How far did I walk?

(Beginning Orienteering)

(All Seasons | Grades 4-8) • **Map Stop 3** • The hilltop (or anywhere you want!)

What is a quick and easy way to find out how far we walked?

Additional Tools Needed: Map (on p.4), 10ft of cord (pre-cut), calculator; available in the plastic box inside the Nature Center, in the southeast corner along the gray fence

Background Information:

Take a good look at the map at the beginning of this packet. How can you use it to figure out **distance**? Do you have any ideas? You can use the **scale** on the map to help you **measure** along the trail. If you know how big an inch on the map is in the real world, you can measure anything you want!

Another way to figure out distance is to use math to **calculate the length of your stride** (how big your steps are). Follow the below activity to learn how.

Activity:

Lay out the piece of **paracord (10ft long)**. The end closest to you will represent point "**A**" and the other end of the cord will represent point "**B**". Walk from A to B and count how many steps it takes - make sure to take normal-sized steps, not giant strides.

Because the paracord is 10ft long, we can **divide** those 10ft by the number of steps you took to calculate the number of feet you travel with every step. Once you've figured out that number (your own personal **ft/step** measure) using a calculator, you can use this stride length to measure any unknown distance!

Choose another two points, anywhere you want - we'll call them point "**C**" and point "**D**," so we don't get confused. C and D should be farther apart than the 10 feet covered by the paracord, but don't worry about knowing exactly how big it is just yet - that's what we'll be measuring using our ft/steps number. If you can't come up with a place to walk, try making a straight path across the top of the hill you are standing on, or walk between this stop (#3) and the previous stop (#2) for a larger distance.

Walk the chosen unknown distance, and **count** your steps as you do. Once you know how many steps are between C and D, **multiply** that number by your ft/step rate. This new number is a good estimate of the actual distance, measured in feet.

Example:

An adult walks a known distance of 10 feet in 6 steps. This reduces to approximately 1.67 feet per step. The adult then walks an unknown distance and it takes 110 steps. Multiplying the foot per step value times the number of steps results in the distance 330 feet.

$$10\ ft \div 6\ steps\ =\ 1.67\ \ ft\ /\ step$$
$$110\ steps \times 1.67\ ft\ /\ step\ =\ 183.7\ ft$$

Both math and maps can be used to help humans figure out where they are, and how far they are traveling. These methods have been used by humans for hundreds of years, long before we developed the digital mapping technology we have today.

What else can you measure with this method? Come up with a few different ideas and try them out, recording your results!

Our **ANSWER** would be that you can measure **any** distance once you determine your own foot/step measure. A few places you might measure are a room in your house, the length of a city block, and anywhere else you're curious about.