

How to Make a Simple Weather Barometer

Perfect for a [science project](#) or just for an at-home activity, making your own weather barometer is simple. All you need is a glass, a [straw](#) and a [balloon](#) plus tools you'll have at [home](#) or [school](#). The finished product will allow you to measure atmospheric pressure - one of the measurements that meteorologists use to make accurate forecasts.

Steps

- 1 Gather the things you'll need.** These consist of: Scissors, tape, a balloon, a jar, an elastic rubber band, a straw.
- 2 Blow up the balloon carefully and then let the air out of it again.** (This is to stretch it.)
- 3 Cut the balloon in half.** Discard the piece with the neck on it.
- 4 Take the remaining piece of the balloon and stretch it across the glass or jar.** Keep it stretched firmly across and seal it down with the rubber band, around the rim of the glass jar. To make an airtight seal, avoid gaps between the balloon and the glass.
- 5 Tape the straw onto the balloon lid; the straw should be sitting one quarter of a way on the lid, with the tape about 2 cm or 1 inch from the edge of the straw end that is sitting on the balloon lid.** The straw is your indicator "needle". Trim the straw if it's too long, but leave more length off the jar as what is attached to it.
- 6 Put the finished glass jar next to a wall and tape a piece of paper or card to the wall behind it.**
- 7 Mark the current position of the straw on the paper, and mark one above and below the mark, about the same length away, and label the high and low pressure.** Arrange the paper so there is room above and below the straw for you to make more marks when the straw moves.
- 8 Check the straw regularly and keep marking its location on the paper for a few days.** Add notes that tell you what the weather is like (for example, "rainy," "windy," or "sunny,") next to the mark.
 - Examine the paper after several days. Check the markings and the weather statements you've put next to them. What do you notice? Can you tell if and when the weather is about to change? See the "Tips" for the answers.

Community Q&A

Does the barometer need to be outside?



Yes, it is very important to leave the barometer outside so that it can record more effectively.

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What can a barometer indicate about the weather?



A barometer can only measure air pressure, giving an indication of the expected weather during the following 24 hours. Simply put, high pressure is likely to drive rain bearing clouds away, low pressure will likely let it in, leading to precipitation (rain).

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What is the reason for blowing up the balloon?



To stretch it out. If you just pull the two ends, you can rip it and you will have to get a new.

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How long does this barometer last?



It depends on where it is outside, and how much it gets knocked around.

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Tips

- As the straw moves up with higher air pressure, the days should be sunnier. As the straw lowers, the skies may be looking gray and you should expect cloudy or rainy weather on the way.
- When you fitted the balloon over the glass, you captured air under a certain pressure. The balloon now indicates changes in the atmospheric pressure, that is, the pressure of the air around you. Higher air pressure pushes the balloon into the jar and makes the straw go up. Conversely, the air inside the jar expands against lower pressure and will bulge the balloon, moving the straw down. The straw makes it easier to see the motions of the balloon.
- Also notice that the straw moves up or down just before a weather change since a change in weather typically coincides with a change in the atmospheric pressure.
- Try to take each reading at the same temperature, since air expands when heated and contracts when cooled, which would also move the straw-indicator.
- Check your results against the pressure from weather reports for your area. If you didn't do it correctly, keep trying until you get it right.
- Try this over a longer period of time if you're having a week of rain or a week of sunshine. Try to choose the seasons likely to bring the most changes during a short period of time in your part of the world.
- This is a delicate item. Place it away from foot traffic and daily activity.
- Don't leave the balloon in direct sunlight; this will wear it out and can affect the experiment.
- Make sure there are no gaps or air holes in the balloon during the experiment; this will affect the outcome.

Warnings

- Balloons are a suffocation hazard and should not be used by small children without adult supervision.

Things You'll Need

- A balloon or a rubber glove.
- Glass or jar (wide mouth/opening)
- Drinking straw or a pipe
- Rubber (elastic) band
- Tape
- Piece of paper
- Scissors and pencil

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