## Russian Twist w/ medicine ball (Muscles used = Rectus Abdominals/Oblique's)

- Lie down with your legs raised slightly and bent.
- Lift your upper body to create a V shape and extend your arms.
- Twist your torso until your arms are parallel to the floor.
- Exhale and twist to the opposite side.
- Repeat appropriate amount of sets and reps. ✓



## Bench squats with bar bell (Muscles used = Quadriceps)

- Place the bar – of appropriate weight - behind your back just below your neck. Keep your head up and back straight.
- Begin to lower to squat position to a degree of just less than 90 degrees and make sure knees do not cross over toes. ✓
- Raise the bar and push up from the floor.
- Repeat.



## Bench press (Muscles used = Bicep/Tricep brachii/Pectorals)

- Once the weight you need is selected, lie down on the flat bench. Using a grip that is wider than shoulder width, you breathe in, come down slowly until you feel the bar on your middle chest.
- After a second pause, bring the bar back to the starting position as you breathe out and push the bar using your chest muscles.
- Lock your arms in the contracted position, hold for a second and then start coming down slowly again. ✓
- Repeat the movement for the amount of repetitions you chose.

# Circuit training log book



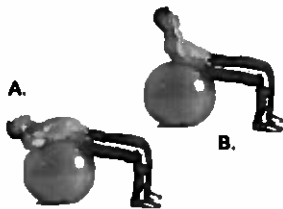
## Inclined sit ups (Rectus Abdominals)

- Sit on the bench with your legs resting on the pads.
- Place hands at the back of your head with elbows back.
- Lie back to almost touch the bench. Raise torso until upper body is vertical and lower and repeat.



## Leg curl (Muscles used = Hamstring group)

- Lay face down on the bench with knees just over the edge with padding on the low part of the calf muscle.
- Hold the handles and bend your legs at the knee so the padding touches your leg. Return back and repeat without the weights touching the stack.



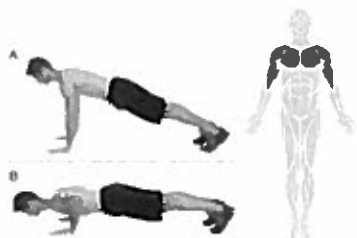
## Swiss ball crunch (Muscle used = Rectus Abdominals)

- Lie on an exercise ball with your lower back pressed against the ball.
- Your feet should be bent at the knee and pressed firmly against the floor.
- The upper torso should be hanging off the top of the ball. The arms should either be crossed on top of your chest. Lower your torso into a stretch position keeping the neck stationary at all times.
- With the hips stationary, flex the waist by contracting the abdominals and curl the shoulders and trunk upward.
- The lower back should always stay in contact with the ball.
- Exhale as you perform this movement and hold the contraction for a second. As you inhale, go back to the starting position.
- Repeat for the recommended amount of repetitions.

Each of the exercises below is in a specific order in order to prevent carrying out more than one exercise that works the same body muscle in a row. This ensures that the working muscles can relax and recover in order to prepare for the next exercise that requires their contractions and also to prevent boredom and potential skipping of exercises. The reps and sets are not fixed however most of my exercises start at the intensity of 2 sets of 10/15 reps in order to start a little easier. The sets and reps will then be gradually increased depending on capability and in order to progress towards my goals.

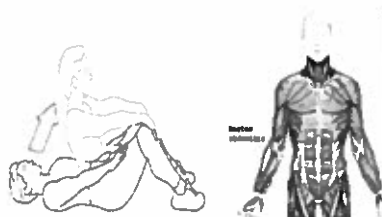
## **Body weight circuit:**

### **Exercise & Muscle groups**



#### **Push up: (uses pectoralis and tricep brachii)**

- Lie face down whilst keeping arms straight and body held up off the floor.
- Lower body downwards until your chest is just off the floor and then push back up whilst exhaling to return to the original position.
- Repeat after a short pause. ✓



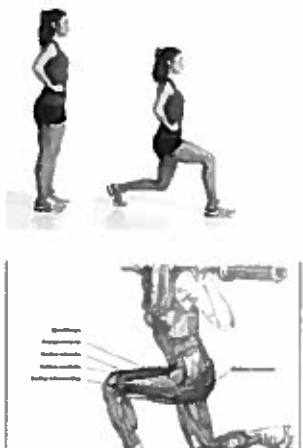
#### **Sit up: (uses rectus abdominus)**

- Lie down with legs slightly bent, slightly apart with your head facing ahead.
- Place hands on thighs and using abdominal muscles – not neck or body jerking – lift shoulders off the floor and touch just past your knees.
- Lower back down and repeat. ✓



#### **Tricep dips: (uses tricep brachii)**

- Sitting in front of a bench, hold on to the edge of the bench (body at a right angle) and extend legs out in front of you.
- Lower your body by bending at the elbow and just so you do not touch the floor.
- Lift the torso back up and repeat. Using triceps to lift instead of creating momentum with the torso. ✓

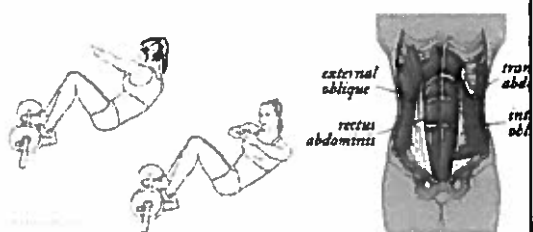


#### **Lunges: (uses quadriceps)**

- Stand with feet shoulder width apart facing forwards.
- Step forward with your right leg and drop body down until the back knee is close to the floor, creating a right angle in each leg.
- Push through your heel and extend knees to original position and repeat on alternative legs. ✓

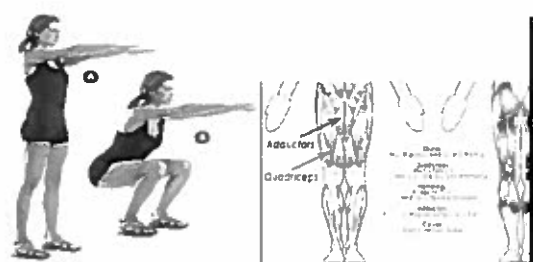
## Body weight circuit:

### Exercise & Muscle groups



#### Twist sit ups: (uses rectus abdominus and obliques)

- Lie down in the same position as the sit up, with hands either side of your head, fingers touching your temples.
- Bring your shoulders up and once lifted, twist to the left/right.
- Lower back to original position and repeat.



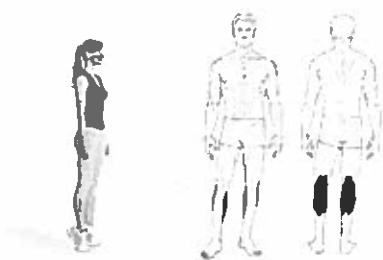
#### Squats: (uses quadriceps and glutes)

- Stand with feet shoulder width apart with arms horizontal.
- Sit back into a chair position, placing the weight through your ankles.
- Reverse the action and stand back up; squeezing your glutes on return.



#### Back extensions: (uses erector spinae muscle group)

- Lie down with stomach against the floor and raise arms so fingers touch temples.
- Lift the upper body off of the ground, "crunching" towards the hips.
- Slowly lower with control back to flat and repeat.



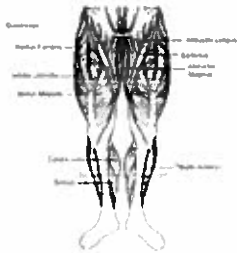
#### Calf raises: (uses gastrocnemius, soleus and tibialis anterior)

- Stand up straight with arms by your side lgs shoulder with apart.
- Keeping your core squeezed, lift your heels of the floor.
- Lower back down and repeat when your



## Body weight circuit:

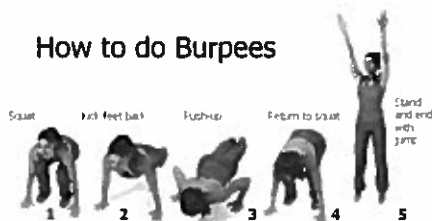
### Exercise & Muscle group



### Side Lying Leg Lift: (uses quadriceps and glutes)

- Lying on your side on a mat, have one arm up and resting underneath your head
- Once in this position, bring your top leg up off the mat as far as possible without twisting your bod.
- Return both legs together to the mat and repeat.

### How to do Burpees



### Burpees: (uses rectus abdominus, quadriceps, glutes and cardiovascular endurance):

- Start in press up position.
- Jump feet into squat position.
- Stretch jump out.
- Return to squat and kick feet back to start position.
- Repeat

## **BURPEES**



Just like the resistance programme, I also put the body weight exercises in a specific order to prevent the same muscles being worked consecutively. For example, there is no point in my circuit in which a leg exercise is followed by another leg exercise. This is to prevent the circuit from being too difficult to complete and also prevents me from putting strain on the wrong muscles and possibly lead to an injury. Therefore as a summary, the programme is varied in its order to prevent injury, fatigue and boredom.

### **Record of implementation with evaluative comments and detail of progression.**

I will evaluate my programme every two weeks and therefore I will provide 6 evaluative comments. My evaluations will mention any room for improvements and comment on whether my programmes are well suited to my capabilities and also note if there was any progression/reason for a decrease in results.

#### **Week 1&2:**

In my opinion, the first two weeks of the programme are there to gain knowledge on my personal strengths and weaknesses and to use trial and error to measure what changes should be made to the programme. As shown in my results table, I started the leg extension on week one using a weight of 25kg which was far too easy and therefore on week two I bumped this up to 30kg as I didn't want to plateau with my training, however I didn't want to strain myself in the beginning of my programme so I kept it as a small increase. The rest of the resistance exercises were suited to my capabilities, however on exercises such as the core exercises, I started at sets of 15 reps, which I personally found too easy due to the high demands my sports conditioning usually entails; therefore I chose to either increase the amount of sets I did or increase the reps within each set in order to get closer to my goals. In terms of timing, the timings of 30 seconds for example, were not too difficult and therefore I decided that this was a good starting point and would increase this in upcoming weeks. For the body weight exercises, I found most of them fairly easy but not to the point where my training was not worthwhile. I will push myself more in upcoming weeks in order to increase my rep numbers however I wanted to ensure that my technique was good and not rushed. An exercise I did struggle with however was the back extension and this is shown in my low results. Due to an injury I had in my training sessions a while ago, I struggle with back pain and therefore I cannot push myself too far without straining and causing pain in the exercises. I hope to gradually improve on this exercise but for now I would prefer to improve technique rather than speed of the reps, as I do not want to worsen my injury and furthermore, my back strength is not part of my goals, therefore it is not a big worry for me. A common occurrence was that students became bored during the exercises and therefore it is better for me to time my bodyweight circuit instead of setting numbers of repetitions. This way I will not lose motivation and will improve the intensity each week due to added pressure of time.

### WEEK 3&4

In terms of week 3, there was a further improvement with rep numbers. This week also showed signs of improvement as there was an increase in the amount of tricep dips and therefore this suggests that the weight in the resistance programme was no longer having a huge effect on my muscles. Every other body weight exercise also increased which implies that the timing of the body weight circuit was too easy for me, therefore in week 4 I will consider increasing it from 30 seconds to 45 seconds to push myself further and increase the intensity – working towards the goal of increased muscular endurance. This will have been working on the muscular endurance side of my goals by using the muscles for a longer period of time. The 15 seconds extra on my exercises made room for an increase in the reps however the results of this certain week do not necessarily mean that I found it easy. The exercises were definitely harder this week due to the increased timings however they weren't impossible and I am hopeful that they will become easier over the next 4 weeks in which I am working for 45 seconds. Due to the fact that I am aiming to improve my muscular endurance, as well as increasing the timings of work, I will also decrease the rest time. This week only made a 5 second decrease from 30 to 25 seconds in order to make the intensity even higher, yet still using the rest time to my advantage as the session was one of the hardest so far. In terms of the resistance programme, on week 4 I kept the weights the same as well as the reps except a small amount. I increased the weights on the leg extension from 30 to 35kg considering the fact that it was quite easy for me in week 3, but kept the number of reps the same in order to prevent too much strain on my muscles. I also increased the amount of reps from 5 to 10 on the tricep press but kept the number of sets the same to again avoid sudden strain. Another alteration I made was increasing the length of the set on the swiss ball exercise from 30 to 45 seconds to again start to improve the muscular endurance of the core. Finally I increased the number of sets completed on the inclined sit up in order to again, as repeated above, start to focus on my muscular endurance but not push myself too hard and cause de-motivation. Also, as I previously mentioned, I have been suffering with a back injury and the pain varies from week to week and this week may have had a greater impact, causing the number of repetitions to decrease. I admittedly was tired towards the end of the session and therefore the last exercises suffered such as the side lying leg lifts and the number of burpees stayed the same as the week before. Overall week 4 was harder than the other weeks that I have done but this was only due to increased intensity of the sessions. In my opinion the

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results of each week and the fact that I am starting to increase times and weights look promising as it makes my goals seem more achievable.

### **Week 5&6**

Weeks 5 and 6 were definitely the worst of my whole programme. Most exercises took a decrease in repetitions and I lowered the weights or repetitions on most of the resistance exercises due to the fact that I struggled these two weeks. As much effort as I put in this week, the sessions were based on a Tuesday and these two weeks especially I had been pushed extra hard in my gymnastics training on the Monday night. The sessions in gymnastics included cardio fitness for an hour, and strength training for another hour and a half. Therefore both Tuesday sessions involved my muscles being full of lactic acid and already in a mode of fatigue from the previous night and I couldn't therefore not put as much effort in and became tired easily during the two circuits of my programme. This interference with the programme was an inconvenience and in most cases made my progress decrease, however in the upcoming weeks I will be sure to push myself further to make sure that I am not faced with the problem of reversibility and de-motivation. Due to the decrease in results in week 5&6, I may have to lower the weight in the resistance programme and the reps of the resistance exercises. However I will continue to push myself at 45 seconds in the body weight circuit as I do not want to lose all of my results and have the programme become too easy for me.

### **Week 7&8**

In the previous evaluation, I mentioned that I would lower the weights and reps in the resistance programme, however I felt energetic and motivated this week and therefore tried to increase my work load in some of the exercises. For example I decided to increase the weight of the leg extension back to 35kg like I was using in week 4, after working at 30kg for the previous 2 weeks. I found it hard to suddenly start at this hard level again but due to the fact that I want to reach my goals and develop a better level of muscular endurance in my legs, I knew that I had to accomplish this week's programme in order to increase the sets and reps to work on my endurance. This week - week 7 - there was improvement from the previous two due to having more motivation and energy, however there is little to write about as I was just back to working at the same level that I was in week 4, with a few improvements in certain exercises. Week 8 was the week in which more improvements were evident. I decided to increase the weights used in some exercises of the resistance programme, for example I increased from 15 to 20kg in the bicep curls and from 5 to 10kg in the bench squat. Week 8 showed some

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progression, as it showed me that I had gone from being able to lift – for an example – 25kg on the leg extension in week one to being able to lift 35kg on the same exercise by week 8. As much as this is not a huge increase in weights, it shows to me that my legs are getting stronger and more able to withstand bigger weight loads. Also I am carrying out more than one set of small rep amounts and decreasing the rest from 30 to 20 seconds, in order to carry on working towards the goal of increased muscular endurance. Two examples of targeting muscular endurance include the increase from 45 seconds to 1 minute in the Swiss ball exercise – where muscles are working for longer and therefore getting used to withstanding longer periods of intense pressure – and the switch from 4 sets of 10 in the inclined sit ups to 3 sets of 15. This ensures that the muscles are getting used to longer periods of work but at the same time aren't being worked too hard to where it is impossible. There was an increase from 40 sit ups to 60 sit ups, but the switch around in numbers of sets made it bearable. Both of these exercises as well, work towards getting a stronger core which was another one of my goals for the programme.

### **Week 9&10**

Coming to the end of my programme I felt like I should increase the intensity a little more in order to get one step closer to the goals I had set myself. Therefore in week 9 I decided to increase the time from 45 seconds to 1 minute in the body weight circuit. Therefore working for a longer period of time I would hopefully be increasing my muscular endurance and reaching my goal. I increased some of the weights in the resistance programme, especially those that I found easier in the previous weeks in order to prevent a pointless workout – for example in week 10 I increased the weight from 15 to 20kg in the bench squat and also increased the time I was working for from 1 minute to 1 minute 15 seconds in the Swiss ball exercises in order to not only improve the strength of my core but also the muscular endurance of my core – however I kept some the same in order to become more comfortable and prevent any strain. I am quite happy with the progression in these two weeks as there were no exercises in which I found them too hard to carry on increasing the reps or that took a sudden decrease in improvement. This week I do not have much to evaluate on because I found this to be a good 2 weeks in terms of how easy the exercises are becoming and therefore with the added sessions I hope to improve even further in the last two weeks to ensure that my programme was not a pointless exercise.

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### Week 11&12

These weeks were the final two weeks of my programme and I think that I pushed myself enough to see positive final results. In week 11 I kept most things the same, except a few additions in weights to the resistance programme such as the bench squat and leg extension where I again added 5kg. The reason that I kept most the same is because I didn't want to overwork myself when I didn't feel comfortable and had to consider the fact that I didn't find some of the weights easy enough to progress. I didn't therefore want to risk an injury and have to sit out on the last week of the programme. This applied for the body weight circuit; although there were some improvements in the reps and there were no areas of major weakness, I didn't feel like I completed the session with enough ease in week 10 to progress the timings of the final 2 weeks and therefore kept it the same in the hope of still improving. Week 12 however was more difficult because I decided to increase the weights and timings of some exercises and therefore had to push myself. I also added 5 seconds onto each exercise in the body weight circuit in order to push myself for better muscular endurance. I completed the session without any injuries and it went well in my opinion, however it was a lot more difficult than the other sessions. Overall I definitely think the last two weeks made an improvement because although I found it difficult, the increased timings and weights pushed my muscles harder than usual.

*Good  
evaluation  
+  
progression*

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## Resistance programme – results

Name: Polly McDonough		AS Resistance programme											
Exercise	Baseline	1	2	3	4	5	6	7	8	9	10	11	12
Bicep curl		5kg 2x10	5kg 3x10	10kg 2x10	10kg 2x10	10kg 2x10	15kg 2x10	15kg 2x10	20kg 2x10	20kg 2x10	20kg 2x10	20kg 2x10	25kg 2x10
Total Ab Crunches		2x15	2x15	2x15	2x15	3x10	3x10	2x15	3x15	3x15	3x15	2x20	2x20
Leg extension	<b>65kg</b>	25kg 2x12	30kg 2x12	30kg 2x12	35kg 2x12	30kg 2x10	30kg 2x10	35kg 2x12	35kg 2x12	40kg 2x12	40kg 2x12	45kg 2x12	45kg 2x12
Tricep press	<b>15kg</b>	5kg 2x5	5kg 2x5	10kg 2x5	10kg 2x10	10kg 2x5	10kg 2x5	10kg 2x10	10kg 2x10	15kg 2x5	15kg 2x5	15kg 2x5	15kg 2x10
Medicine ball		2x15	2x15	3x10	3x10	3x10	2x15	2x15	3x15	3x15	3x15	2x20	2x20
Bench squat		5kg	5kg	5kg	5kg	10kg	10kg	5kg	10kg	10kg	10kg	15kg	15kg
Bench press	<b>30kg</b>	5kg 2x10	5kg 2x10	10kg 2x10	10kg 2x10	10kg 2x15	10kg 2x10	10kg 2x15	15kg 2x5	15kg 2x10	20kg 2x5	20kg 2x10	20kg 2x10
Inclined sit ups		2x15	2x15	2x15	3x15	4x10	2x15	4x10	3x15	3x20	3x20	3x20	3x20
Swiss ball		30 sec	30 sec	30 sec	45 sec	45 sec	30 sec	45 sec	1 min	1 min	1 min 15 sec	1 min 15 sec	1.5 min
Leg curl	20kg	10kg 2x12	10kg 2x12	15kg 2x12	15kg 2x12	10kg 2x10	10kg 2x12	15kg 2x23	15kg 2x15	20kg 2x10	20kg 2x10	20kg 2x10	20kg 2x12

Minimum of <u>2</u> exercises from upper, core and lower body		
<p><b>Upper</b></p> <p>Bench press Lateral dumb bell raise Bicep curl Tricep press</p>	<p><b>Core</b></p> <p>Inclined sit ups Total abdominal crunches Appropriate swiss ball exercises Appropriate medicine ball exercises</p>	<p><b>Lower body</b></p> <p>Leg curls Leg extensions One legged bench squats Standing calf raise</p>





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### Body weight programme – Results

	1	2	3	4	5	6	7	8	9	10	11	12
Pressup	22	23	23	27	25	25	28	29	32	33	33	35
Sit up	22	24	24	26	27	28	28	29	34	37	37	43
Tricep dips	19	20	22	26	23	23	22	22	25	25	24	27
Lunges	12	15	16	19	23	24	24	24	30	32	32	32
Twisted sit ups	15	17	18	27	30	30	30	28	35	35	37	39
Squats	16	16	18	24	25	25	24	26	30	30	32	33
Back extension	20	19	20	29	29	30	30	29	34	33	35	35
Calf raises	21	25	27	35	36	37	37	34	40	40	39	41
Side lying leg lift	8 & 10	7 & 12	9 & 11	12 & 16	13 & 12	9 & 11	14 & 17	19 & 21	20 & 21	22 & 22	22 & 24	24 & 24
Burpees	15	15	17	20	20	21	19	21	26	26	27	29

✓  
2nd set?

## **Overall Evaluation**

A reminder and a brief summary of my long term and short term goals are below:

### **Short term goals –**

- To increase the number of reps of tricep dips completed
- To feel a sense of achievement/relieve stress of college

### **Long term goals –**

- To improve muscular endurance – mostly the quadriceps group
- To improve the strength of core muscles – such as the rectus abdominis

## **Evaluation**

In my opinion, over the 12 week programme I have achieved both my short term and long term goals. This is for many reasons.

My first short term goal was to increase the number of repetitions and technique of the tricep dips. I personally feel that as the weeks progressed my technique improved firstly. For example, in the tricep dip I was unaware that your legs should be straight out in front but not too extended at the hip and have been performing them outside of the programme with my legs bent and hips stretched out. This meant that I was performing the technique putting strain on my back and therefore not working the correct muscles. However from looking at the coaching points provided and using the teacher's feedback, I have definitely figured out the correct technique and can now carry out the movement in the correct way without injuring the wrong muscles etc. In terms of increasing the number of repetitions, it is hard to measure completely due to the increased timings and weaker weeks of performance, but over the weeks I did progress and increase repetition numbers in the majority of sessions. However overall, there was only certain weeks that I didn't progress at and due to it being a majorly weak exercise for me, I would say that progressing from 19 reps in the first week to 27 in the last week was a huge achievement for me. Taking all of this into consideration, I feel like I have accomplished my first short term goal.

My second short term goal was to feel a sense of achievement and relieve the stress of everyday college life. After this programme I now feel more confident with my strength and ability to be able to progress further in my sport and I don't think my confidence would be as high if I hadn't completed the whole 12 weeks. In terms of feeling more relaxed and

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relieving stress, I feel like this too has been achieved. I slept a lot easier over the 12 week programme and this may be due to the fact that the sessions made me tired and used up my energy, but it meant that I could refresh myself in order to carry on with the next college day in a better state of mind. Stressful situations also eased up as most of my energy and worries were focused on the programme which left no time for other worries, and therefore made my mind a lot emptier and freer. ✓

I also feel that I have achieved both of my long term goals in this programme. My first long term goal was to improve my muscular endurance, mainly in my legs such as the quadriceps group. Before my 12 week programme, I struggled to get through full floor routines with tumbles, leaps and dance included in them. However I completed a floor session the other day in which my coach asked us to complete two floor routines back to back – i.e. when the music has finished, immediately press play and start again. I obviously struggled due to the full 3 minutes of intense training, however it was much easier than usual and I completed both routines with no falls or injuries and only a few minor errors. Also, I feel like I have improved due to increased number of reps with increased timing in the body weight circuit. For example I started off being able to do 12 lunges – i.e. 6 on each leg – and by week 12 the time had doubled and I was working at 32 reps. This shows to me incredible improvements in the strength and endurance of my leg muscles. In the resistance programme I also saw results as I was improving in the muscular endurance aspect in this programme also. For example on the leg extension, I carried out a one rep max test before the programme started and found that I could lift up to 65kg. However at the end of the programme after working at weights such as 45kg, my one rep max had increased to 70kg. This may not be a lot of an increase but there was a difference and therefore my legs could withstand higher weights and increased intensity without becoming too tired. ✓

My final long term goal was to improve the strength of my core. Again the body weight programme showed me that my core muscles such as my rectus abdominis and my obliques were increasing in strength. For example, on the sit ups I started being able to complete 22 reps in 30 seconds and in the end I ended up completing 44 in 1 minute. Therefore my muscles were getting stronger and I was able to withstand double the intensity and time of the workout than I was 12 weeks earlier. Similarly in the resistance programme as I started out being able to work on the Swiss ball exercises for 30 seconds and then 12 weeks later this length of time was tripled and I was seeing results which suggests that my programme has worked extremely well. ✓

Good  
evaluation