

# Make Your Own Sundial

Before we had mobile phones and digital clocks people would use a sundial to tell the time. The sundial is the oldest known instrument for telling time, and up until the early 19th Century, was the main way used to tell time. Did you know that if the sundial is correctly placed, it can be a very accurate way of telling time, even down to the minute.

## Materials :

- Construction Paper** (a light colour is preferable) or a 9- to 12-inch paper plate
- Cardboard** (slightly larger than your paper)
- Bowl** or plate (for tracing)
- Pencil or Sharpie** (for tracing)
- Scissors**
- Pencil or Straight Stick** (to act as the gnomon)
- BlueTack**
- Four Small Stones or Clear Tape** (to anchor your sundial outdoors)
- Marker** (a dark colour is ideal)
- Compass** (optional)
- Ruler** (optional)



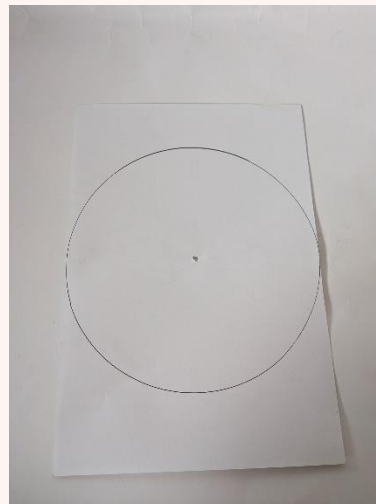
## Instructions

1. **Prepare Your Materials:** Gather everything you'll need for the project.

2. **Trace the Circle:** Place your bowl upside down on a piece of paper and trace around it to create a circle.



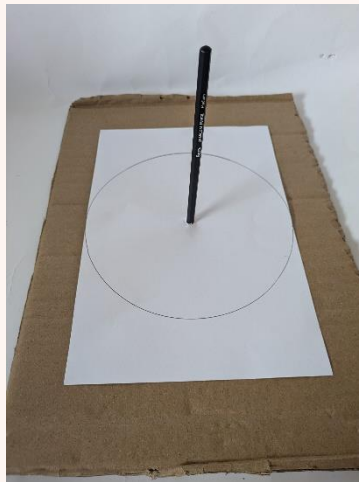
3. **Create a Centre Hole:** Make a small hole in the centre of the circle. You can estimate the centre or use a ruler for accuracy. The hole should be slightly smaller than the pencil or stick you'll be using for the gnomon.



4. **Attach the Gnomon:** Put a small amount of bluetack in the centre of a piece of cardboard. Insert the eraser end of the pencil (which will act as the gnomon) into the putty or clay. Ensure the pencil remains upright.



5. **Secure the Paper:** Once the pencil is stable, place the paper circle onto the cardboard, pressing it down to flatten the putty or clay. If your paper has any markings, make sure the blank side is facing up.



6. **Choose a Location:** Find a flat, sunny spot outside where the sun will shine for most of the day. Place your sundial on this spot. Stabilize Your Sundial: Keep your sundial from shifting by using small stones or clear tape to anchor it in place. It's crucial that the sundial stays stationary during the setup.



7. **Set an Alarm:** Check the time and set an alarm for a few minutes before the start of the next hour.
8. **Mark the Hours:** When the alarm goes off, go outside with a marker. At each hour, note where the shadow meets the edge of the circle and write down the time (whole hours only). Repeat this process until the sundial is either in the shade or the sun has set and there are no more shadows.



9. **Leave it Out (If Possible):** If rain isn't expected, you can leave your sundial in place and use it to tell time the following day.



### Success Tips

- **Check the Weather:** Make sure you have a sunny day for setting up your sundial. A couple of consecutive sunny days will allow you to use your sundial effectively once it's completed.
- **Prepare in Advance:** Set up your sundial the day before it's expected to be sunny so you can start marking the hours the following morning.