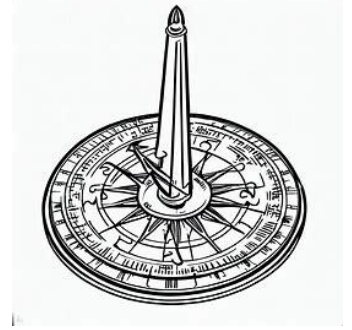


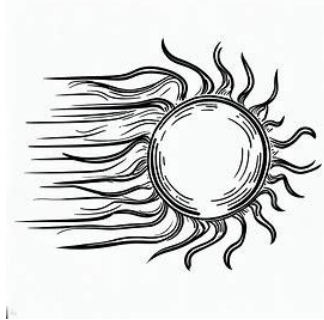
Before Clocks: The Sun's Timekeeping Magic

Long ago, before clocks were invented, people found clever ways to tell time. One of their amazing tools was the sun! The sun, that big ball of light in the sky, helped them know what time it was during the day.

Can you imagine using the sun to tell time? It's like having a natural clock in the sky! One special tool that people used was called a sundial. A sundial was like a special clock that used the sun's shadow to show the time.



Here's how it worked: A sundial had a flat surface with numbers on it. When the sun shone down, it made a shadow on the sundial. People looked at where the shadow fell and matched it with the numbers. That's how they knew what time it was!



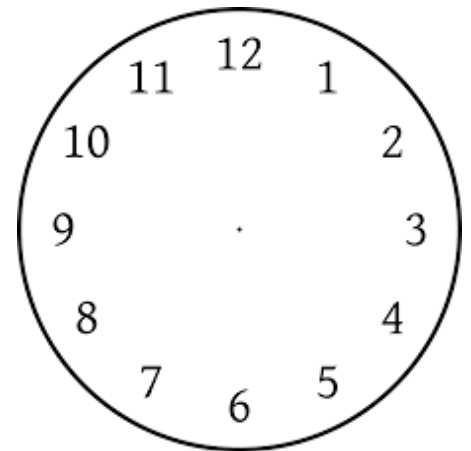
But the sun didn't stay in the same spot all day, did it? It moved across the sky from east to west. That's why sundials had different numbers for different times of the day. In the morning, the shadow was long, and it showed early hours. As the day went on, the shadow became shorter and showed later hours.

People loved using sundials to keep track of time. They could tell when it was time to work, eat, or play just by looking at the shadow. It was like a magical way to know the time without needing a clock.

Even though we have clocks now, it's still fun to learn about how people used the sun to tell time. So, next time you see the sun shining, remember how special it is. The sun helped our ancestors know what time it was, and that's pretty amazing!

OK, let's see if you can tell time without a clock by building your own sundial.

1. Grab a paper plate, a ball of clay, and a straw.
2. Write the numbers 1-12 on your paper plate. A clock's face is visible to give you an idea of what your paper plate should look like.
3. Use a pencil to poke a hole through the center of the plate.
4. Push the straw through the hole and then into the clay ball.
5. Check the real-time on a clock.
6. Take your sundial out to a flat surface.
7. Rotate it until your sundial's time matches the real clock time.
8. Which direction is 12:00 pointing? North, South, East, West, or a



combination of them? _____

9. What do you think? Will the sundial's direction need to be changed as the seasons change? Yes or No.
10. Write down why you answered number 9 the way you did. _____
