



TRAINING GUIDE

PHYSICAL APTITUDE TEST (PAT)

A structured physical training program is essential for preparing for the Department of Fire and Emergency Services (DFES) career firefighting recruitment process, meeting the demands of the Trainee Firefighter School and maintaining long-term physical fitness throughout your firefighting career.

This Physical Aptitude Test (PAT) Training Guide is a starting point and provides recommended exercises and a training framework to help you prepare for Stage Three of the recruitment process.

If you have taken a break from regular exercise or have any existing health concerns, please consult your GP and receive guidance from a qualified personal trainee or exercise physiologist.

* Please note the ability to complete the program provided does not guarantee success in the PAT.



CARDIOVASCULAR (CARDIO) EXERCISE PREPARATION

You should aim to be performing cardiovascular (aerobic) exercise most days of the week where possible. Commence at an intensity which is comfortable for you to sustain for at least 10 minutes and progress towards longer duration efforts (i.e. 30 minutes).

Your Heart Rate (HR) response can be useful indicator of exercise intensity so monitor wherever possible. As a general starting point, you should be making sure to elicit a HR response of at least 60-80% of your HR Max (formula = $220 - \text{age}$). For instance, if you're 26 years old, your HR Max is 194 beats per minute and recommended exercise intensity is therefore within the range 116 – 155 beats per minute.

Another way to quickly determine your exercise intensity is the talk test, if you're performing light to moderate intensity exercise you will be able to talk but not sing. If you're performing high intensity exercise you will not be able to say more than a couple of words without stopping to take a breath.

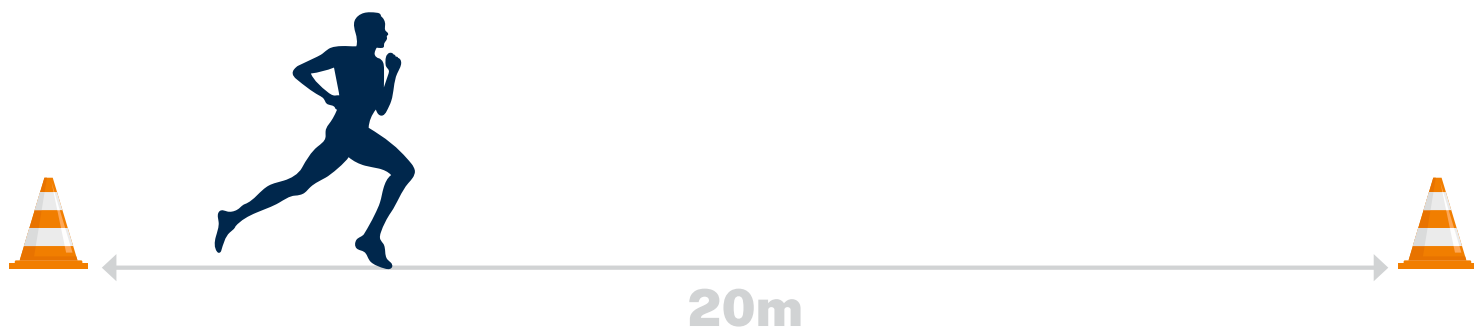
BEEP TEST

The beep test, also known as the shuttle run, measures your cardiovascular fitness.

To progress, you'll need to achieve a score of 8.7. This requires you to keep pace with a series of beeps while running back and forth over a 20m course. In total, you'll cover approximately 1,360m over 8 minutes and 4 seconds.

For an additional challenge try setting up the course on a grass surface as this will be significantly more difficult than performing the test on a flat, non-slip surface like a netball or basketball court.

Don't rely on the test as a training mechanism because it begins at a lower intensity for training benefits but it's the best way to find out where your current performance level is at.



STEADY STATE CARDIO

To build a strong foundation for improving your cardiovascular fitness (aerobic capacity), low to moderate intensity continuous jogging is highly recommended. A quick way to determine you are working in the correct zone for this training is by nose breathing or by being able to maintain a conversation. You could also introduce other modes of cardiovascular exercise including loaded hikes, cycling, rowing and swimming however your focus should remain on jogging.



FARTLEK

Fartlek (Swedish for speed play) is literally, playing around with speeds –essentially, it's a form of unstructured speedwork. It involves a continuous run in which periods of faster running are mixed with periods of easy-or moderate-paced running (not complete rest, as with interval training).

To commence fartlek training you will need to identify somewhere suitable for long distance running such as a park, track, or long path/road. As an example, start with a 10-15-minute run and look for a landmark or something obvious that catches your eye, increase your pace for 30-60 seconds until you reach that landmark and then revert to your slower pace until you recover or identify a new landmark.



INTERVAL TRAINING

This type of training involves small bouts of higher intensity exercise which will significantly elevate your heart rate response. Each high intensity effort is accompanied by a short recovery period before increasing your exercise intensity again. The aim is to maintain the intensity of the high intensity efforts throughout the workout by providing your body enough recovery time.

Interval training will assist the body to adapt to exercise and activity of increasing intensity and workloads, therefore assisting tolerance and conditioning for the later levels of the 20m beep test. Interval training can also be included as part of your training programs utilising other modes of cardiovascular exercise. Start with a 1:1 (60 seconds of work with 60 seconds of rest) or less work to rest ratio and progress towards more work and less rest i.e., 2:1 (60 seconds of work and 30 seconds of rest).



METABOLIC CONDITIONING

EXERCISE PREPARATION

Metabolic conditioning is an alternative training mode for developing cardiovascular fitness. Exercises are performed consecutively without rest for a specific time or repetition.

When participating in these programs, participants should consider (where appropriate) exposing themselves to increased heat and metabolic costs through wearing heavy clothing (i.e., tracksuit and/or jacket, beanie, gloves) or weighted backpacks/ vests (20kg). If you are wearing external loads (vest) take this into account when choosing resistance. It is advised that you DO NOT run while wearing these added items as this will expose you to greater injury risk.

BODY WEIGHT CIRCUIT

Sets: 2–4

Reps: 15 reps or 30 sec of each exercise

Rest between sets or after finishing all exercises: 90 sec–2 min

Exercises: Push up / Crawls / Lunges / Mountain Climbers / Squats / Jumping Jacks

BARBELL CIRCUIT

Sets: 2–4

Reps: 15 reps or 30 sec of each exercise

Rest between sets or after finishing all exercises: 90 sec–2 min

Exercises: Squat / Reverse Lunge/ Bent Over Row / Military Press / Romanian Deadlift / Suitcase Carry

DUMBBELL CIRCUIT

Sets: 2–4

Reps: 15 reps or 30 sec of each exercise

Rest between sets or after finishing all exercises: 90 sec–2 min

Exercises: Front Rack Squat / Dumbbell Overhead Carry / Reverse Lunge / Bent Over Alternating Row / Single Arm Shoulder Press / Farmers Carry

COMBO CIRCUIT

Sets: 2–4

Reps: 15 reps or 30 sec of each exercise

Rest between sets or after finishing all exercises: 90 sec–2 min

Exercises: Dumbbell Squat into Push Press / Spiderman Crawl / Walking Lunges / Turkish Get Up / Renegade Row / Farmers Carry



RESISTANCE EXERCISE PREPARATION

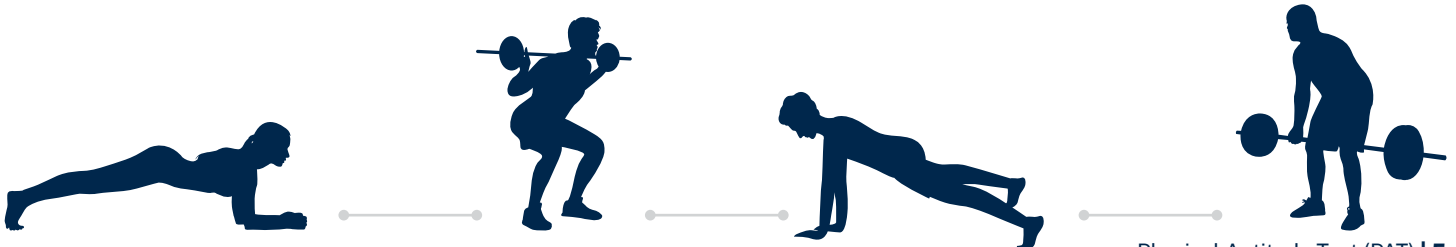
Resistance training should accompany regular cardiovascular exercise on a weekly basis. Aim to add 2 – 3 dedicated resistance training sessions into your weekly workouts to further improve your cardiovascular function whilst improving the strength, power and function of your musculoskeletal system.

The below exercises are important movement patterns that you should be comfortable and familiar performing under load or with resistance specific to your current abilities (start with less and progress to more).

LOWER EXTREMITIES: 1) Squats
2) Deadlift / Lunge

UPPER EXTREMITIES: 1) Pushing Horizontally
(push ups and chest press)
2) Pushing Vertically
(overhead press)
3) Pulling Horizontally
(bent over / seated row)
4) Pulling Vertically
(chin up / lat pulldown)

TRUNK: 1) Planks (prone and side)
2) Rotation
(seated, kneeling and standing)
3) Supine (lying and bridging)





The strength training program provided below consists of a 13-week program broken into four blocks. Each block is specifically designed to manipulate the required sets and repetitions (reps) to maximise your physical performance in the lead up to the PAT.

Sets, Reps and Load Selection: Each block involves determining your loads for the block. Pick a weight you think you can achieve for the prescribed reps (see table). Do as many reps as you can with this weight (ensuring correct technique is maintained). If the reps achieved is two or more than the recommended, choose a heavier load.

Each week, look to increase lower body exercise loads by 2.5 – 5kg and upper body exercise loads by 1.25– 2.5kg (at least for one set in the session and only if correct technique can be maintained). Ensure correct technique can still be maintained with the increased loads.

NOTE: A handy trick is to log your loads each session, so you ensure you keep moving forward.

	Block 1				Block 2				Block 3			Block 4	
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13
SETS	2	2	3	3	3	3	4	4	5	5	5	2	2
REPS	6	8	10	12	8	8	6	6	5	5	3	3	2
REST	60 seconds				90 seconds				2 minutes			3 minutes	

SUPERSETS A superset is a strategy whereby you move from one exercise to the next without taking a break. Once you have completed both exercises you have completed the set. Within this program it is represented by A and B (as shown on next page). The purpose for a superset is to make the training experience more time efficient. In this program, you would complete the Goblet Squat to Bench (A) and then move straight on to Hip Thrust (B). Complete the allocated rest period and then complete the movements again until the prescribed number of sets have been completed.

INCREMENTAL STRENGTH TRAINING

		BLOCK 1 (Week 1-4)	BLOCK 2 (Week 5-8)	BLOCK 3 (Week 9-11)	BLOCK 4 (Week 12-13)
LOWER EXTREMITIES	SQUAT	A) Goblet squat to bench B) Hip thrust	A) Goblet squat to bench B) Romanian deadlift single leg	A) 2 arm kettlebell front squat to box B) Romanian deadlift	A) 2 arm kettlebell front squat to box B) Romanian deadlift
	DEADLIFT/ LUNGE	A) Lunge hold B) Bridge (20 seconds)	A) Lateral lunge B) Lateral bridge	A) Reverse lunge B) Low to high chop	A) Bulgarian split squat B) Vertical stability lift
UPPER EXTREMITIES	PUSHING	A) Kneeling single arm dumbbell shoulder press B) Incline push ups (without loads)	A) Kneeling alternating arm dumbbell shoulder press (hold at top position) B) Push ups	A) Standing single arm dumbbell shoulder press B) Single arm dumbbell chest press	A) Standing alternating arm dumbbell shoulder press (hold at top position) B) Single arm dumbbell press pause
	PULLING	A) Seated single arm pull down B) Inverted row (knees bent)	A) Half kneeling alternating cable pull down B) Inverted Row	A) Seated single arm pulldown B) Single arm dumbbell bent over row	A) Seated single arm pulldown B) Single arm dumbbell bent over row

Note: It is imperative that correct technique is mastered with an exercise prior to adding load. If you are not proficient at a given exercise, continue with this exercise for the next block and adjust the sets, reps and rest period to match that block. Since these sessions are strength-focused, you should do the prescribed number of sets for one exercise category before moving on to the next.



EXAMPLE OF TRAINING PROGRAM BLOCK

WEEK	MON	TUE	WED	THUR	FRI	SAT	SUN
1	Fartlek (20 sec jog, 20 sec stride, 20 sec walk) 8 min x 2	Strength Block 1	Rest	15-30 min zone 2 cardio	Strength Block 1	Metabolic Circuit	Rest
2	Fartlek (20 sec jog, 20 sec stride, 20 sec walk) 8 min x 3	Strength Block 1	Rest	20-40 min zone 2 cardio	Strength Block 1	Metabolic Circuit	Rest
3	Fartlek (20 sec jog, 20 sec stride, 20 sec walk) 8 min x 4	Strength Block 1	Rest	30-45 min zone 2 cardio	Strength Block 1	Metabolic Circuit	Rest
4	Fartlek (20 sec jog, 20 sec stride, 20 sec walk) 8 min x 5	Strength Block 1	Rest	45 min-1 hr zone 2 cardio	Strength Block 1	Metabolic Circuit	Rest
5	10 x 20m shuttles in 1 min 20 sec with 2 min rest. X 8	Strength Block 2	Rest	8 min jog 4 min walk x 3	Strength Block 2	Metabolic Circuit	Rest
6	10 x 20m shuttles in 1 min 12 sec with 2 min rest. X 8	Strength Block 2	Rest	8 min jog 4 min walk x 4	Strength Block 2	Metabolic Circuit	Rest
7	10 x 20m shuttles in 1 min 5 sec with 2 min rest. X 8	Strength Block 2	Rest	8 min jog 3 min walk x 3	Strength Block 2	Metabolic Circuit	Rest
8	10 x 20m shuttles in 1 min with 2 min rest. X 8	Strength Block 2	Rest	8 min jog 2 min walk x 3	Strength Block 2	Metabolic Circuit	Rest
9	Intervals 1 min on 1 min off x 8	Strength Block 3	Rest	Beep Test + 8 min jog 2 min walk x 3	Strength Block 3	Metabolic Circuit	Rest
10	Intervals 1 min on 1 min off x 9	Strength Block 3	Rest	Beep Test + 8 min jog 2 min walk x 2	Strength Block 3	Metabolic Circuit	Rest
11	Intervals 1 min on 1 min off x 10	Strength Block 3	Rest	Beep Test + 8 min jog 2 min walk	Strength Block 3	Metabolic Circuit	Rest
12	Fartlek (20 sec jog, 20 sec stride, 20 sec walk) 2 x 10 min	Strength Block 4	Rest	Beep Test	Rest	Metabolic Circuit	Rest
13	Fartlek (20 sec jog, 20 sec stride, 20 sec walk) 2 x 10 min	Strength Block 4	Rest	Beep Test	Rest	Metabolic Circuit	Rest



ADDITION PREPARATORY INFORMATION

It is always important to warm up and cool down pre and post exercise. This will assist to increase performance throughout your workout, lower your risk of injury and improve your post exercise recovery. Appropriate nutrition and hydration strategies will also greatly assist with the above.

Remember, all dedicated exercise programs require time for the body and its system to adapt. Make sure to provide yourself enough time in preparation for the PAT so that you can maximise the benefits of your targeted exercise program. It is recommended that a minimum of 12 weeks training (longer where possible) is allowed to ensure enough full adaptation to the training program and maximal benefits are achieved (your training will need to be performed frequently and consistently throughout this time).

If you aren't sure where to commence with your exercise preparations, please visit the Exercise & Sports Science Australia -ESSA website and download the Adult Pre-Exercise Screening (APSS) tool. The APSS has been designed to assist those becoming more active or increasing exercise intensity, to do so safely and under appropriate medical guidance.