Functionality

Communicates overr SPI- based protocol

analog interface for power supply

2 serial sensors

Have a way to filter air

Measures rainfall

Pressure sensor

Measures Radiation Intensity

Includes a soil sensor

SD Card to Store Data

metal rod solar panel is attached to

Detects wind direction

LCD Display to show current readings

Monitors water pollution

Have a speaker play a sound when it turns on

detects water quality

Detects air pollution

Measures pressure of water and other liquids

Detects wind Speed

Windmill to measure wind speed

Senses Atmospheric Pressure

communicates over I2c

Handles to easily transport

Utilize bluetooth

Weight to be somwhere between 1 pound and 5 pounds

Monitors various gases

Utilizes a 3-cup wind speed sensor

Utilize WiFi

Utilizes a wind vane wind direction sensor

actuator to allow movement in tools

Senses Temperature

Multiple Temperature sensors

Motor moves solar panel towards the sun

Mister to modulate humidity

Fans to regulate tempature

Uses CO2 sensors

Sensors to measure air quality

Senses Humidity

Misc. Ideas

anemometer cups are made out of recycled materials such as dixie cups

suction cup to ensure stability when placed on a surface outside

consist of bi-metal coil thermometer

consist of digital rain gagfe

includes a tube thermometer

consist of anemometer to measure wind speed

Digital Interface for power supply

+ sign Shape

consist of a switching Voltage regulator

includes a digital accelerometer

Needs to be handheld

Includes Curiosity Nano for the microcontroller

includes multiple languages for different users

Philip screws to enclose batteries

Microphone

Includes a pyranometer to measure solar radiation

includes barometer to measure atmospheric pressure

Includes a timer

rubberr body to protect against static electricty

Includes an inductive senor

Code in C

Use MPLab

includes a hygrometer

lightning detector dauge to measure frequency and distance

consist of analog Rain Gauge

Ball Bearings to allow 360 degree movement

solar panel powered battery

charge using USB-C

identifier switch on sensor array

includes a proximity sensor

code in Python

Electrical and Motors

USB Charging Port

Capacitors to store data if surge occurs

Power Kill Switch

Display for battery level

Fan Controllers

Stepper Motor

rechargeable battery

integrated charging port

regenerative motor for charging battery

Solar Power for entire robot

integrated internal battery

Brushless DC Motor

Lithium Battery Supply

AA Batteries

Rechargeable AAA Batteries

Wall Charger for Testing

Solar Panels for secondary power supply

1.5 to 3V Motors

Surge Protector

Low Voltage Control Cut Off

Physical Design

Rubber Lining on Hard Edges

Spherical Shape

Hardware stored in 3D printed Housing

3D Printed Robot shell

Zip Ties for clean wire pathing

All components fully enclosed

Cross legged design

Waterproofing

Metal Shell for Robot