



Outdoor Classroom Project Plan: Materials List & Budget for Weather Station

The weather station in your outdoor classroom includes various weather instruments that you can use to measure, record and track weather conditions over time.

- **Thermometer** measures the air temperature.
- **Anemometer** (*pictured right*) measures wind speed.
- **Hygrometer** measures humidity, or the amount of water vapor in the air.
- **Rain gauge** measures the amount of rain that has fallen over a specific time period.
- **Barometer** measures air pressure in the atmosphere, also called barometric pressure.
- **Wind sock** (*pictured right*) is a cone-shaped tube of fabric, which resembles a giant sock, attached to pole that rotates. It helps us determine wind direction and relative wind speed.
- **Cardinal directions sign**, for which we have a separate materials list and estimated budget, includes directional signs pointing North, South, East, and West attached to a 4”x4” post. Use the cardinal directions sign in your outdoor classroom along with your wind sock to determine the direction the wind is blowing.



❖ Location Suggestions for the Weather Station:

- Next to the Cardinal Directions Sign
- In the middle/ open area of the outdoor classroom—do not put it next to a tree or building that might block the wind or shade the thermometer

❖ Example Weather Stations & Educational Sign:



Welcome to our Weather Station

We can study our local weather patterns, examine seasonal weather conditions, and observe how the weather impacts our environment when we collect and analyze weather data (information).

Use weather instruments to collect data:

- Anemometer** – Measures the wind speed
- Barometer**–Measures the air pressure
- Hygrometer**–Measures the moisture
- Thermometer** – Measures the temperature

Use the **Cardinal Directions Sign** to determine which direction is north, south, east and west, and where our school is located in our community!

●

Scan this QR Code to learn more about weather!
Enjoy nature's beauty!
Protect it from litter and vandalism!





OC Project Plan: Example Weather Station Materials List & Budget

❖ Estimated Cost:

Example Weather Station (*analog only*): \$335

❖ Materials & Supplies with Estimated Budget:

Example Analog Weather Station				
<p>A weather station should include an analog thermometer (for air temperature) and analog rain gauge (for rain fall) so that the students can practice reading a thermometer and reading the measurements in a rain gauge, a weather sock and cardinal directions sign so that students can determine the direction of the wind, and an anemometer (for wind speed), a hygrometer (for humidity), and barometer (for air pressure).</p> <p>A materials list & budget for a cardinal directions sign can be found on the AWF website.</p>				
Station	Materials & Supplies	Estimated Cost	Example Source	Final Cost
Weather	Large (~6.5") Rain Gauge (this one is easy to read, and it is easy to empty and then put back after the students have recorded their measurements) @~\$24.95 ea	\$25	https://www.weathershack.com/product/conant-65-rain-gauge.html	
Weather	Large Analog Thermometer (easy to read and should be easy to mount on your weather station post) @~\$3.98 ea	\$5	Lowe's Item# 396644	
Weather	Outdoor Analog Hygrometer (to measure humidity – this one is a combo with a thermometer, but we suggest you still include a traditional analog thermometer so that students can learn how to read it.) @~\$9.78 ea	\$10	Lowe's Item# 2737940	
Weather	Outdoor Analog Barometer (this instrument can be used to help predict weather events hours in a advance because it measures the air pressure) @~\$31.99 ea	\$35	https://www.amazon.com/AMTA-ST-Thermometer-Hygrometer-Barometric-Temperature/dp/B07JDLVMV6/ref=sr_1_2_sspa?keywords=outdoor+barometer&qid=1691536413&sr=8-2-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1	
Weather	Anemometer (measures wind speed. This one is included in a solar powered digital weather station.) @~\$113.98 ea	\$115	https://www.amazon.com/AcuRite-Wireless-Weather-Station-Sensor/dp/B00N1XCA9M/?th=1	
Weather	Waterproof Connection Box 11 x 4 x 3 inches (to store and protect anemometer receiver) @~\$16.99 ea	\$20	https://www.amazon.com/Waterproof-Connection-Restmoo-Weatherproof-Decorations/dp/B07XL4FG71/	
Weather	Wind Sock @~\$11.99 ea	\$10	https://www.amazon.com/Qishi-Windsocks-Rip-Stop-Measurement-Reflective/dp/B01L138HY0/	
Weather	(1) Severe Weather 4-in x 8-ft #2 Ground Contact Wood Pressure Treated Lumber (to attach instruments to) @~\$10.78 ea	\$10	Lowe's Item# 552328	
Weather	(1) Box of (50) 3.5" #10 exterior deck screws (to attach the weather station instruments; not all will be used on the weather station so save remaining for use on Cardinal Directions sign) @~\$9.98 ea	\$10	Lowe's Item# 9479	





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❖ Materials & Supplies with Estimated Budget (cont.)

Weather	(1) 50 lb bags of Quikrete Fast Setting Concrete Mix @~\$6.71 ea	\$5	Lowe's Item# 10437	
Weather	(1) 6 ft. U-Post for Fence (for educational sign) @~\$10.69 ea	\$10	Lowe's Item #493054	
Weather	(1) Hillman 1/4-in x 1-1/2-in Zinc-Plated Coarse Thread Hex Bolt (2-Count) @~\$.0.88 ea	\$5 total	Lowe's Item# 137634	
Weather	(2) Hillman 1/4-in x 20 Zinc-Plated Steel Hex Nut @~\$0.10 ea		Lowe's Item# 63301	
Weather	(2) Hillman 1/4-in Zinc-plated Standard Flat Washer @~\$0.15 ea		Lowe's Item# 63306	
Weather	Educational Sign (to explain weather station) @~\$75 ea	\$75	Ask OC Consultant about https://www.alabamawildlife.org/oc-signs/	
Total Estimated Cost: \$335				

