**Appendix A: Training Items**

Set 1

I know what a crossbow looks like and what it does- shoot arrows. I could label the important parts, but don't have any idea about the details *(1 out of 7)*

I know that a crossbow is a fixed bow and arrow arrangement; that it gets more power than a normal bow and arrow because it allows you to pull the sting back extra hard an then trap it there rather than hold it, and that it is then released by a trigger. *(4 out of 7)*

I know that a crossbow has a stiff, flexible piece of metal as a bow with a wire or strong line; that the bow is permanently mounted on a block of wood or metal; that the wire is pulled back by something that gives a mechanical advantage, either a lever, or small block and tackle, or by a crank wound around a spool that pulls a wire attached to the bow wire. The bow wire is then held back by a pin that is connected to a trigger, and an arrow is set in front of it. Often the pin is forked so the arrow can sit directly in the wire. The pin is directly connected to the trigger so that when you pull on the trigger, it causes it to pivot around a point such that the end that is the pin moves downwards and releases the bow wire. When the pin releases the string, the bow very quickly un-flexes, rapidly imparting all the energy stored in the flexed bow to the arrow. *(7 out of 7)*

Set 2

I know that a handheld GPS receiver is about the size of a TV remote control and tells you where you are anywhere in the world with a high degree of precision.  *(1 out of 7)*

I know that a handheld GPS receiver gets signals from satellites and that, depending on where the receiver is located on the earth, the signals from the satellites create different patterns, and some kind of computational stuff in the handheld receiver computes your position from that combined pattern. *(4 out of 7)*

I know that a the signal measures distances between the receiver and the satellite (by transmitting the exact time at which the signal was sent), and that a receiver measures signals from 4 satellites to compute position. The satellites need ultra-accurate clock, the speed of light is important to being able to determine position, you will need a signal from at least three satellites to determine your position exactly, and the radio signal much be a high-frequency. There are many GPS satellites, monitored by multiple ground stations, and controlled by a master control station. *(7 out of 7)*