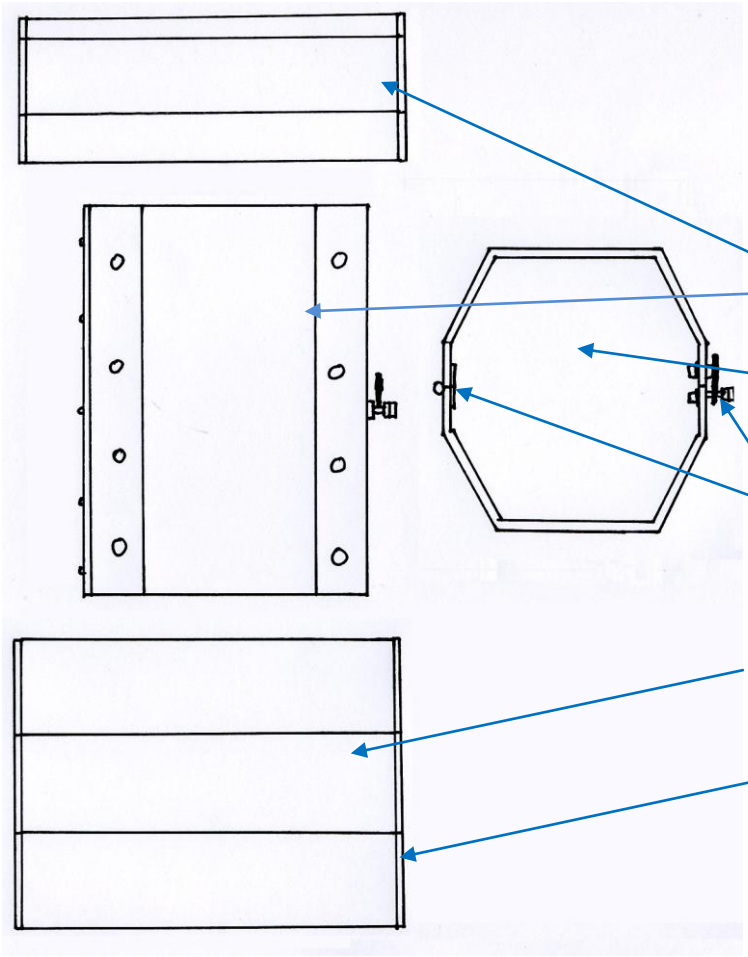
Making a Weather Station from plastic guttering

This weather station has been designed to be fairly cheap and easy to make. It also is low maintenance. However if finances permit, it is much better to have a real Stevenson Screen for your weather instruments.

Advantages:

- materials are easy to obtain
- does not need painting
- easy to mark, cut and drill
- will not rot
- is already white to reflect heat
- the air can circulate through the holes and the fact that there is no base
- looks smart
- easily mountable on a post, wall or fence

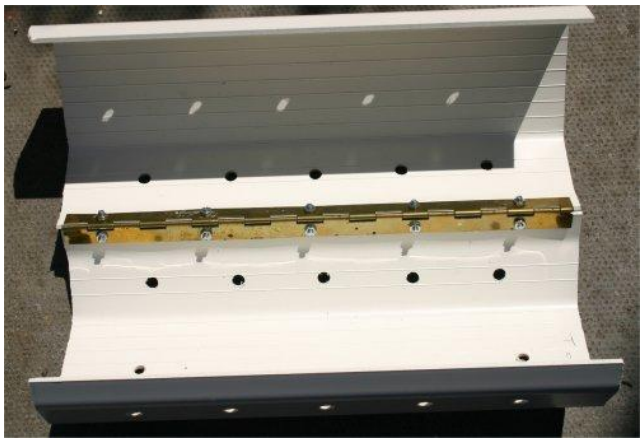
This weather station can be adapted for the size of the thermometer it is going to house. This example accommodated an average maximum and minimum thermometer. Check before you start that your thermometer will fit in the guttering. Then check the length you will need. Modify the instructions to suit.

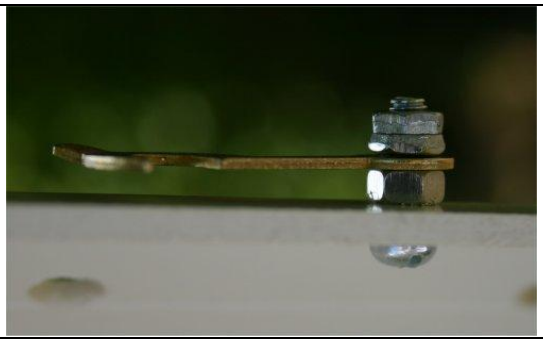


Be aware of safety at all times. Use tools appropriately. Refer to any relevant health and safety guidelines.

The diagram on the left may help to clarify what is being described in the instructions and shown in the photographs.

1 – Gather the tools you will need	2 - Guttering
	
This weather station only needs very basic tools. You need a couple of screws to put it up and one to hang the thermometer on. You may also use a sanding block to remove rough bits.	This white guttering can be bought at DIY outlets. Do not use any other colour than white as these would absorb the heat from the sun's rays. You may be able to obtain offcuts.
3 – Measure, mark and cut the parts	**4 – Cut the piano hinge**
	
The front and back are made from lengths 30cm long. Check what is needed for your thermometers. The roof section is 18cm long. Sand any rough corners.	Measure the piano hinge and cut it to the same length as the body of the weather station. You will need small nuts and bolts to fasten this on with. Check that they can pass through the holes in the hinge.
5 – Mark and drill holes	**6 – Attach hinge**
	
Mark and drill the ventilation holes. They are about 7mm across. You need to strike a balance between not letting the rain in, not creating wind chill, and allowing the air to circulate. Mark and drill smaller holes to attach the piano hinge with. You will also need two holes on the back for hanging the weather station on a post.	Use the bolts to attach the hinge to the back of the weather station (see the holes for mounting it). Put the nuts on the inside.

7 – Attach the front to the hinge	8 – Mount on the post
	
Attach the front to the hinge, completing the body of the Weather station.	Mount the body onto the post using the two holes. Mount the roof above it, making sure that it does not obstruct the door's opening. If possible mount the box so that the bulbs of the thermometer are 1.25m above the ground.
9 – Roof sides	**10 – Fastening**
	
Drill ventilation holes into the guttering ends. Slot them in as roof sides each end of the roof. These will stop the rain getting in but will allow ventilation.	Use nuts and bolts to fix the side hook onto the back section of the weather station. Put a spacer bolt behind the side hook so that it stands away from the guttering. Use another bolt and nuts to make the part for the side hook to hook over. (Also see next photograph.)

11 – Side hook detail	12 – Bolt detail
	
This shows how the side hook is fixed. The nut between the plastic and the hook puts it in the right position to hook over the bolt.	The bolt sticks out to the side so that the hook can fasten over it. There is one nut, then a space, then two more nuts. The hook goes round the space.

To see a video of this weather station in use look at the **Six's Maximum and Minimum Thermometers** page. (http://www.weatherforschools.me.uk/html/maxmin.html)