To 5K and Beyond — 16-week Training Plan

■ Speed/endurance　■ Running strength/quickness　■ Aerobic development　■ Cross training (fill in the blank)　■ Strength training

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	Hills, intervals or fartlek	Recovery	Long/aerobic	Recovery	Aerobic	Tempo or long run	Recovery
1	■ 15-20min: Walk	Rest – or – ■ 30min: _____	■ 15-20min: Walk ■ Strength	Rest – or – ■ 30min: _____	■ 15-20min: Walk	■ 15-20min: Walk – or – ■ 30min: _____	Rest – or Fun active play
2	■ 20-25min: Walk ■ Drills	Rest – or – ■ 30min: _____	■ 20-25min: Walk ■ Strength	Rest – or – ■ 30min: _____	■ 20-25min: Walk ■ Drills	■ 20-25min: Walk – or – ■ 30min: _____ ■ Strength	Rest – or – Fun active play
3	■ 5min: Walk – then – 1min/5min: Run/walk intervals X 5 ■ Drills	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 1min/5min: Run/walk intervals X 5 ■ Strength	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 1min/5min: Run/walk intervals X 5 ■ Drills	■ 5min: Walk – then – 1min/5min: Run/walk intervals X 6 ■ Strength	Rest – or – Fun active play
4	■ 5min: Walk – then – 1min/4min: Run/walk intervals X 6 ■ Drills	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 1min/4min: Run/walk intervals X 6 ■ Strength	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 1min/4min: Run/walk intervals X 6 ■ Drills	■ Maximum aerobic function test: 2-3 miles ■ Strength	Rest – or – Fun active play
5	■ 5min: Walk – then – 2min/3min: Run/walk intervals X 8 ■ Drills	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 2min/3min: Run/walk intervals X 10 ■ Strength	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 2min/2min: Run/walk intervals X 10 ■ Drills	■ 5min: Walk – then – 2min/2min: Run/walk intervals X 12 ■ Strength	Rest – or – Fun active play
6	■ 5min: Walk – then – 2min/2min: Run/walk intervals X 10 ■ Drills	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 2min/2min: Run/walk intervals X 10 ■ Strides ■ Strength	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 2min/1min: Run/walk intervals X 10 ■ Drills	■ 5min: Walk – then – 2min/1min: Run/walk intervals X 12 ■ Strength	Rest – or – Fun active play
7	■ 5min: Walk – then – 3min/2min: Run/walk intervals X 7 ■ Drills	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 3min/2min: Run/walk intervals X 7 ■ Strides ■ Strength	Rest – or – ■ 30min: _____	■ 5min: Walk – then – 3min/1min: Run/walk intervals X 8 ■ Drills	■ 5min: Walk – then – 3min/1min: Run/walk intervals X 10 ■ Strength	Rest – or – Fun active play
8	■ 5min: Walk – then – 4min/2min: Run/walk intervals X 8 ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min:	■ 5min: Walk – then – 4min/2min: Run/walk intervals X 6 Easy hills ■ Strides ■ Strength	Rest – or – ■ 15-20min: jog – or – ■ 30min: _____	■ 5min: Walk – then – 4min/1min: Run/walk intervals X 8 ■ Drills	■ Maximum aerobic function test: 2-3 miles ■ Strength	Rest – or – Fun active play
9	■ 5min: Walk – then – 4min/2min: Run/walk intervals X 8 ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min:	■ 5min: Walk – then – 4min/1min: Run/walk intervals X 8 Easy hills ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 4min/1min: Walk/run intervals X 8 ■ Drills	■ 5min: Walk – then – 4min/1min: Walk/run intervals X 12 ■ Strength	Rest – or – Fun active play

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	Hills, intervals or fartlek	Recovery	Long/aerobic	Recovery	Aerobix	Tempo or long run	Recovery
10	■ 30min: Aerobic run 3min/2min: Run/walk intervals X 7 ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 5min/2min: Run/walk intervals X 6 Easy hills ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 6min/1min: Run/walk intervals X 6 ■ Drills	■ 5min: Walk – then – 6min/1min: Run/walk intervals X 8 ■ Strength	Rest – or – Fun active play
11	■ 35min: Aerobic run ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 6min/2min: Run/walk intervals X 6 Easy hills ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 6min/1min: Run/walk intervals X 6 ■ Drills	■ 5min: Walk – then – 8min/1min: Run/walk intervals X 7 ■ Strength	Rest – or – Fun active play
12	■ 35min: Aerobic run ■ Drills – or – ■ Time trial at track: 1.5 miles	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 6min/1min: Run/walk intervals X 7 Easy hills ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 10min/1min: Run/walk intervals X 3 ■ Drills	Rest – or Fun active play	**Rest - or Fun active play**
13	■ 35min: Aerobic run ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 7min/1min: Run/walk intervals X 6 Hills – or – fartlek ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 15min/1min: Run/walk intervals X 3 ■ Drills	■ 5min: Walk – then – 20min/2min: Run/walk intervals X 1 15min/2min: Run/walk intervals X 2 10min/2min: Run/walk intervals X 1 ■ Strength	Rest – or – Fun active play
14	■ 35-40min: Aerobic run ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 8min/1min: Run/walk intervals X 5 Hills – or – fartlek ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 5min: Walk – then – 20min/2min: Run/jog intervals X 2 ■ Drills	■ 5min: Walk – then – 20min/2min: Run/walk intervals X 1 15min/1 min: Run/walk intervals X 2 ■ Strength	Rest – or – Fun active play
15	■ 40min: Aerobic run ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 40min: Aerobic run ■ Strides pickups ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 40min: Jog ■ Drills	■ 5min: Walk – then – 30min/2min: Run/walk intervals X 1 20min/2min: Run/walk intervals X 1 10min/2min: Run/walk intervals X 1 ■ Strength	Rest – or – Fun active play
16	■ 40min: Aerobic run ■ Drills	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 40min: Aerobic run Easy hills ■ Strides ■ Strength	Rest – or – ■ 15-20min: Jog – or – ■ 30min: _____	■ 40min: Aerobic run ■ Drills	■ Maximum aerobic function test: 2-3 miles ■ Strength	**Run a – 5k!**

The Key to these Running Programs

Aerobic runs

These runs are the foundation of fitness and health. Run at or slightly below your maximum aerobic heart rate (MAHR) for the duration of the run. You should be able to easily converse. At least 80 percent of your running should be at or below the MAHR up to four to six weeks prior to an event or PT test. The first 10 minutes of the aerobic runs in this plan are intended as a relaxed warm-up and to gradually raise your heart rate toward your MAHR. When you finish these runs, you should feel as if you could run more.

To find your maximum aerobic heart rate, use Dr. Phil Maffetone's "180 formula":

1. Subtract your age from 180. (Ex: 180 – 30 = 150)
2. Modify this number by selecting the option below that best matches your health profile:

a. If you have, or are recovering from, a major illness or are taking medication, subtract an additional 10 (Ex: 150 – 10 = 140).

b. If you have not exercised before, have been training inconsistently or been injured, have not recently progressed in training or competition, or if you get more than two colds or bouts of flu per year, or have allergies, subtract an additional 5. (Ex: 140 – 5 = 135)

c. If you've been exercising regularly (at least four times weekly) for up to two years without any of the problems listed in a or b, keep the number (Ex: 180 – 30 = 150) the same.

d. If you have been competing for more than two years without any of the problems listed above and have improved in competi-tion without injury, add 5 (Ex: 180 – 30 + 5 = 155).

Body adaptation: Aerobic development. Builds capillaries and mitochondria — cellular structures that help your body burn fuel aerobically, and with a large percentage of fat as fuel — as well as fat-burning capacity and relaxed running form.

Common mistakes:

■ Ignoring MAHR and effort since you may be going slow. When you run above your MAHR, you are burning mostly glucose/glycogen and often tapping into anaerobic metabolism, which inhibits aerobic development.

■ Trying to run at a specific pace.
■ Going too fast up hills.

Long runs

These are a significant aerobic stimulus. Time on your feet is the goal — not speed. In a sugar-depleted "fasting" state (no carbohydrates before or during the run), you'll teach your body to burn fat and recruit more muscle fibers — that is, progressively activate muscle fibers as muscles wear out during a workout. Start very comfortably below your MAHR. On the return, you may run at your MAHR. Slowly build up your pace, and slowly extend the time on your feet to an hour and a half (two hours for experienced runners) once every two weeks. Maintain adequate hydration by following your thirst cues. Don't over-drink water as this can lead to hyponatremia — a dangerous and life threatening condition caused when your sodium levels are too low. Replace fluids with a good recovery meal shortly after a long run, preferably within 30 minutes. As you get closer to race day, do the second half of these runs at near-marathon pace if you're feeling good.

Body adaptation: Aerobic development. Builds capillaries, mitochondria, fat-burning capacity, and relaxed running form. Longer runs (longer than one hour) stimulate maximum muscle recruitment without the run being "hard."

Common mistakes:

■ Running too fast so that you finish fatigued and slow. Like all training runs, you should feel as if you could do this run again if you had to.

■ Starting out above MAHR and tapping all the glucose reserves instead of stimulating fat burning.

■ Relying on carbs for energy versus training your body to mobilize fat as fuel.

■ Making this one run more than 50 percent of your weekly miles.

Jog (Slow Jog)

The jogs in this plan help you recover and focus on a relaxed and efficient movement pattern. They're also good for mental relaxation, stress reduction and general health. You should run much more slowly than you're capable of, well below your MAHR. Use a light, springy running motion, and keep your cadence close to 180. The goal is an easy 20 to 30 minutes of activity.

Body adaptation: Aerobic development. You train the move-ment pattern as you focus on form, breathing and relaxation. This easy activity stimulates your parasympathetic nervous system, which is essential for balancing the stress generated every day from the sympathetic nervous system.

Common mistakes:
■ Timing your jog for speed.
■ Getting frustrated with the slow pace.
■ Deciding to run this above your MAHR.

Threshold or tempo run

Threshold is the top-end aerobic pace, right at the line between aerobic and anaerobic — the fastest you can run without generating more lactic acid than you can recycle back into energy. Called the anaerobic threshold, it's a pace you could sustain for at least 30 to 60 minutes once you are fit, about a 10K pace.

For these runs, warm up nice and easy for at least 10 min-utes. Choose an out-and-back or loop course you enjoy that is uninterrupted by traffic. A track works well for shorter distances. Run at comfortable, hard effort, building from 15 minutes to up to 30 minutes. Your effort and heart rate (if you wear a heart-rate monitor) should be constant from week to week, but as you become more efficient, your pace will increase naturally.

Body adaptation: Develops relaxed speed and running economy; improves aerobic development (remember, this is below anaerobic threshold); and raises your anaerobic threshold by running at a pace at or slightly below it. Helps teach pacing.

■ Many novice and experienced runners do this "all out" or think of these as "races."
■ Checking watch and wanting to run specific times.
■ Thinking you need to improve time with each successive run and trying to force this. Instead, think: "fast and relaxed."

Fartlek

Running should be fun. A fartlek is a type of fun running first done in Sweden in the 1930s and practiced by runners and coaches to this day. "Fartlek" literally means "speed play."
Speed up and slow down according to how you feel — not by any set pace or time interval. This is how a child runs. Make the recovery portions very relaxed. This is a great way to work on form, relaxation, dynamic stretching and strength.
    Make it up as you go. Run quick and relaxed to telephone poles, up hills, to a certain target. Like play, there is no time or distance outcome. The fast segments can be 30 seconds to a few minutes, with the total run time anywhere between 20 and 40 minutes, or longer once you're fit and ready. Pick a fun, scenic route with little traffic. Warm up for 10 minutes, then run the whole mix of paces over an undulating terrain. Mix in some sprints, hills and strides for a minute or two, then recover between the speed segments. Cool down for 10 minutes.
    Body adaptation: Aerobic development and coordination with efforts right below the anaerobic threshold. Develops relaxed leg speed, as this is your focus — and not a specific pace. Also develops strength if you incorporate sprinting up some hills.

Common mistakes:
■ Making this a structured workout with a time or pace goal.
■ Making this hard and anaerobic for long segments.
■ Not recovering between speed segments.

Intervals

These develop relaxed speed at or close to your 5k to 10k race pace. Improves your ability to run at anaerobic threshold where you are still aerobic and recycling lactate. Teaches pace judg-ment and relaxation with effort, and rehearses speeds of the race or test without the run being overly taxing. The goal is to feel a strong effort but far from all out.
    You repeatedly cover a set distance or time interval with a recovery interval between each. Warm up for 10 minutes. Consider some light, quick and short strides to loosen up. Choose a distance or duration that you feel comfortable repeating. These can be measured in minutes or laps — for the purpose of these plans, we've measured them in minutes, with goal distances and paces included for the half-marathon and marathon plans. The total of the faster running can be five minutes for the beginner and up to 20 minutes for the more advanced runner. Usually the recovery interval will be of equal time to the faster interval.
    For long-distance training, the rest is short. While training for shorter distances, the speed is fast with full recovery. Allow your heart rate to recover to the 120-130 bpm range so you feel ready to go again. Stop the workout if you struggle to hold your pace or suspect your form is compromised. Cool down with an easy 10-minute jog. Pace of the interval is not all-out, but stay near your 5K to 10K goal pace. You should always end this workout feeling as if you could do another interval if you had to.
    Body adaptation: Develops relaxed speed. Raises anaerobic threshold by running at a pace at or slightly above this. Helps teach pacing and tolerance to oxygen debt — when your body can't supply enough oxygen to your muscles for normal function.

■ Trying to run a specific time and running all-out and too fast. The times are not important. The physiological and strength adaptations are what matter.
■ Too short a recovery jog and not running the repetition well.
■ Racing these with training partners or joining a group above your level.

Hills

Many runners fear hills and avoid them, but running up and down hills at a comfortable pace with good technique develops strength as you run up. It's like going to the gym for free — and you are outside! Running downhill is really fun as you develop relaxed speed and work on form.
    The course can be a loop with a couple of hills ranging from a hundred meters to a half-mile. If you're lucky to live in the mountains, you can climb for a couple of miles and then run swiftly down. As a beginner, do not try to run fast on the uphills. Keep tall with your chest up and open. Look forward and resist the tendency to look down and bend at the waist. Keep your stride short, and use your glutes to push and spring off the ground. Practice running efficiently and quickly on the downhills with faster turnover. Do not hit hard into the ground with an outstretched leg. Think: "Run over the ground and not into the ground." On the uphills, your heart rate will exceed your MAHR but should still be below your anaerobic threshold.
    Body adaptation: Leg strength (uphill); leg speed, coordination and mobility (downhill). Aerobic development, since the courses will involve running below your anaerobic threshold with most of the running relaxed and below your maximum AHR.

Common mistakes:
■ Running too fast and straining up the hill at the expense of good form and going into oxygen debt.
■ Running too hard with high impact on the downhills. Re-member: Good downhill running is a skill.

Strides

Strides, also known as pickups, develop speed and coordination without running "hard." This is a form of dynamic stretching, coordination and strength work, as distances are very short. No lactic acid accumulates. Doing a lot of anaerobic work inhibits aerobic development and is stressful. This should be fun! All an-imals (humans included) love to do short sprints. Strides make you a better runner for short and long events.
    During a run, at the end of a run, or after a thorough warm-up, do four to eight pickups of 50 meters to 80 meters, gradually speeding up to a sprint, then slowing back down. A grass field is ideal. Accelerate naturally and progressively, and decelerate slowly. Give yourself a full recovery between each. The goal is to not develop lactic acid or fatigue. Each should feel progressively easier and quicker as you loosen up. Focus on form and relaxed speed.
    Body adaptation: Strengthens and adds mobility to the key muscles and tendons used in running. Develops coordination and skill.

Common mistakes:
■ Running too hard and long for the strides so that your form breaks down.
■ Not recovering between strides and building up acidity in muscles.
■ Thinking of these as "workouts" that need to be done harder

and faster each time.
- ■ Muscling through the strides without focusing on form.
- ■ When you feel coordinated, strong, pain free, and safe in your strides, only then should you attempt workouts focused around high intensity interval training (HIIT). The reward of this type of training is high, but so is the risk if your form and function are not correct.

Drills

The drills in this program first develop coordination through repetition of correct movement. As you progress, they add strength and mobility. Like sprints, this should be fun and a bit challenging!

Work on mastering the movement before trying to add speed or power to the drills. A grass field is the ideal surface. Give yourself a full recovery between sets. Beginning runners pursuing the 5K plan should stick with jumping rope, lateral jumps, four square, heel lifts, grapevines and razor scooter (for correct form, check out the videos in our web portal). Those doing our half-marathon and marathon plans can progress to tougher drills such as ABCD skips, "run with tether" and more. Do drills a few times a week or even daily at the end of a run. Mix it up and have fun with it.

Body adaptation: Strengthens and adds mobility to the key muscles and tendons used in running. Develops coordination and skill of running.

Common mistakes:
- ■ Doing drills with incorrect form.
- ■ Not recovering between sets.
- ■ Applying power before mastering the movement skill.
- ■ Muscling through the exercises without focusing on form.

Cross-train

Pick an enjoyable activity you can fit into your day to get 30 minutes of relaxed activity. Swimming, biking, CrossFit, gym work, yoga … it's all good as long as it's not stressful and it promotes relaxation and recovery.

Different activities allow you to recover from the tissue stresses of running, especially for the beginner. The American College of Sports Medicine recommends that everyone try to get 30 minutes of physical activity daily with the safe guidelines of increasing running volume no more than 10 percent a week. Cross-training can be fun and will work your entire system in a different way to produce greater overall fitness. It's not specific to running, though, so don't assume that cross-training will greatly assist you in passing your PT test.

Body adaptation: Continued aerobic development as well as specific strength.

Common mistakes:
- ■ Going too hard on recovery cross-training days.
- ■ Using poor technique in new activities, adding to existing mechanical stress on tissues.
- ■ Assuming that the cross-training will make you run faster.
- ■ If you are using cross-training during an injury, assum-ing that when the injury is healed you can jump back into the same volume and intensity of running as you were doing with cross-training sessions. Remember that the tissue load of run-ning is different, even if you are "fit."

Pre-event practice race

This run is a race simulation done at a comfortably hard pace but not all out. You practice and develop rhythm, relaxation at higher speeds and pacing. You are maximally tapping your aerobic system and becoming slightly anaerobic to help develop tolerance to lactate and fatigue. This should only be done four to six weeks out from your or event — make it one of your long runs around that time. It will build confidence in what you can do on the day of your event.

Simulate what you will do on race day. Wear similar clothes and footwear, find a similar course, eat similarly, and warm up for 10 minutes. Do a few light strides. Do not stretch. Try using positive affirmations before and during the run.

Body adaptation: Raises your anaerobic threshold and re-hearses relaxed speed.

Chart your progress!

Common mistakes:
- ■ Going 100 percent. Try 95 percent instead. Finish strong and save your best for event day.
- ■ Starting out too fast and slowing at the end. Trying to run faster each time.

Maximum aerobic function test

(Used with permission from Dr. Phil Maffetone)

This test measures the improvements in aerobic speed while you're working on building your base. Building aerobic speed means you can run faster at the same aerobic heart rate. Without objective measurements, you can fool yourself into thinking you're progressing.

Perform the MAF test on a track or measured flat with your heart-rate monitor, running at your maximum aerobic heart rate found with Dr. Maffetone's 180 Formula. Three to five miles provides good data, although a one-mile test still has value. Do the test following an easy warm-up.

Below is an example of an MAF Test performed by running on a track, at a heart rate of 145, calculating time in minutes per mile:

Mile 1: 11:32
Mile 2: 11:46
Mile 3: 11:49

Body adaptation: The MAF test should indicate faster times as the weeks pass. You are building capillaries, mitochondria, fat-burning capacity and relaxed running form. This means the aerobic system is improving, enabling you to run faster with the same effort. Below is an example showing the improvement of the same person from above. In these plans, an MAF test is prescribed regularly only for beginning runners pursuing the 5K plan. Others should perform the test regularly throughout the year, ideally every month.

	September	October	November	December
Mile 1:	11:32	10:29	9:35	9:10
Mile 2:	11:46	10:46	9:43	9:22
Mile 3:	11:49	10:44	9:47	9:31

Chart your progress!

Common mistakes:

■ Running different courses in different conditions for the test. Examples would be an extremely hot day or a course with significant wind, both of which affect your speed at the same effort.

■ Doing the test on a day when you're extremely fatigued.

■ Not warming up.

■ Doing too long a test when you are starting. If you're a new runner, do this for only one or two miles.

 "Cheating" and running faster than the pre-determined MAHR.