Sundials: Their Theory and Construction

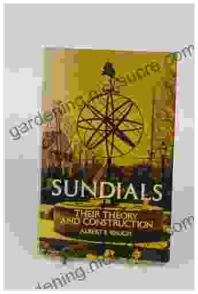
Sundials are one of the oldest and most fascinating ways to tell time. They have been used for centuries to measure the time of day, and they can still be found in use today. Sundials work by using the sun's rays to cast a shadow on a graduated scale. The position of the shadow indicates the time of day.

There are many different types of sundials, each with its own unique design. Some of the most common types of sundials include:

- **Horizontal sundials:** These sundials are placed on a flat surface, such as a tabletop or a patio. The graduated scale is marked on the surface of the sundial, and the shadow of the gnomon (the pointed object that casts the shadow) falls on the scale to indicate the time of day.
- **Vertical sundials:** These sundials are mounted on a vertical surface, such as a wall or a fence. The graduated scale is marked on the surface of the sundial, and the shadow of the gnomon falls on the scale to indicate the time of day.
- **Equatorial sundials:** These sundials are mounted on a polar axis, which is parallel to the Earth's axis of rotation. The graduated scale is marked on a circle that is parallel to the equator, and the shadow of the gnomon falls on the scale to indicate the time of day.

The theory of sundials is based on the principles of astronomy. The sun's rays travel in a straight line, and the Earth rotates on its axis once per day.

This means that the sun's rays will strike different parts of the Earth's surface at different times of day.



Sundials: Their Theory and Construction by Elizabeth Wenk

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The position of the sun in the sky is determined by two factors: the time of day and the observer's latitude. The time of day is measured by the angle of the sun above the horizon. The observer's latitude is measured by the angle between the horizon and the Earth's equator.

The angle of the sun above the horizon is greatest at noon, and it decreases as the day progresses. The angle of the sun above the horizon is also greater at higher latitudes than at lower latitudes.

The position of the shadow on a sundial is determined by the angle of the sun above the horizon and the observer's latitude. The shadow will be shortest at noon, and it will get longer as the day progresses. The shadow will also be shorter at higher latitudes than at lower latitudes.

Sundials are relatively easy to construct. The most important thing is to have a graduated scale that is accurate for your location. You can find

graduated scales online or in books on sundials.

Once you have a graduated scale, you need to attach it to a surface. The surface can be anything from a piece of wood to a wall. The surface should be flat and level.

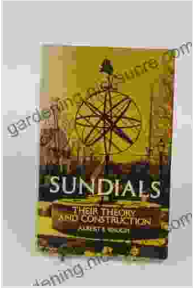
Once the graduated scale is attached to the surface, you need to add a gnomon. The gnomon is the pointed object that casts the shadow. The gnomon should be perpendicular to the graduated scale.

The length of the gnomon will vary depending on the latitude of your location. The longer the gnomon, the shorter the shadow will be.

Once the gnomon is attached to the graduated scale, your sundial is complete. You can now use it to tell time by observing the position of the shadow.

Sundials are a fascinating and educational way to tell time. They are easy to construct and can be used anywhere in the world. With a little bit of effort, you can build your own sundial and enjoy the satisfaction of telling time the old-fashioned way.

- How to Build a Sundial
- The Sundials of the World
- The National Association of Sundial Societies



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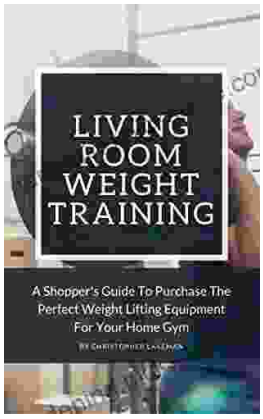

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