Neurosky MindWave

Current Uses:
The Neurosky appstore contains games controlled by thought, tools to improve concentration and relaxation, interactive videos, and tools for developing your own apps.

Additionally Daniel Szafir, a Computer Sciences graduate student at UW-Madison has developed two apps that monitor the attention of students during a lecture; one attempts to regain their focus by adjusting the lecture, the other suggests areas to review.

What is the MindWave:
The MindWave is an affordable single-channel electroencephalography (EEG) device capable of measuring and displaying all of the different frequency bands of your brainwaves. It also contains a computer algorithm that analyzes these signals to provide your level of attention and meditation as well as eye blink detection.

How Does it Work:
It uses electrodes applied to the scalp to measure the electrical signals of the brain. These signals occur in six frequency bands associated with different brain functions: Delta, Theta, Alpha, Beta, Gamma, and Mu. Event-Related-Potentials (ERP) seek patterns in waveform in response to stimuli and can be used in brain computer interface (BCI).

Neurofeedback:
Neurofeedback uses EEG to allow users to monitor and train their brain's response to stimuli. This can be used to help treat brain disorders such as: epilepsy, stroke, ADD, ADHD, concussion, autism, headache, depression, insomnia, & Tourette's syndrome.

Brain Computer Interface (BCI):
BCI uses ERPs to allow users to control things with their minds, and also to communicate via thoughts.