

PERSONAL EXERCISE PROGRAMME

Name: xxxxx

Centre number: xxxxx

Candidate number: xxxx

Sport: Netball

Word count=1490



Introduction

I've been playing netball competitively since I was 7. My preferred position is GD. I currently play at Kardale netball club senior team but have been a part of the club for 5 years, I trained with the u13 Hertfordshire County Netball squad. I also enjoy playing regularly for my school team.

Aim/Objective

I would like to improve my muscular endurance because as a defender you need to repeatedly jump for interceptions, 2nd stage marking your attacker and supporting your team by moving the ball up-court.

My overall aim is to;

- Improve my muscular endurance to allow me to be more effective intercepting the ball in the later stages of a match.

Below are my pre testing performance statistics;

Pre Results	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Turn over interceptions <i>(intercepting the ball catching and passing on successfully to my team)</i>	5	3	2	1
Interception <i>(hitting the ball of court without catching it)</i>	4	4	5	3

You can infer from my match statistics that I need to improve my muscular endurance as my quarter 4 performance is significantly less consistent than quarter 1. In the second half of the game my muscles begin to fatigue due to a build-up of lactic acid as I am working more anaerobically in the later stages. My reaction time and energy levels diminish so I achieve less successful interceptions, this has a negative effect on my gameplay by giving the opposition more chance to get a successful pass into the shooting circle and ultimately a higher chance of a successful shot.

By aiming to improve endurance in my leg and core muscles, I think it will allow my gameplay to become more energetic and my defence to become stronger, I will be more consistent throughout all four quarters which is intimidating to the other teams and am able to continue at a strong performance without showing muscle fatigue in the later stages of the game.

Pre-PEP fitness test analysis

After considering the components of fitness required during a netball game, we carried out our fitness examination to infer which i need to improve in my game. My strongest component is my cardiovascular endurance (2610m in the 12-minute cooper run), reaction

time (5cm reaction) and generated power (50cm vertical jump test) of which is scored excellent when compared to normative data. However, areas of weakness were flexibility (10cm) and speed (5.29s) as they are the two components I scored average and poor in.

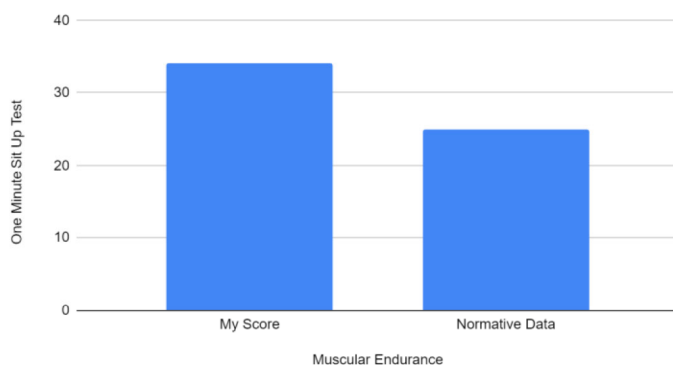
Par-Q

Before taking part in the fitness testing, I completed a PAR-Q form, I am fit to take part in the personal exercise programme.

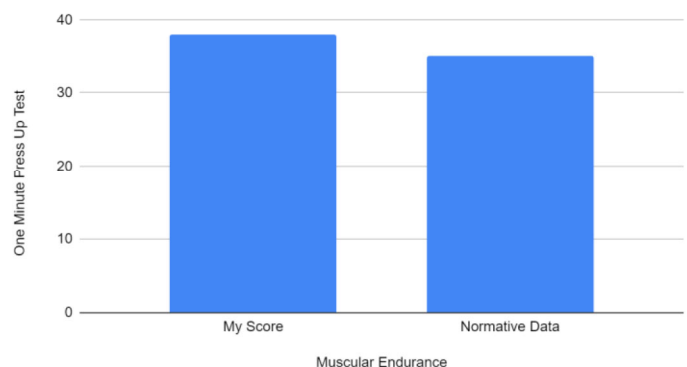
Components of fitness

The component of fitness that I have chosen is muscular endurance. As you can see from the graphs below, I scored 34 Sit ups and 38 Press ups in my pre fitness testing. Although this is excellent when compared to normative data, I feel that this will benefit my performance when defending in netball as it will allow me to play at a high standard level throughout the duration of the game without muscular fatigue.

MY SCORE VS NORMATIVE DATA



my score vs normative data



Methods of training

I have chosen to do circuit training because I can tailor this method of training to specific netball movements as it can be more precise to enhance my weaknesses. I can alternate between upper body muscles (biceps and triceps), leg muscles (quadricep and hamstring), and core muscles (abdominals) endurance.

SMART Targets

Specific

In the sit up test I scored 34. I would like to improve this score to 41 which is an increase of 20.59%. In my press up test I want to improve my score from 38 to 43 which is an increase of 13.16%.

Measurable

I will monitor the progress and effectiveness of the PEP by retesting my muscular endurance level at week 3 and week 6. I will also conduct a notational analysis using the same criterion at the end to evaluate any progress achieved throughout my training.

Achievable

Although challenging, I think that increasing my 1-minute press up by 5 in 6 weeks is achievable as long as I apply principles of training correctly.

Realistic

My fitness targets are to increase my sit ups by 7 and my press ups by 5. It should not be unrealistic for me to achieve this goal at the end of my training.

Time bound

The whole PEP will take place over 6 weeks of increased intensity fitness testing to ensure progressive overload without overtraining. I will re-test my scores midway through and at the end of the PEP to review progress.

Principles of Training

Frequency

I train netball 2x week for 90 mins and have matches at the weekends. My training programme will begin 2x week to allow my muscles to rest after being worked harder than usual, this is to ensure that I do not overtrain which could lead to injury and reversibility. After I see progress in my results, I will increase my training to 3x a week for progressive overload.

Intensity

I will attempt to maintain a moderate to high intensity performance throughout the fitness training, (60%-80%) as I work through the weeks of my programme.

Time

My training will take place for 15-20 minutes each circuit completed. Short brief medium-high intensity training will ensure the best outcome for my goals.

Type

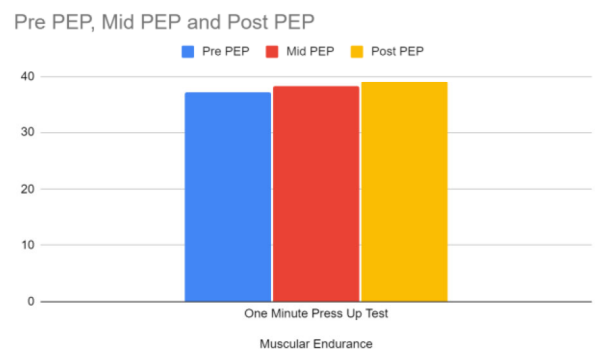
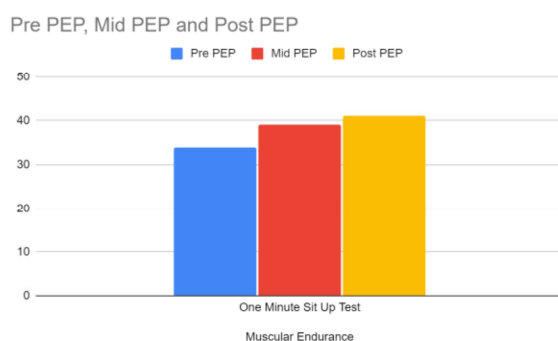
I will use circuit training to focus on working specific muscle groups for example my antagonistic muscle pair of my biceps and triceps and my abdominal muscles to improve muscular endurance of my type 1 muscle fibres. This is a good method as it allows precise training to target upper or lower body muscles specifically beneficial for netball performance.

PEP Evaluation:

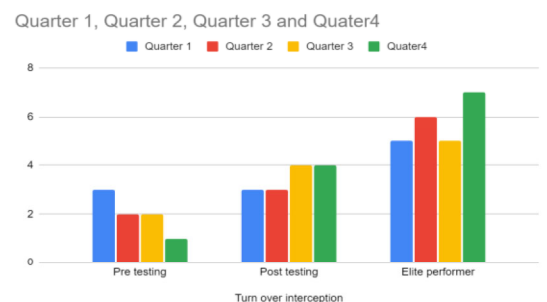
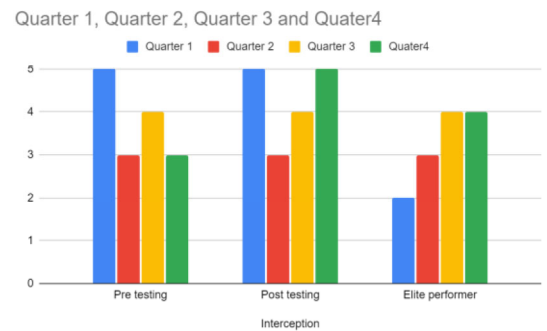
I will analyse my results over the course of the six weeks and evaluate the impact the training has had on my defensive performance.

Fitness analysis

My results show that my muscular endurance has improved and I completed more sit ups with an increase of 7 sit ups which is a percentage increase of 20.6%. I also increased my press up count by 2 which is a percentage increase of 5%.



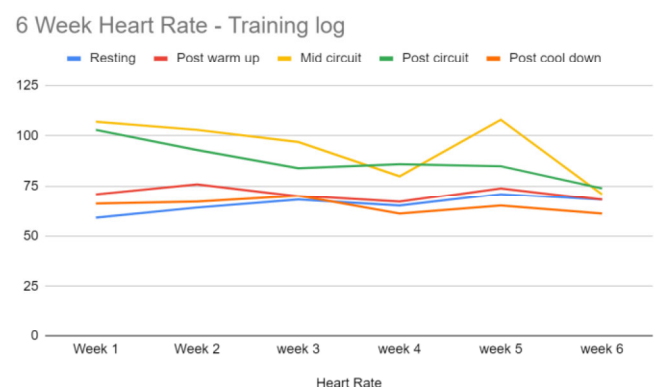
The performance data shown clearly indicates that my muscular endurance has improved over the course of the training programme. Not only has my core strength and endurance improved but when applied during gameplay my number of interceptions has increased as I am able to perform at high intensity over longer periods of time as my quarter 4 performance results have increased. I believe this is due to physiological adaptations that have taken place, these could include muscle hypertrophy and cardiac hypertrophy. Although cardiovascular fitness was not a component I chose to work on, from my training and post PEP performance I can see a difference in my overall fitness levels in the later stages of a netball game, I am making more turnover interceptions reducing the likelihood of my opponents getting into a goal scoring position. Francesca Williams has a higher rate of turn over interceptions, as turning over the ball instead of hitting it out is much more efficient as it ensures your team is given the best ability to score-if the ball is hit out the other team are given possession.



The 6 week PEP was well planned, by targeting my muscular endurance it ensured that the statistics in my gameplay became consistently higher. As a defender this would impact the team as the more interceptions I get, the more disruption to the opposing teams gameplay. Furthermore, taking pressure off the shooters during an intense match.

Reviewing SMART targets & Principles of training

Before my pep my specific goal was to improve my sit ups by 20.59%. My overall results improved by 20.6% meeting my original target. However, I did not reach my intended goal for my press ups as I only increased by 5% when my target was 13.16%. I made sure to measure and monitor my progress over the 6-week training period through increasing the intensity and frequency of my sessions. When looking at my HR data below you can see that during the mid-circuit my heart rate was the highest, this is because more blood was being pumped around my body to working muscles. I was working above at 60% of my MHR ($220-15=205$)



The use of circuit training was useful to improve my muscular endurance as I could change my programme to be specific for my individual by each week adapting for my ability levels shows progressive overload however circuit training requires specialist equipment and

preferably needs a lot of space to perform so may not be the most effective method in the future.

One area I would like to focus on in the future is to increase the amount of turn over interceptions compared to normal intercepts. In order to improve this, I would like to include Continuous training within my PEP (sustained exercise at a constant rate without rests, involving aerobic demand for a minimum of 20 minutes) because it involves working at a moderate intensity for a long period of time which will push my muscular endurance to its limits provoking an improvement in my defensive turnover interceptions in a competitive situation.

Bibliography-

<https://www.nhs.uk/live-well/exercise/running-and-aerobic-exercises/how-to-warm-up-before-exercising/>

<https://www.today.com/health/diet-fitness/cool-down-exercises-rcna24609>

<https://healthyliving.azcentral.com/circuit-training-netball-11709.html>

<https://www.bbc.co.uk/bitesize/guides/zw7wmnb/revision/3>

APPENDIX 1 - PAR-Q

PAR-Q Form

(Physical Activity Readiness Questionnaire)

Forename: [REDACTED]

Surname: [REDACTED]

Date of Birth: 19/01/08

GENERAL HEALTH QUESTIONS

Please read the questions below carefully and answer each one honestly (check YES or NO)	YES	NO
1) Has your doctor ever said that you have a heart condition OR high blood pressure?		X
2) Do you feel pain in your chest at rest, during your daily activities of living, OR when you do physical activity?		X
3) Do you lose balance because of dizziness OR have you lost consciousness in the last 12 months? Please answer NO if your dizziness was associated with over-breathing (including during vigorous exercise).		X
4) Have you ever been diagnosed with another chronic medical condition (other than heart disease or high blood pressure)?		X
5) Are you currently taking prescribed medications for a medical condition?		X
6) Do you have a bone or joint problem that could be made worse by becoming more physically active? Please answer NO if you had a joint problem in the past, but it does not limit your current ability to be physically active. For example, knee, ankle, shoulder or other.		X
7) Has your doctor ever said that you should only do medically supervised physical activity?		X

If you checked YES to any of the above, please provide details:

DECLARATION AND AUTHORISATION

I confirm that the information given is a true and accurate statement. I confirm that I am voluntarily engaging in an acceptable level of exercise, and my participation involves a risk of injury.

Please be aware that it is your responsibility to inform us if there is a change to any of your answers on the PAR-Q.

Student Signature: [REDACTED]

Date: 06/02/23

APPENDIX 2

FITNESS TEST	COMPONENT OF FITNESS	SCORE	COMPARED TO NORMATIVE DATA
1 MINUTE SIT UP TEST	MUSCULAR ENDURANCE	34	EXCELLENT
1 MINUTE PRESS UP TEST	MUSCULAR ENDURANCE	38	EXCELLENT
12 MINUTE COOPER RUN	CARDIOVASCULAR FITNESS	2610m	EXCELLENT
HAND GRIP DYNAMOMETER	MUSCULAR STRENGTH	34	ABOVE AVERAGE
SIT AND REACH TEST	FLEXIBILITY	10cm	AVERAGE
ILLINOIS AGILITY TEST	AGILITY	21.3s	AVERAGE
STANDING STORK TEST	BALANCE	41s	EXCELLENT
HAND EYE COORDINATION WALL BALL TOSS TEST	COORDINATION	33	ABOVE AVERAGE
VERTICAL JUMP TEST SARGENT JUMP TEST	POWER	50	EXCELLENT
RULER DROP TEST	REACTION TIME	5cm	EXCELLENT
30m SPRINT TEST	SPEED	5.29s	POOR
BMI	BODY COMPOSITION	59kg	HEALTHY WEIGHT

APPENDIX 3 - performance analysis

Pre Results	Quarter 1	Quarter 2	Quarter 3	Quater4
Turn over interception	3	2	2	1
Interception	5	3	4	3

Post Results	Quarter 1	Quarter 2	Quarter 3	Quater4
Turn over interception	3	3	4	4
Interception	5	3	4	5

Elite Performer Francesca Williams	Quarter 1	Quarter 2	Quarter 3	Quater4
Turn over interception	5	6	5	7
Interception	2	3	4	4

Turn over interception- intercepting the ball,catching and passing successfully to my own team

Interception-hitting the ball out of play without catching it

APPENDIX 4 - Circuit training plan

Station number	exercise	time /reps	Explanation of choice
1	Press ups	1minute	Improve bicep and tricep strength
2	Walking lunges	3x8 reps	Improves hamstring and quadriceps strength
3	squats	20	Quadricep strength
4	Bicep curls	2kg 15x	Improve upper arm strength
5	plank	1minute	To help balance and strengthen my core
6	Box jumps	25	To improve the amount of power i can generate in a jump
7	Calf raises	25	Improve strength in my legs and calves

WARM UP

pulse raiser	Shuttle runs 3x
Stretching and mobility	High skips,lunges,squats,hamstring stretches,shoulder circles
Sport specific	Defence drills,4 corners,3 posts drill,half court warm up
psychological	Team tactic talk

COOL DOWN

Pulse lowering	Slow jog around court
Active static stretching	Lunges, squats, straight leg kicks
Development stretching	Side lunges,standing quad stretch,butterfly stretch
Relaxation exercises	Neck rotations,bear hug stretches

APPENDIX 5 - Weekly Evaluations

Week 1-

It was a successful training. I stuck to my programme. I struggled with press ups for 60 seconds as my arms became tired and I had to take breaks at around 40 seconds in. To improve my training programme I think I should use heavier weights to boost my muscular ability. My warm up was effective and increased my resting heart rate, warmed up and stretched my muscles. My heart rate for this week started at 59 this shows I was working my hardest during the mid circuit as it increased to 107 bpm.

Week 2- In my training today I found the press ups quite difficult so I think next week I will try to maintain the same amount of time but attempt to do full press ups at a slower rate. I think this will be beneficial as it will stop me performing the other exercises at a lower standard. My warm up is still very effective and displays an obvious increase in my heart rate also my data shows my cool down to lower my heart rate and slow my tidal volume down.

Week 3- this week I completed my fitness test again and my scores were similar to the first examination, however my arms were less tired and I didn't feel as much aching in my biceps compared to the first fitness exam. To improve my training for next week I think I should increase my amount of bicep curl reps and increase my plank to 90 seconds to insure maximum improvement.

Week 4- in my training this week I found the exercises quite easy. I think my muscular strength in my quadriceps and hamstrings has improved as I could perform more reps of squats and walking lunges. When I was working anaerobically when doing box jumps I got a cramp in my shin and had to take a break in my training, for next week I think I need to focus more on my upper body endurance as I continuously struggle with the press ups as my arms become shaky after around 15 reps.

Week 5 - for today's training we were not in the usual sports hall so there was less space and less equipment. I had to improvise as most of the space was used had to do running outside - laps around the tennis court. I also had to use heavier weights as there was only one option available, I used 3 kg instead of 2. This week my amount of press ups decreased as usually I do between 30-35 this week I only completed 23 in a minute.

Week 6- at the weekend I played in a netball tournament where I injured the soft tissue in my ankle. This has impacted my fitness programme as I could not perform the exercises to my best ability and my results will be lower than expected. I couldn't complete my warm up as I couldn't run as a warm up without further injury because my foot has been in a support all week it became stiffer and weaker so I couldn't hold the plank or do box jumps.

Appendix 6 - Adapted circuit training plans

Week 1-3

Station number	exercises	time/ reps
1	Press ups	60 seconds
2	Walking lunges	15x
3	squats	60 seconds
4	Bicep curls	15x
5	planks	60 seconds
6	Box jumps	60 seconds
7	Calf raises	10x
8	Mountain climbers	60 seconds

Week 4-6

Station number	exercises	Time/ reps
1	Press ups	90 seconds
2	Walking lunges	20x
3	squats	75 seconds
4	Bicep curls	20x
5	plank	90 seconds
6	Box jumps	75 seconds
7	Calf raises	15x
8	Mountain climbers	90 seconds

Appendix 7 - Weekly Heart rate

Week 1	Heart rate
Resting	59 bpm
Post warm up	71 bpm
Mid circuit	107 bpm
Post circuit	103 bpm
Post cool down	66 bpm

Week 2	Heart rate
Resting	64 bpm
Post warm up	76 bpm
Mid circuit	103 bpm
Post circuit	93 bpm
Post cool down	67 bpm

Week 3	Heart rate
Resting	68 bpm
Post warm up	70 bpm
Mid circuit	97 bpm
Post circuit	84 bpm
Post cool down	70 bpm

Week 4	Heart rate
Resting	65 bpm
Post warm up	67 bpm
Mid circuit	80 bpm
Post circuit	86 bpm
Post cool down	61 bpm

Week 5	Heart rate
Resting	71 bpm
Post warm up	74 bpm
Mid circuit	108 bpm
Post circuit	85 bpm
Post cool down	65 bpm

Week 6	Heart rate
Resting	68 bpm
Post warm up	68 bpm
Mid circuit	71 bpm
Post circuit	74 bpm
Post cool down	61 bpm

APPENDIX 8 - Mid Pep fitness test results

Fitness test	Components of fitness	score	Compared to normative data
1m sit up	Muscular endurance	39	excellent
1m press up	Muscular endurance	37	excellent

APPENDIX9 - End of Pep fitness test results

Fitness test	Component of fitness	score	Compared to normative data
1m sit up	Muscular endurance	41	excellent
1m press up	Muscular endurance	39	excellent

Personal exercise programme training record form

Week 1

Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Physical Education		1PE0/04
Centre name: ████████████████████	Centre number: ██████████	
Candidate name: ██████████	Candidate number: ██████████	
Chosen activity/sport: Netball		
Chosen method of training: Circuit Training		
Date and number of training session: 21/04/2023		

Pre-exercise heart rate before warm up	Working heart rate	Immediate post-exercise heart rate
59bpm	107bpm	66bpm

Recovery heart rate at the following intervals (bpm)	1 min	2 min	3 min	4 min	5 min
	102bpm	96bpm	88bpm	83bpm	79bpm

Description of training session appropriate to the method of training, e.g. map of continuous training course, plan of circuit training session
Station 1:press up 1 minute Station 2:walking lunges 3x8 reps Station 3:squats 20x Station 4:bicep curl 2kg x15 Station 5:plank 1 minute Station 6:box jumps 25x Station 7:calf raises 25x

Any adaptations or changes you have made to this training session and why
Added skipping for 2 minutes

Personal exercise programme training record form

Week 2

Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Physical Education		1PE0/04
Centre name: [REDACTED]	Centre number: [REDACTED]	
Candidate name: [REDACTED]	Candidate number: [REDACTED]	
Chosen activity/sport: Netball		
Chosen method of training: Circuit Training		
Date and number of training session: 28/04/2023		

Pre-exercise heart rate before warm up	Working heart rate	Immediate post-exercise heart rate
64 bpm	103 bpm	93 bpm

Recovery heart rate at the following intervals (bpm)	1 min	2 min	3 min	4 min	5 min
	87 bpm	85 bpm	79 bpm	72 bpm	67 bpm

Description of training session appropriate to the method of training, e.g. map of continuous training course, plan of circuit training session
Station 1:press up 1 min Station 2:walking lunges 3x8 reps Station 3:squats 20x Station 4:bicep curl 2kg x15 Station 5:plank 1 minute Station 6:box jumps 25x Station 7:calf raises 25x Station 8:skipping 2 minutes

Any adaptations or changes you have made to this training session and why
I added skipping to my training as it increases my working heart rate and I perform this exercise anaerobically to improve my netball performance when working in my anaerobic zone.

Personal exercise programme training record form

Week 3

Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Physical Education		1PE0/04
Centre name: [REDACTED]	Centre number: [REDACTED]	
Candidate name: [REDACTED]	Candidate number: [REDACTED]	
Chosen activity/sport: Netball		
Chosen method of training: Circuit Training		
Date and number of training session: 05/05/2023		

Pre-exercise heart rate before warm up	Working heart rate	Immediate post-exercise heart rate
68 bpm	97 bpm	70 bpm

Recovery heart rate at the following intervals (bpm)	1 min	2 min	3 min	4 min	5 min
	82 bpm	78 bpm	76 bpm	72 bpm	67 bpm

Description of training session appropriate to the method of training, e.g. map of continuous training course, plan of circuit training session
Station 1:press ups 1 mins Station 2:walking lunges 3x8 reps Station 3:squats 20x Station 4:bicep curls 2kg 15x Station 5:plank 1 minute Station 6:box jumps 25x Station 7:calf raises 25x Station 8:skipping 2mins

Any adaptations or changes you have made to this training session and why
Increase length of plank

Personal exercise programme training record form

Week 4

Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Physical Education		1PE0/04
Centre name: [REDACTED]	Centre number: [REDACTED]	
Candidate name: [REDACTED]	Candidate number: [REDACTED]	
Chosen activity/sport: Netball		
Chosen method of training: Circuit Training		
Date and number of training session: 12/05/2023		

Pre-exercise heart rate before warm up	Working heart rate	Immediate post-exercise heart rate
65 bpm	80 bpm	61 bpm

Recovery heart rate at the following intervals (bpm)	1 min	2 min	3 min	4 min	5 min
	71 bpm	68 bpm	67 bpm	64 bpm	60 bpm

Description of training session appropriate to the method of training, e.g. map of continuous training course, plan of circuit training session
Station 1: press ups 1 min Station 2: walking lunges 3x8 reps Station 3: squats 20x Station 4: bicep curls 2kg x15 Station 5: plank 1m 10 Station 6: box jumps 25x Station 7: calf raises 25x Station 8: skipping 2mins

Any adaptations or changes you have made to this training session and why
Increase skipping time to 3 minutes Increase plank by 10 seconds

Personal exercise programme training record form

Week 5

Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Physical Education		1PE0/04
Centre name: ████████████████████	Centre number: ██████████	
Candidate name: ██████████	Candidate number: ██████████	
Chosen activity/sport: Netball		
Chosen method of training: Circuit Training		
Date and number of training session: 19/05/2023		

Pre-exercise heart rate before warm up	Working heart rate	Immediate post-exercise heart rate
71 bpm	108 bpm	85bpm

Recovery heart rate at the following intervals (bpm)	1 min	2 min	3 min	4 min	5 min
	81 bpm	77 bpm	74 bpm	70 bpm	65 bpm

Description of training session appropriate to the method of training, e.g. map of continuous training course, plan of circuit training session
Station 1:press ups 1 min Station 2:walking lunges 3x8 reps Station 3:squats 20x Station 4:bicep curls 2kg x15 Station 5:plank 1m 20 Station 6:box jumps 25x Station 7:calf raises 25x Station 8:skipping 3mins

Any adaptations or changes you have made to this training session and why
Increase squats by 5

Personal exercise programme training record form

Week 6

Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Physical Education		1PE0/04
Centre name: ████████████████████	Centre number: ██████████	
Candidate name: ██████████	Candidate number: ██████████	
Chosen activity/sport: Netball		
Chosen method of training: Circuit Training		
Date and number of training session: 22/05/2023		

Pre-exercise heart rate before warm up	Working heart rate	Immediate post-exercise heart rate
68 bpm	71 bpm	74 bpm

Recovery heart rate at the following intervals (bpm)	1 min	2 min	3 min	4 min	5 min
	71 bpm	69 bpm	64 bpm	62 bpm	61 bpm

Description of training session appropriate to the method of training, e.g. map of continuous training course, plan of circuit training session
Station 1:press ups 1 min Station 2:walking lunges 3x8 reps Station 3:squats 25x Station 4:bicep curls 2kg x15 Station 5:plank 1m 20 Station 6:box jumps 25x Station 7:calf raises 25x Station 8:skipping 3mins
Any adaptations or changes you have made to this training session and why
No changes made.