What Can You Do With GPS?

Objective:

Students will learn how GPS is used in everyday life and how it can be useful.

Background:

GPS is used in locating, tracking, navigating, mapping, and timing. Locating is determining a basic location of someone or something. Tracking is the process of monitoring something or someone as it moves. Navigating is determining where you are going or getting from one location to another. Mapping includes surveying and mapping locations around the world. Timing involves frequency, precise time measurements, and time intervals.

The following is a list of uses for GPS: Boating, fishing, hunting, camping, hiking, biking, rafting, scouting from land or air, horseback riding, hot air ballooning, aviation, snowmobiling, skiing, search and rescue, four wheeling, emergency vehicle tracking, highway driving, geocaching, surveying, military, mining and precision agriculture. It is also used to survey disaster areas, map movement of environmental disasters (Oil spills, wild fires, floods, etc.), map fallout shelters, sidewalks, streets, trees, and trails in towns. Measuring the growth or decline of mountains, tracking vehicles in a fleet, and summoning medical help all use GPS.

GPS has made locating and rescuing people lost in snowstorms possible if the person has their coordinates to give to rescuers. It also allows people to mark their walking path or trail when hiking, horseback riding, snowmobiling, etc. and then track back to the beginning. This option allows people to enjoy or work in areas previously not accessible and not have to worry about getting lost. GPS tracking collars allow scientists and researchers to track animals in the wild enabling them to learn about habits and movements of species in their natural environment. Pets can have a microchip inserted, so that if they get lost or runaway, they can be easily found.

Fishermen can mark excellent fishing spots and then go back to the same spot at a later date. Surveyors can map areas accurately with less time required. GPS enthusiasts have created a worldwide game of hide and seek called geocaching. Geocaching is a popular recreation activity for family and friends that is continually growing. Users hid small caches and post the coordinates on the web, allowing others to find the caches.

Precision agriculture has developed due to GPS and GIS. GPS allows farmers to cut costs, save time, and become more efficient. It also can help increase productivity and profitability. Auto Steer technology is based on GPS and is becoming readily available and affordable to farmers.

The uses of GPS are endless and new uses are constantly being developed. What are other uses you can think of? The availability of GPS as well as its market segment has increased greatly since its inception. The uses of GPS are continually growing and as is the number of users worldwide.

For More Information:

www.geocaching.com
www.4-H.org
www.trimble.com
www.garmin.com
www.trimble.com/ag_gps.shtml

What Can You Do With GPS?
Activity

GEOCACHING

Create a geocaching account at www.geocaching.com. Do a search by zip code or area to see if there is a cache near you. If it is possible, take the students there and allow them to find the cache. It is recommended you first find the cache yourself, so you know what they are looking for and can help the students. If not, look around the website and show students how to use it and the many different caches there are. There is a great getting started section and frequently asked questions area.

CALCULATE AREA

To Calculate Area:

1. From Main Menu page, select Accessories.
2. Then select Area Calculation.
3. Select "Start" and walk the perimeter of the area you want to measure.
4. Select "Stop" after walking the perimeter.
5. Using the click stick, change the area calculation measurements to acres, feet, miles, etc.
6. To reset Area Calculation go to Options Menu Button, then select Reset.

How can this area calculation be useful? It can make calculating the area of a field, pasture, lot, etc. much easier.

DISCUSSION QUESTIONS

Have the students come up with other uses of GPS and discuss why they think GPS could improve that use.

Using examples given above, what sector of GPS are they a part of? (Locating, tracking, navigating, mapping, and timing)

How has or can GPS positively impact your life? Your family?

Have students develop a list of other uses not discussed and potential future uses.

Ask how GPS is used on television shows to solve crimes.