 **Outdoor Classroom Project Plan:**

**Materials List & Budget for**

**Weather Station**

[](http://www.alabamawildlife.org/uploadedFiles/Image/OC_anemometer.jpg)The weather station in your outdoor classroom includes various weather instruments that you can use to measure, record and track weather conditions over time.

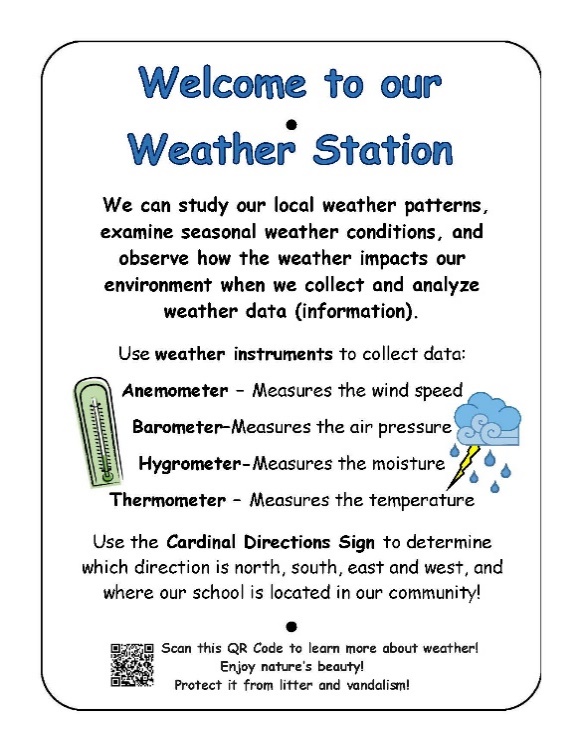
* **Thermometer** measures the air temperature.

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* **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.

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* [](http://www.alabamawildlife.org/uploadedFiles/Image/image-20201005170357-1.jpeg)**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:**

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**OC Project Plan: Example Weather Station Materials List & Budget**

* **Estimated Cost:**
* Example Weather Station *(analog only)*: $335
* **Materials & Supplies with Estimated Budget:**

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| **Example Analog Weather Station**  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).  A materials list & budget for a cardinal directions sign can be found on the AWF website. | | | | |
| **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/AMTAST-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-Restmo-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 |  |

**OC Project Plan: Example Weather Station Materials List & Budget**

* **Materials & Supplies with Estimated Budget (cont.)**

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| 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** | | | | |