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Can you find me now?

How a Nintendo Wii console able to determine the location of a Wii remote when a player interacts with a game. The answer is triangulation, a process that determines the location of an object by measuring the angles from two or more fixed points.

Surveyors often use triangulation to measure distance. Starting at a known location and elevation , surveyors measures a length to create a base line and then use a theodolite to measure an angle to an unknown point from each side of the base line. The length of the base line and the two known angles allow a computer or person to determine the location of a third point.[[1]](#footnote-1) (jaims)

Similarly, the Nintendo Wii console uses triangulation to determine the location of a Wii remote. A player places a sensor bar, which contains two infrared transmitters, near or on top of a television. While the player uses the Wii remote, the Wii console determines the remote’s location by calculating the distance and angles between the Wii remote and the two transmitters on the sensor bar. Determining the location of a Wii remote is relatively simple because the sensor bar contains only two fixed points: the transmitters.

A more complex application of triangulation occurs in a global positioning system (GPS) . A GPS consists of one or more earth-based receivers that accept and analyze signals sent by satellites to determine a receiver’s geographic location. GPS receivers, found in handheld navigation devices and many vehicles, use triangulation to determine their location relative to at least three geostationary satellites. According to Sanders, the satellites are the fixed points in the triangulation formula. (How Surveyors Measure Distance and Calculate Angles)

The next time you pass a surveyor, play a Nintendo Wii, or follow a route prescribed by a vehicle’s navigation system, keep in mind that none of it might have been possible without the concept of triangulation.

Works cited

# Works Cited

Cordoba, Nicolas E., and Kara A. Sarkis. The Surveyor's Theodolite Formula. Orlando: Orange County Press, 2012.

Jains, Malila. "How Surveyors Measure and calculate Angles." Today's Modern Surveyor mar. 2012: 30-48.

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1. Cordoba and Sarkis state the electronic theodolites calculate angles automatically and then send the calculated angles to a computer for analysis. (25) [↑](#footnote-ref-1)