

Much can be understood about a people and their way of life by looking at how they measure and organize time. Naturally all peoples will first pay heed to the sun's diurnal (daily) movement to give basic regularity to their lives. The Greeks did, indeed, have a system of dividing the day into 12 hours, a practice obviously borrowed from the Babylonians who used a sexagesimal system (a number system based on 6 rather than 10 - thus our 60 minutes to one hour, 360 degrees to a circle, etc.). This method of dividing the day had two major difficulties, however. First, no one used it except scientists. Ordinary Greeks spoke instead of early day, full market, mid-day, and late afternoon. Although water clocks, klepshydrae, and the sun dial, gnomon, existed by the 5th century B.C., little everyday use was made of such contraptions. A second difficulty with the 12 hour day was that the actual length of the hours varied with the seasons, the hour being shorter in the winter than the summer with its longer days.

After the sun, the next most obvious natural signal for time division are the phases of the moon. Primitive people easily learned to use moon patterns to speak of past events; a hunt, for instance, which took place three moons ago. The actual amount of time needed to complete its phases takes the moon 27 days, 7 hours, 43 minutes and 11.5 seconds, according to modern calculation. In making up a calendar from lunar months the problem will be that the total days in a lunar year of 12 moon months will not add up to the same figure needed to get the earth around its solar orbit, some 365 days, 5 hours, 48 minutes, and 46 seconds (note: even in our so-called technological society we make our year only 365¼ days). The Greeks had 12 lunar months of alternately 29 and 30 days (for a mean length of 29½ days per month), giving a year of only 354 or 355 days. Without a system for bringing the month (essentially a moon thing) in line with the year (a solar thing) the seasons will shift disastrously (3 months short every 8 years) through the calendar, until summer is coming in January, Gamelion, and winter in August, Metageitnion. One of the main purposes of the calendar is to regulate city festivals which are connected to agriculture. It would be a mockery for us to celebrate Thanksgiving, for instance, in April or for them to hold the Anthesteria, Flower Festival of February, in July when the earth is scorched. Thus the Greeks intercalated, or simply stuck in an extra make-up month into the calendar every 2 or 3 years in a make-shift attempt to buoy up the system.

Scientists such as the astronomer Meton (5th century Athenian) and others after him were able to make more precise measurements and calculations, but their influence was little felt in everyday life. To the average Greek the seasons could always be checked against the year's solstices (shortest and longest days of the year) and equinoxes (when the hours of light and dark are equal) and the rising of the great stellar constellations. The civil year itself could bog down in confusion but the Pleiades always rose in May and set in November, delineating the summer season, while Arcturus rose in September to herald the onset of fall. The ancient Greeks thus combined both practicality and scientific understanding in their approach to solving the problem of how to tell time.