

Freddy the Frogcaster



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Hi Friends! Are you ready to start watching for weather clues? Hurray! Look to the sky, fellow frog—I mean—kidcasters!

Like me, and meteorologists everywhere, you'll need a couple scientific tools to make accurate weather forecasts. It's easy to get started. Just follow these instructions to make your very own weather tools at home.

Rain Gauge



No weather station is complete without a rain gauge to measure the amount of rain that falls from the sky.

Here's what you need to make your own:

- A cup to catch the rain
- A ruler to measure it

At the next sign of rain:

- Leave a clear cup out in an open area—away from trees or buildings.

After the rain stops,

- Use the ruler to carefully measure how much water is in the cup.

Make sure that you

- Record the results in your **Kidcaster Weather Journal**.

It's that simple!

To protect your rain gauge from wind, you can follow the instructions provided by my friends at the **Franklin Institute** at www.fi.edu/weather/todo/r-gauge.html.

Barometer



A barometer is a tool we meteorologists use to measure atmospheric pressure. That's a fancy way of saying we measure the weight of the air above us. When the atmospheric pressure is high, we can expect sunny, pleasant weather. When the atmospheric pressure is low, it's time to prepare for rain or snow. Barometers provide important "clues" meteorologists use to predict the weather.

All you need to make your own barometer is:

- A clear glass jar with a wide open mouth (like those your jelly or pickles come in)
- A balloon (or piece of plastic wrap)
- Scissors
- A rubber band
- A drinking straw
- A piece of paper
- A crayon or magic marker
- Tape

To get started:

- Stretch out the balloon by blowing it up and slowly letting the air out. Then cut off the neck part of the balloon.
- Stretch the rest of the balloon over the top of a clear glass jar. If you do not have a balloon, use a piece of plastic wrap.
- Use the rubber band to secure the balloon around the rim of the jar. Be sure to completely cover the mouth of the jar and seal it up nice and tight.

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Next:

- Make an “indicator needle” or “pointer” by taping the straw on top of the balloon cover. Lay the straw flat right in the middle of the jar with the long end of the straw going over the edge of the jar.

Finally:

- Put the jar near a wall and tape the piece of paper behind it with half the paper above the straw and half below it.
- Use a crayon or marker to draw a line on the card showing the current position of the straw. As the air pressure rises or falls, the balloon will cause the end of the straw to go up or down.
- High pressure will make the plastic cave in and the straw go up. High pressure means the weather is clear.
- Low pressure will make the plastic puff up and the straw go down which means a storm is on the way.
- Observe the weather and impress your friends when your predictions are proven correct!

You can find more detailed instructions at **Bill Nye, the Science Guy's website** at <http://www.billnye.com/for-kids-teachers/home-demo-details>. Look under the “Earth Science” column and click on “Barometer in a Bottle.”

Just a “froggy” reminder:

Check your barometer when you wake up in the morning and again right before you go to bed. Use your **Kidcaster Weather Journal** to record the results.

Weather Vane



A weather vane shows the direction of the wind—whether it's blowing from the north, south, east, or west. The way the wind blows gives us clues about the weather. In the United States, when wind blows in from the north, also called northerly winds, it brings cold weather. When it blows in from the south, called southerly winds, it brings warm weather. Easterly winds bring precipitation (rain, snow, or sleet) while westerly winds clear things up.

Here's what you need to make your weather vane:

- Two heavy paper plates
- A small pile of small rocks or rock salt
- Masking tape or glue
- A magic marker
- A new pencil (one that hasn't been sharpened)
- Construction paper
- A drinking straw
- A straight pin

First of all:

- Fill one heavy plate with small rocks or rock salt. Turn another heavy paper plate upside down, place it on top of the first plate and tape or glue the edges together.

Next:

- Use a crayon or marker to divide the top plate into four equal parts. Write the word "North" opposite the word "South." Write the word "East" opposite the word "West." Use a compass or ask an adult to help you get the directions in the correct spaces.

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Then:

- Stick a new pencil into the center of the plate, with the eraser side up.
- Cut a small triangle and rectangle out of the construction paper to make the ends of an arrow.
- Use tape to attach the paper arrows to either end of the drinking straw.
- Push a straight pin through the middle of the straw and into the pencil eraser.

Set up:

- The wind vane in a safe place outside with the “North” marking facing north. Once again, a compass or adult can help with this step.

Now:

- You are ready to start watching the movement for signs of wind direction.

Keep track:

Of your weather “clues” in your **Kidcaster Weather Journal**.

My science-loving friend, **Steve Spangler**, has directions for another type of weather vane that you might like to try at his website at www.stevespanglerscience.com/lab/experiments/weather-vane.

Psssttt...

If you discover that you love watching the weather like I do, you may want to save up some money and buy more weather tools. Two of my favorite places to order weather tools online are:

The Steve Spangler Science store at www.stevespanglerscience.com/products/weather.html and **SmartLab Toys** at www.smartlabtoys.com/you-track-it-weather-lab.html

Happy forecasting!
Your weather-loving friend,
Freddy