

Gyroscope

Try It Out

Thread the string through the small hole in the rod going through the center of the spinning disk. Spin the disk to wind the string around the rod. Stand the gyroscope up on the center rod and hold onto the top while you pull the string out to set the disk spinning. Let go of the top of the gyroscope.

What's going on?

A **gyroscope** is a device used for measuring orientation and angular velocity. When rotating, the spinning disc maintains its orientation, according to the conservation of angular momentum.



Hubble Space Telescope, which uses gyroscopes to maintain the same orientation for long periods of time to take detailed deep space pictures. (Image: US National Archives)

What's the big deal?

Gyroscopes are used in compasses and automatic pilots on ships and aircraft, and in the inertial guidance systems installed in space launch vehicles, and orbiting satellites. Different types of gyroscopes are also an important part of many smartphones, allowing them to detect changes in orientation and direction.

Wonder While You Walk...

The gyroscope technology in smartphones is a little different and does not use a spinning disk. How do you think these tiny gyroscopes work?



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