

Wow

History of Clocks

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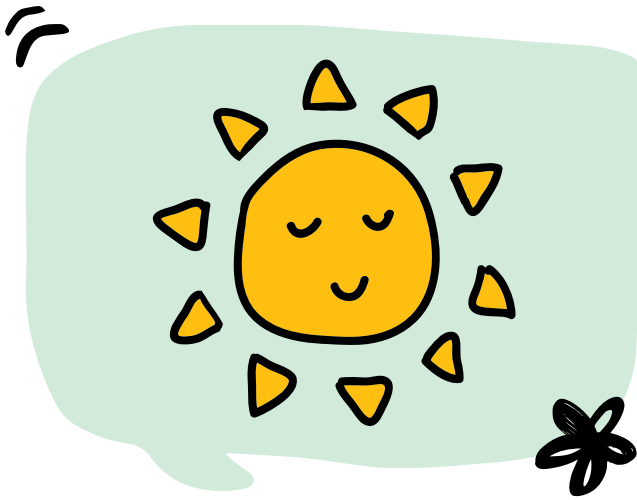
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WHEN DID TIME-KEEPING BEGIN?

We've been keeping time for thousands of years. Our current sexagesimal system (which is a numeral system with 60 as its base) dates back to about 2000 B.C. with the Sumerians - one of the first civilizations in the world.



HOW DID PEOPLE KEEP TIME?

They watched the sun! (But didn't look at it directly).

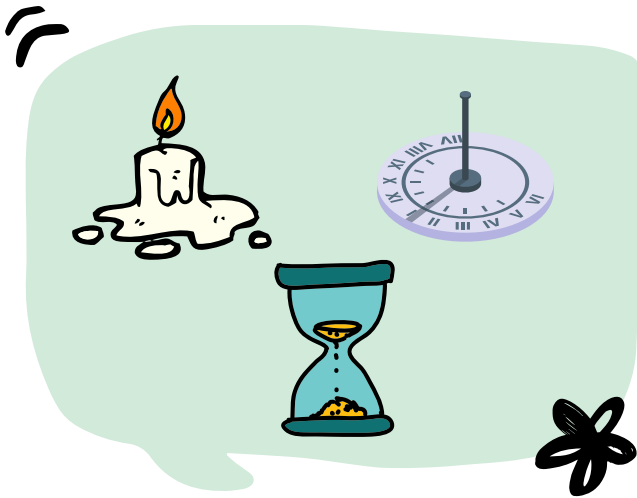
The Egyptians divided their day into 12 hour periods and used obelisks to track the movement of the sun.



HOW DID PEOPLE KEEP TIME?

Egyptians also created water clocks. These used water dripping out of a vessel at a consistent rate to measure the passage of "hours."

Water clocks were used elsewhere in the world, too. Babylonians, Indians, Chinese, Persians, Greco-Romans, medieval Islamics, and Koreans all used forms of water clocks for time-keeping.



HOW DID PEOPLE KEEP TIME?

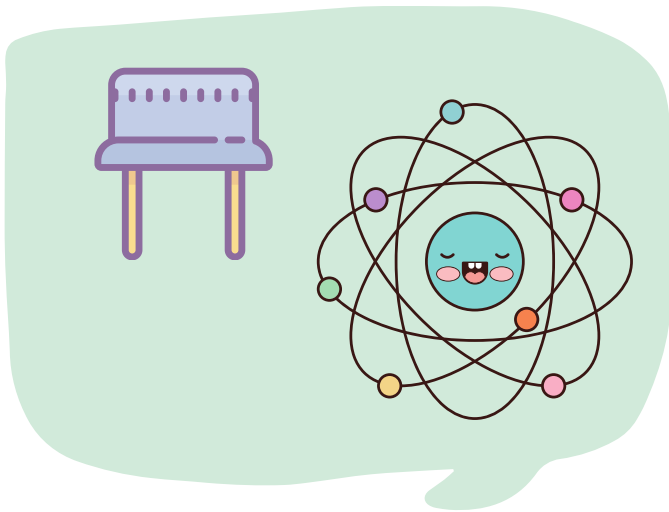
Other ancient forms of time-keeping included

- candle clocks
- hourglasses
- sundials
- timesticks



WHAT ABOUT MODERN CLOCKS?

The first mechanical clocks were invented in Europe sometime in the 14th century. They became the standard for time-keeping until the invention of pendulum clocks in 1656.



WHAT ABOUT MODERN CLOCKS?

Pendulum clocks were the standard and most accurate time keepers until the 1930s when quartz oscillators were invented.

Atomic clocks arrived on the scene after World War II. They are far more accurate than any previous timekeeping device, and are used to calibrate other clocks and to calculate the International Atomic Time and Coordinated Universal Time.

AMAZING CLOCKS THROUGH THE AGES

Outflow Water Clocks



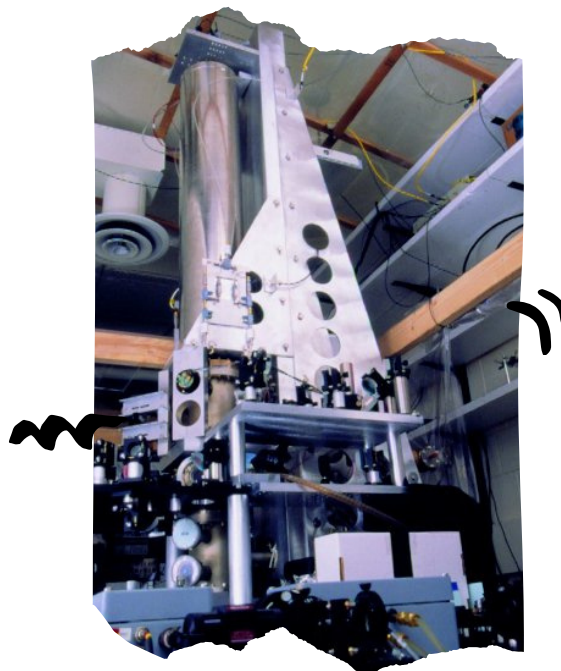
By Marsyas - Own work, CC BY-SA 2.5, <https://commons.wikimedia.org/w/index.php?curid=476174>

German Candle Clock



By de:Benutzer:Flyout - own work, <http://de.wikipedia.org/wiki/Bild:Kerzenuhr.jpg>, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=1783765>

NIST-F1



By National Institute of Standards and Technology - Physics Laboratory: Time and Frequency Division - <http://tf.nist.gov/general/museum/nist-f1.jpg>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=5543438>

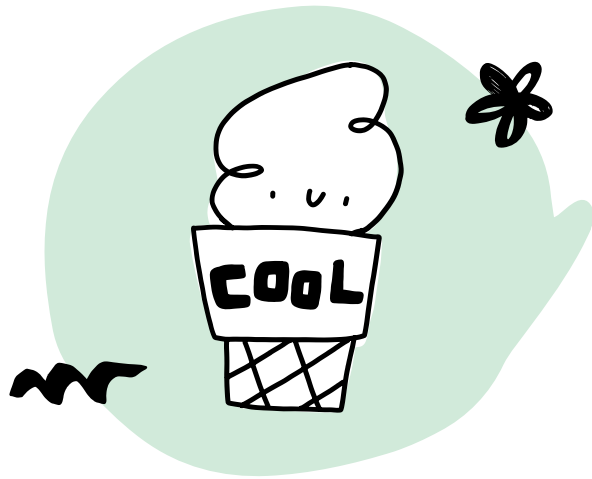
Wow

Build Your Own Water Clock

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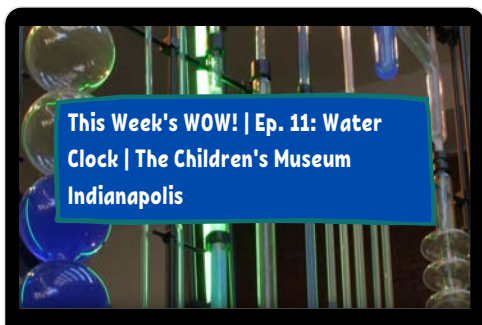


MAKE SURE YOU HAVE THE FOLLOWING BEFORE WE START:

- 2 empty plastic bottles of the same size and shape
- masking tape
- fine-tip permanent marker
- thumbtack
- pitcher of water
- timer (stopwatch, app on phone, tablet, or computer)
- craft knife (to be used by an adult only)
- funnel

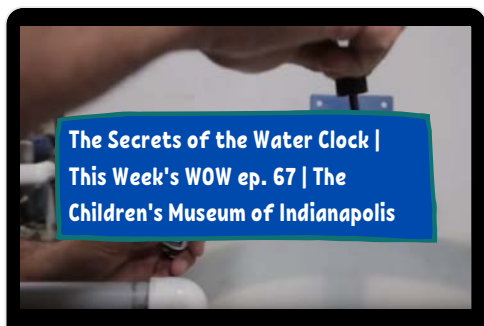
<https://www.youtube.com/watch?v=n9MVsyA750g>

ADDITIONAL RESOURCES



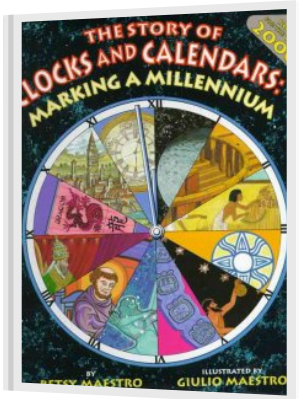
This Week's WOW! | Ep. 11: Water
Clock | The Children's Museum
Indianapolis

<https://www.youtube.com/watch?v=tdGEVZ6zdyM>

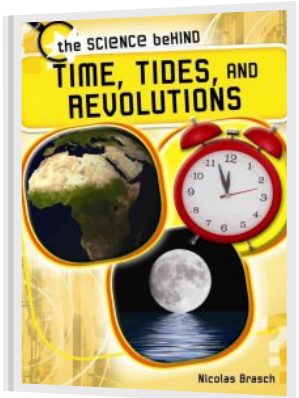


The Secrets of the Water Clock |
This Week's WOW ep. 67 | The
Children's Museum of Indianapolis

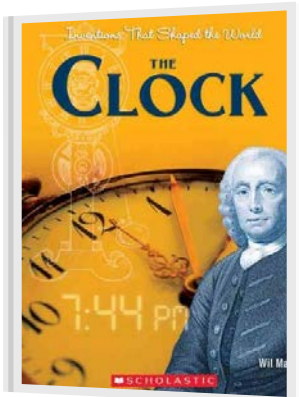
<https://www.youtube.com/watch?v=3Z1SgCqcJL4>



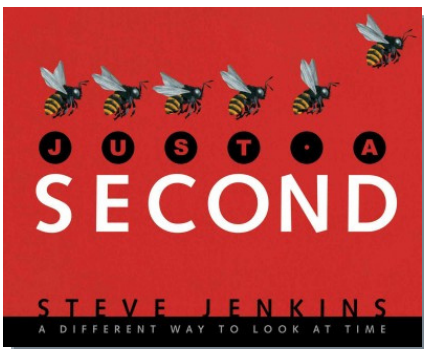
The story of clocks and calendars: making a millennium
Betsy Maestro



The science behind time, tides, and revolutions
Nicolas Brasch



The clock
Wil Mara



Just a second
Steve Jenkins