ELEVATION

What is elevation?

In layman's terms for these challenges, elevation is simply how far you climb uphill. This could be in a single climb, or as an accumulation across several climbs (typical of elevation statistics supplied for trail runs).

How do I find out elevation on a course?

For the purposes of these challenges elevation is not the actual height of a peace of land such as the top of a mountain. Elevation is the change in elevation (upwards only) that you go through when moving from point A to point B. For example, Everest base camp is at an elevation of 5,364 m so the climb (elevation change) from base camp to the summit is a mere 3,484 m, not 8,848 m which is the height of Everest summit above sea level.

1. Most sports watches record elevation, although you should be wary of the truth. Elevation is more an estimate than a true number on watches, phones, GPS, etc., because there is considerable 'error' associated with this measurement. Even more error than that associated with distance measured by those devices. Error is just variability in measurement and anyone that used a watch or app to track their movements will recognise differences among their distances and those of their friends. The take home from this is always add a little more altitude to your exercise if you have a specific elevation target you are trying to reach.

2. If you don't have elevation data for your planned course you could plan to do it twice and record on your device (watch, app) and adjust your course to obtain the required elevation. You could also plot your course on GoogleEarth (use path measurement option), then use the profile tool to see what the course elevation looks like. There are examples of GoogleEarth elevation profiles in examples below. As you can see they provide a total elevation gain for the course. A good planning tool for you to try.

3. If you don't have massive hills In your area you can repeat a hill over and over. For instance; if you are aiming to cover 1500 metres of elevation, you could find a 300 metre climb and do it 5 times or find a 50 metre hill and do it 30 times. It can be a short steep hill or a longer less steep hill, when gauging elevation it is only referring to the gain from your current position to a higher level.

4. If you have no concept of hills at all, you can use flights of stairs as a reference, one flight of stairs is approx. 3.35 metres of elevation so 3 flights of stairs is approx. 10.5 metres of vertical elevation though stairs can feel much harder than hiking outdoors as modern trails generally less steep to prevent erosion from rain. Don't believe us? A flight of stairs, usually 10 steps, is equivalent to taking 38 steps along flat ground but is a great calorie burner.

Examples from GoogleEarth

Some examples of what different Adventurethon courses are like around Australia as a reference (could be good to get a feel of the various challenges).

Using the Elevation as a rough guide for how some rides feel, you can start to visualise the way courses feel based on elevation profiles and the elevation percentages indicate how steep they are…the higher the % number the steeper it is and therefore the harder the climb feels. Below are a few examples of courses we have used around the country to give you an insight and to help you prepare for these types of challenges in future. One important thing to remember is to look carefully at the left hand axis to determine the estimated elevation change in each climb along the way. That axis will almost always be different for each profile you look at so some 'apparently' awful climbs on paper may really be well within your range, ie. much smaller than they appear on the profile. Similarly, the lower axis will be expanded or compressed to fit to the standard dimensions of the output. This means that all climbs in a 100 km course will appear much steeper than they really are because they are all compressed laterally into a short space. You need to consider Average slopes, Estimated elevation (left axis) and distance (lower axis) in your visualization of a course.

ADVENTURETHON

Coffs MTB- 28km

1076 metres gained and Lost (starts and finishes same spot so must have the same gain as loss theoretically; but how often does this occur on your watch/app? A good example of variability in measurement, or measurement error)

Note max slope 23.3% (bloody Steep). Left axis isn't visible in this example but may be short & steep rather than long and steep (remember compression of the distance laterally).

Townsville MTB- 34km Pallarenda (Freshwater, Radar and Smedleys)

Elevation Gain & Loss 764m over 34km (starts and finishes same place)

Max Slope 16.5% with the Average slope 3% pretty low and the biggest hills approx 9% slope. Longest climb around 24 m to 86 m so only 62 m elevation.

Charters Towers MTB- 18km

6km loops x 3 laps (so do this 3 times)

Max slope is 10% but it really feels super flat with an average slope of 2.5%

You will see there is only a gain of 82.6 metres each lap- so its pretty minor in terms of climbing =247.8m after 3 laps

Townsville Run

Distance 18.2km

Elevation 691m with a Max slope of 28.9% for a short burst BUT an average of 6.3% and a good climb at around 12%

Dwellingup MTB laps – 57km Loop (same loop done 2 x as you can see)

Elevation gain 1143m with a max slope of 12.4% and an average of 3.2%

(Compare to Coffs which has similar elevation in only 28km)