

# Eyes in the Sky

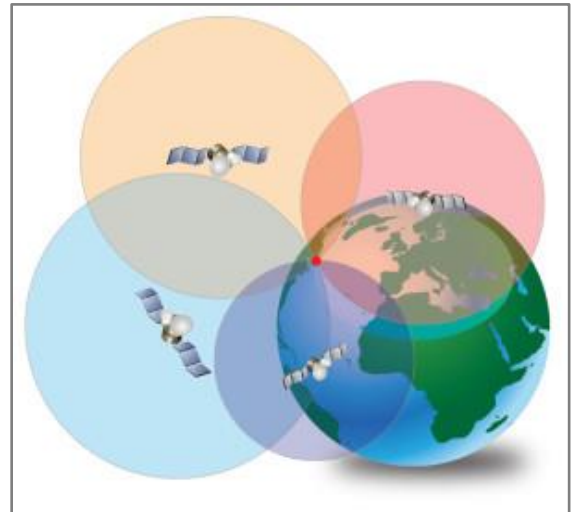
## Try It Out

Pull all three chains taut, and make the ends meet at a point on the map. Where do they meet? Can you make them meet anywhere else?

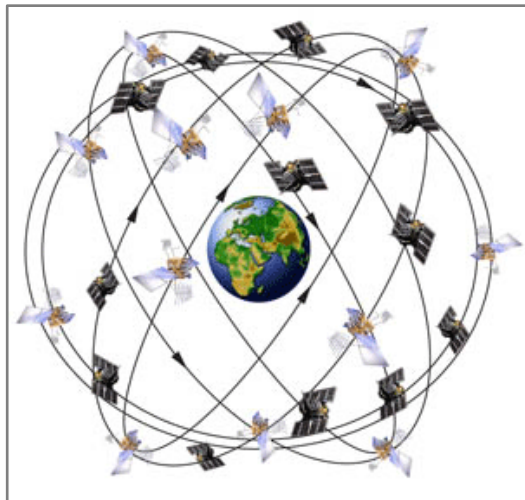
## What's Going On?

You probably noticed that the three chains only meet at a single place on the map. This is basically how GPS (Global Positioning System) works. If you have a cell phone, it's probably equipped with GPS. If you're playing Pokémon GO, you're definitely using GPS. Your location is being tracked by at least *three* satellites, in different positions far up in the sky.

The GPS receiver in your phone measures the distance between itself and each satellite. By knowing these three



Four GPS satellites coordinate to locate a receiver.  
(Image: nuvation.com)



The GPS system consists of around 30 satellites orbiting the earth. (Image: gislounge.com)

distances, your phone can deduce your location on a map. This process is called trilateration.

## What's the Big Deal?

GPS satellites are about 12,500 miles from earth, and the system can determine your location to within about 10 feet. That's like if I asked you to stay right where you are and find a grain of sand on the sidewalk at the corner of 1<sup>st</sup> Street. Capturing that Bulbasaur doesn't seem like such a big feat now, does it?

## Wonder While You Walk...

Truthfully, a GPS receiver will try to find not just three but at least *four* satellites with which to measure its location. Why is a fourth satellite preferred?



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