

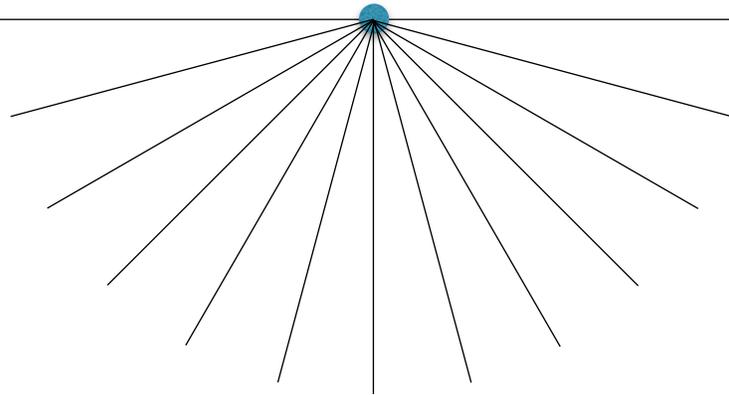
**To complete the sundial assignment:**

- \_\_Assemble the sundial.
- \_\_Label the hours on the sundial (including AM and PM)
- \_\_Add a motto (a quotation about time.)
- \_\_Point the stick north and read the time.
- \_\_Apply the three corrections to sundial time and find the standard time.
- \_\_Photograph from top,side, bottom and outdoors. Turn in.

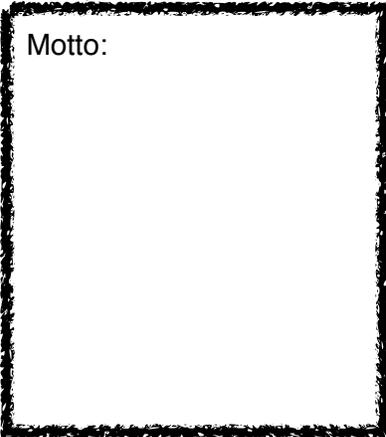
# The ACE Academy Sundial Template

For extra credit: build out of permanent materials, larger.

Push stick through this hole perpendicular to face

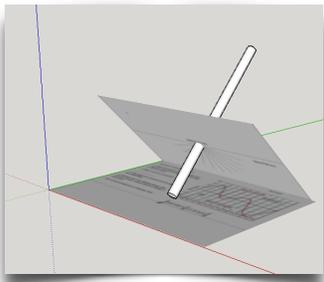


Spring/  
Summer face  
(top)

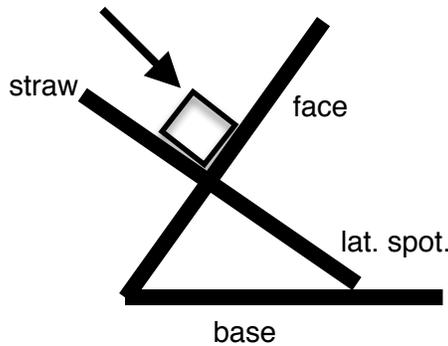


Fold here

perpendicular angle



Assembled it looks like this



**Assembly instructions.**

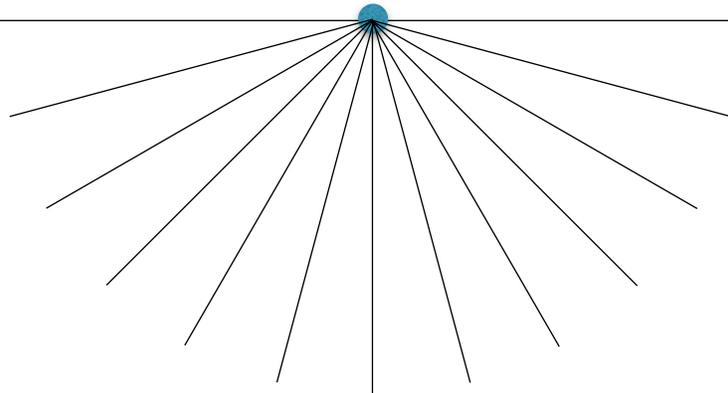
1. Glue the blank sides of the pages together so the hole and hour marks align.
2. Stick a straw through the face perpendicular to the top surface and attach to the base, at the point corresponding to your latitude.

This is the bottom of the sundial. When it is in use you can't see this part. The latitude of these cities are all approximately 38 N.

| City          | Longitude (West) | Longitude diff | Correction (minutes) |
|---------------|------------------|----------------|----------------------|
| Antioch       | 121.8058         | 1.8058         | 7.22                 |
| Pittsburg     | 121.8847         | 1.8847         | 7.54                 |
| Walnut Creek  | 122.0652         | 2.0652         | 8.26                 |
| Richmond      | 122.3477         | 2.3477         | 9.39                 |
| Discovery Bay | 121.6002         | 1.6002         | 6.40                 |

Your home town : Subtract your longitude from the longitude of the center of your time zone and multiply by 4. Pacific = 120 W, Mountain = 105 W, Central = 90 W and Eastern = 75 W

The stick must exit the face perpendicular to the face.



Winter/Fall  
face  
(bottom)

Directions for use: Point the stick north.

1. Read the time from the appropriate face. Top face in Summer and Spring, bottom face in Fall and Winter. Sundial time = \_\_\_\_\_

2. Apply Longitude Correction: add or subtract the appropriate number of minutes.

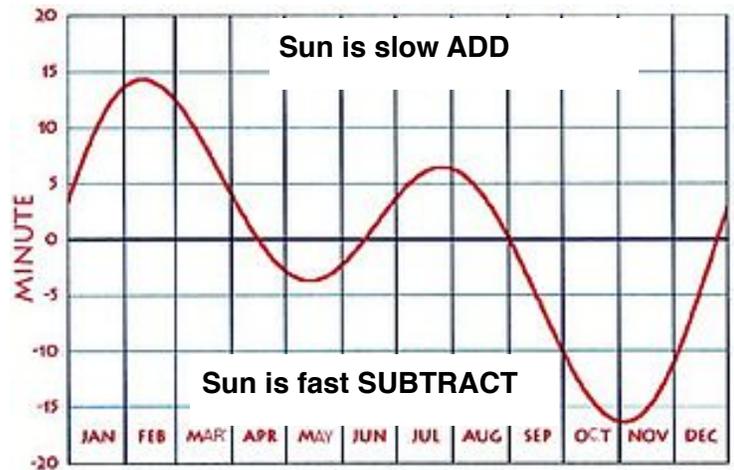
\_\_\_\_\_ (see table on bottom)

3. Use the equation of time graph to find the correction based on today's date and add it to the time. \_\_\_\_\_

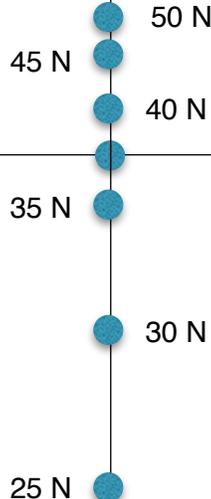
4. Add one hour if it is Daylight Saving Time (Second Sunday in March until first Sunday in November). \_\_\_\_\_ Check here if DST

This converts sundial time to Standard Time.

5. Sundial Time \_\_\_\_\_ + all above = Standard Time \_\_\_\_\_



The Equation of Time



Attach stick here for 38 North

Attach the base of the stick here depending on your latitude