

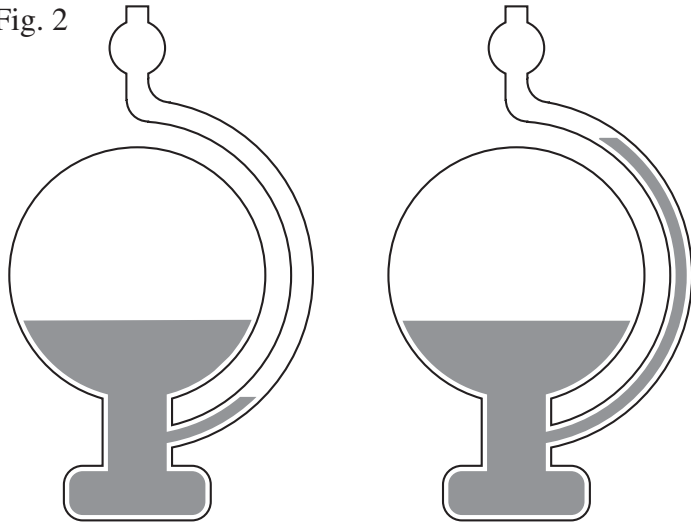
The Goethe Desktop Barometer

How does it work?

Changes in air pressure cause the level of the liquid in the barometer to move up and down, allowing you to observe changes in the weather:

- If the liquid in the spout is lower than the liquid in the globe, then fair weather is on the way.
- If the liquid in the spout is higher than the liquid in the globe, then bad weather or even a storm may be approaching, especially if the water nears the top of the spout.

Fig. 2



Low water in the spout indicates high air pressure, expect fair weather

High water in the spout indicates low air pressure, expect stormy weather

What has it to do with Goethe?

The German poet Johann Wolfgang von Goethe (1749 - 1832) did not invent it, but he had several water-based barometers and was a highly dedicated and certainly the most prominent user of these instruments. It is little known that he was not only a poet but also a highly respected and influential natural scientist.

This box includes:

- Globe style Goethe Desktop Barometer
- Syringe
- Tube for easy filling
- Blue food coloring

Additional items you will need:

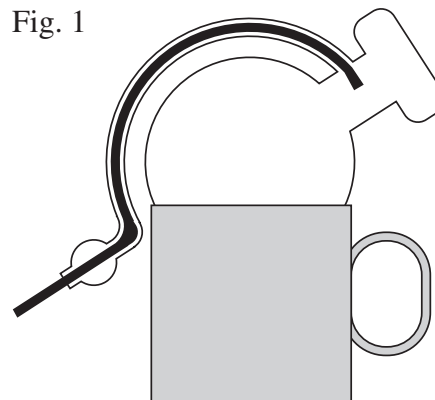
- Distilled water (recommended): about 100 ml or 1/2 cup.
- A friend or an object such as a coffee mug that can hold the globe while you fill it.

Filling your Goethe Barometer:

(Please read all directions before you begin. Adult supervision is recommended.)

1. Start with the tube disconnected from the syringe. Feed one end of the tube into the globe until it reaches the bottom of the base. Be sure the tube is positioned so the liquid will fill the globe part of the glass, not the spout (figure 1).
2. Your friend should hold the globe upside down during the filling process or you can rest it on a mug as shown. Fill the syringe, attach it to the tube, then gently and slowly squeeze the water into the globe. When the syringe is empty gently detach it from the tube so it can be refilled. Do not turn the globe upright until the filling process is finished.
3. Keep adding water to the globe until it is about half full (about 100 ml or 1/2 cup of water, about 5 syringes full).
4. Add the food coloring to the water in the globe using the tube and syringe. It's best to use the tube instead of dropping it directly into the spout to avoid colored spots on the dry part of the glass. Add as much food coloring as you like to make the color as light or as dark as you want it. After injecting the food coloring, clean the tube and syringe by removing the tube from the globe, filling the syringe with clean water, re-attaching it to the tube and pushing the water through the tube and into a sink.
5. After you place the barometer upright, the water should promptly move into the spout about 2,5 cm high. If it doesn't you can fill the syringe with air, then using the tube gently inject a small amount of air into the globe chamber while it is still standing upright. Be careful not to inject too much air, or too much of the water will be displaced into the spout.
6. Place the globe out of direct sunlight on a flat surface that won't be damaged if some water spills from the top when the air pressure is very low. Because the instrument is made to measure air pressure, changes caused by weather systems it may not work properly inside a well sealed building. Store the syringe and tube so you can use them to remove the water from the globe if necessary or add more water if some evaporates.
7. Keep an eye on the Goethe Barometer and note how the balance of the water in the globe chamber and spout changes with changes in the weather (see figure 2). You'll be an expert forecaster in no time!

Fig. 1



Ask a friend to hold the globe in this position while you fill it, or rest it on a mug as shown.

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