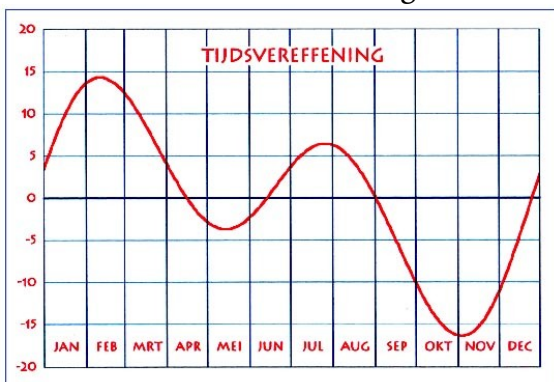


Notes for Parents

There are many types of sundial. The classic garden sundial has a fixed pointer called a gnomon. The edge of the gnomon follows the line from the celestial north pole to the celestial south pole. This is the line that the sun appears to revolve around. As the sun moves, it throws a shadow on the flat plate- and this shadow is used to tell the time. Now we know it is the earth that revolves round the earth, it wobbles a bit which causes long hot summer days and cold short winter days, and doesn't quite go in a circle, but this doesn't affect the basic idea.

The Broom Hill sundial works in a different way. It has a moveable pointer. You. It is called an analemmatic sundial. The earth wobbles on it's axis so in summer the days are longer and the sun is higher in the sky and the shadows are shorter. If you put a pole in the garden, you will see a shadow moving around the pole. At midday, that is one o'clock in summer the shadow from the sun in the south will fall due north. Each hour the shadow will have moved. It would be nice to think that it would fall in the same place day after day- but due to the earths wobble it doesn't. However, if you walk a little up or down the north line, it will work again. The Broom Hill dial is done this way. Marked on the ground is a line showing you where you need to stand on each day of the year.

The sundial tells the time as it sees it, and as the earth doesn't go in a perfect circle, days in summer are a few seconds longer than in spring. A clock evens this out and gives average time- or mean time- we have all heard of Greenwich mean time. The result is that the clock always tells the wrong time! 150 years ago , they spoke of 'Railway time and God's time. We can work out clock time using a formula or this little graph.



So, is the sundial accurate. Yes it is for Strood, but the clock is set on the time in Greenwich. Strood is half a degree east of Greenwich, it becomes noon here a full two minutes before Greenwich so our clocks are always 2 minutes slow.

More information: Google Sundial wikipedia

http://en.wikipedia.org/wiki/Sundial#Analemmatic_sundials

More information for teachers:

<http://www.sunclocks.com/index.htm>

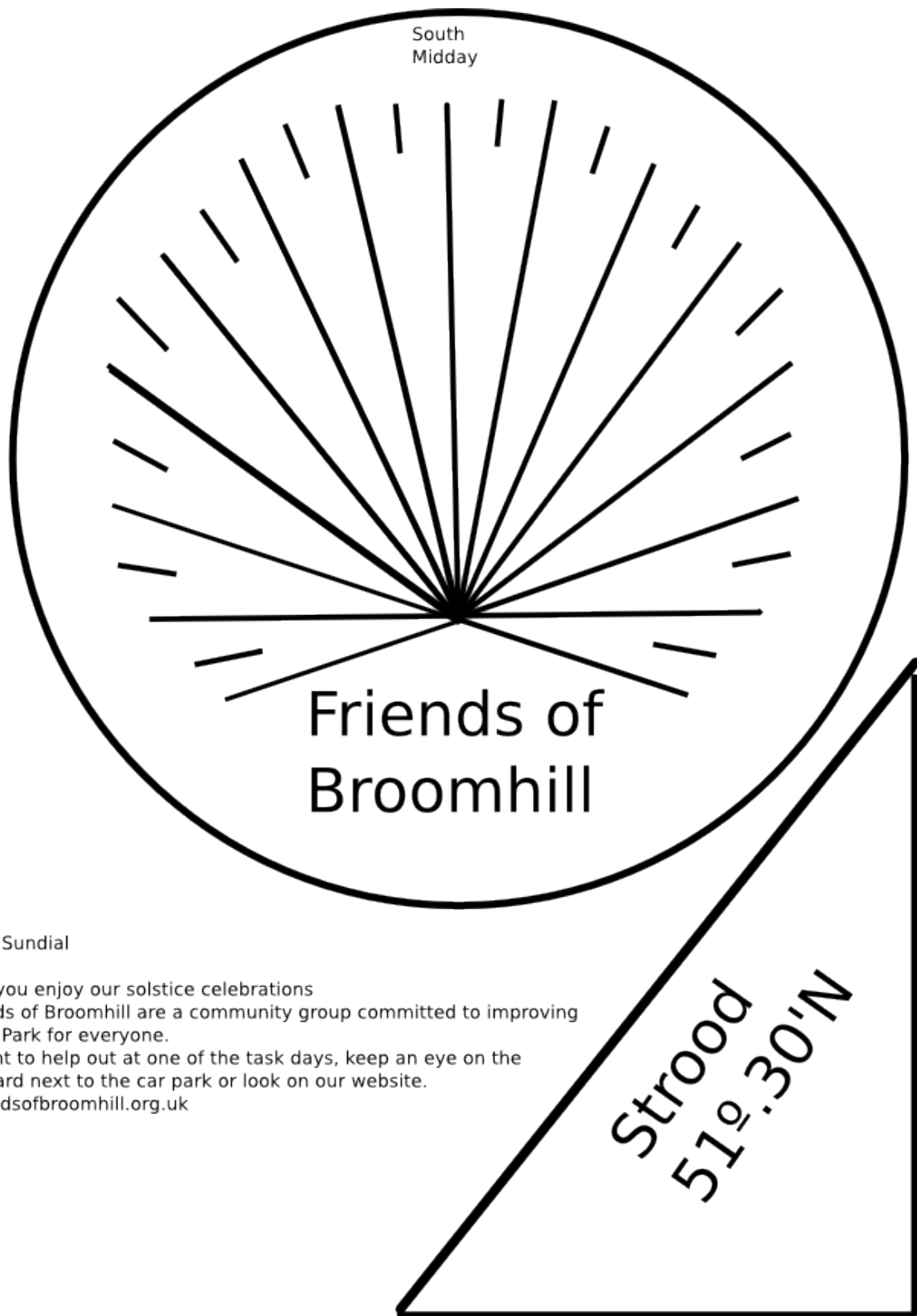
The kit used to produce the Broomhill dial can be used again free at any Strood school.

http://www.advanceassociates.com/WallDial/PWS_Images.html

Gives a starting point for an art project on painted wall dials, and the mathematics to construct them can be found.

http://www.mysundial.ca/tsp/tsp_index.html

This is the ultimate website about Sundials- written in clear English.



Broomhill Sundial

We hope you enjoy our solstice celebrations

The Friends of Broomhill are a community group committed to improving Broomhill Park for everyone.

If you want to help out at one of the task days, keep an eye on the notice board next to the car park or look on our website.

www.friendsofbroomhill.org.uk

To make a sundial in your own garden. Cut out the dial face, and the triangular gnomon. Be very careful to get the angles right. Stick it into the dial. Make sure it is upright. Write the times round the edge. In winter, 12 is at the top, in summer, one is at the top. Now put it in the garden, it must be exactly North South. If you haven't a compass, choose a sunny day, find the time from your mobile phone, and twist it until the shadow is in the right place.