

Water Wise Challenge Scoring Rubric

Category	4 - Exemplary	3 - Proficient	2 - Developing	1 - Beginning
Understanding of Weather & Agriculture	Clearly explains how specific atmospheric variables (rainfall, wind speed, air pressure, temperature, humidity) influence on-farm decisions (e.g., irrigation timing, planting, field operations). Demonstrates strong grasp of meteorology concepts and agricultural context.	Explains a weather variable and its connection to at least one farm decision with generally accurate reasoning.	Shows partial or uneven understanding of weather-to-farm connections; includes inaccuracies or vague links.	Minimal or inaccurate explanation; little to no real-world agricultural relevance.
Instrument Design & Build	Instrument is thoughtfully engineered, durable, and safely constructed; design clearly measures the intended variable with an appropriate scale. Creative, efficient material use and weatherproofing evident.	Instrument measures the intended variable with mostly accurate structure and scale; build quality is adequate with minor issues.	Instrument is incomplete, fragile, or includes unclear/misleading measurement features; scale/placement not well considered.	Instrument is missing or non-functional.
Data Collection and Analysis	Multiple trials over time are recorded in an organized log. Graphs/tables are accurate and labeled (units, dates, titles). Compares results to a trusted source (e.g., local station/app) and documents agreement/discrepancy.	Data are recorded with at least one graph or table; labels mostly present. Comparison to a trusted source attempted.	Limited data or irregular logging; visuals incomplete or hard to read; little or no external comparison.	Minimal/no data; no visuals; no validation steps.
Scientific Explanation	Makes a clear Claim, backs it with specific Evidence (data, graphs, validation), and uses accurate Reasoning grounded in meteorology principles to connect instrument behavior to weather outcomes and farm use.	Includes claim, some evidence, and generally sound reasoning with minor gaps.	Claim and/or evidence present but reasoning is weak, generic, or partially inaccurate.	Lacks a coherent explanation or scientific reasoning.

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Iteration and Improvement	Shows a deliberate test-refine cycle: identifies error sources (e.g., splash-in/out, leveling, exposure), implements targeted changes, and documents how revisions improved precision/consistency.	Shows at least one revision based on test results with a reasonable explanation.	Revision is superficial or not clearly tied to results.	No revisions made or revisions were not explained.
Application to Agriculture	Provides a specific, feasible recommendation a farmer could act on (e.g., "Delay planting by 24 hours due to falling pressure and high winds" or "Irrigate 0.5 in. tomorrow based on 4-day rain deficit"). Notes practicality and stewardship (e.g., conserving water, protecting seedlings).	Connects findings to an agricultural practice with a clear, general recommendation.	Vague or unrealistic agricultural connection; recommendation unclear.	No real-world application offered.
Communication & Presentation	Product is clear, well-organized, and visually effective; includes labeled visuals, concise narrative, and correct units. Team answers questions with data-based responses.	Organization is generally clear; visuals mostly labeled; minor clarity/accuracy issues.	Organization or visuals hinder understanding; missing labels/units or unclear audience focus.	Disorganized, difficult to follow, or missing key components.
Water Wise Challenge Overall Score				