HISTORY OF TIMEKEEPING DEVICES

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For thousands of years, devices have been used to measure and keep track of time. The current sexagesimal system of time measurement dates to approximately 2000 BC, in Sumer.
The Ancient Egyptians divided the day into two 12-hour periods, and used large obelisks to track the movement of the Sun. They also developed water clocks, which were probably first used in the Precinct of Amun-Re, and later outside Egypt as well; they were employed frequently by the Ancient Greeks, who called them *clepsydrae*. The Shang Dynasty is believed to have used the outflow water clocks around the same time, devices which were introduced from Mesopotamia as early as 2000 BC.
Other ancient timekeeping devices include the candle clock, used in China, Japan, England and Iraq; the timestick, widely used in India and Tibet, as well as in some parts of Europe, and the hourglass, which functioned similarly to a water clock.
The earliest clocks relied on shadows cast by the sun, and hence were not useful in cloudy weather or at night and required recalibration as the seasons changed (if the gnomon was not aligned with the Earth's axis). The earliest known clock with a water-powered escapement mechanism, which transferred rotational energy into intermittent motions, dates back to 3rd century BC ancient Greece; Chinese engineers later invented clocks incorporating mercury-powered escapement mechanisms in the 10th century, followed by Arabic engineers inventing water clocks driven by gears and weights in the 11th century.
Mechanical clocks employing the verge escapement mechanism were invented in Europe at the turn of the 14th century, and became the standard timekeeping device until the spring-powered clock and pocket watch in the 16th century, followed by the pendulum clock in the 18th century. During the 20th century, quartz oscillators were invented, followed by atomic clocks. Although first used in laboratories, quartz oscillators were both easy to produce and accurate, leading to their use in wristwatches. Atomic clocks are far more accurate than any previous timekeeping device, and are used to calibrate other clocks and to calculate the proper time on Earth; a standardized civil system, Coordinated Universal Time, is based on atomic time.
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THE END

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