Inspired by Salah El Sadi
and Blue Filter collaborators

A Question Worth Testing

Turn an environmental question into an evidence-based recommendation

Inspired by Salah El Sadi and the collaborative research behind Blue Filter. This suggested classroom adaptation uses published data. It is not a verified Blue Filter lesson, a water-treatment procedure or an endorsement.

THE OPPORTUNITY

A local environmental concern can give students a reason to investigate carefully. Learners frame a question, interpret a published dataset, challenge an explanation and recommend a next step. Success means showing what the evidence supports and what remains unknown.

PLAN A MANAGEABLE START

Suggested fit: Grades 7-12; science, geography or data literacy. **Estimate:** 2-3 class periods. **Cost:** $0 with existing supplies and printed data. **Prepare:** Select a short, credible public environmental dataset with a named source, date, location, units and methods. Provide a graph, its data table, paper and optional calculators or spreadsheets.

Keep the question within the data: For example, how did reported water use change across the months shown? Use published information only. Do not collect unknown water, drink experimental water or claim that a classroom activity establishes drinking-water safety.

FROM QUESTION TO RESPONSIBLE RECOMMENDATION

1. Find a question worth pursuing. Invite students to notice a local concern. Narrow it to a question the supplied data can address. Name what the dataset cannot tell them.

2. Read the evidence together. Model one graph interpretation. Check units, dates, scale and missing values. Students record a pattern with the exact values that support it.

3. Compare explanations. Teams propose an interpretation and an alternative. Separate observation from inference. Identify additional information needed to choose between explanations.

4. Invite a peer challenge. Exchange claims. Ask: Where is the evidence? Does the comparison fit the data? Revise an overstatement or clarify a limitation.

5. Recommend a next step. Create a short written, visual or spoken recommendation. Include a claim, cited evidence, uncertainty, an unanswered question and contributor credits.

ACCESS, ASSESSMENT AND REFLECTION

Offer high-contrast graphs, text tables, vocabulary support and flexible roles. For grades 7-8, provide one guided comparison; for grades 9-12, add source or method comparisons. Assess accurate reading, evidence traceability, limitations and revision. Ask: What did we change after someone questioned our interpretation?

Three prompts for thoughtful adaptation

Optional educator planning support. No claim is made that Salah used AI. Use approved tools, supply the source material and remove student identifiers.

1 Plan an inquiry grounded in evidence

For [age group/subject], [available time] and this published dataset [paste data and source], plan a guided environmental inquiry. Include a question the data can answer, a modeled graph reading, student decisions, peer critique and a recommendation with limitations. Offer paper and accessible response options. Use only supplied facts; flag missing information.

Teacher check: Verify the source, units and question. Do not turn this into a water-treatment experiment.

2 Build materials that make reasoning visible

Using [dataset and source], create a claim-evidence-limitations worksheet for [age group]. Include source/date/units, an observation, an inference, an alternative explanation and a revision after peer feedback. Add graph-reading scaffolds and a simple assessment checklist. Leave unknowns blank; do not invent values, trends or results.

Teacher check: Check every value and graph label against the source. Provide the original data table.

3 Reflect and improve the reasoning

Review these de-identified student responses [paste work] alongside [source data]. Distinguish observations, supported inferences and unsupported claims. Suggest questions that help students explain relevance, acknowledge uncertainty and improve their recommendation. Do not invent outcomes or rewrite the work as if students produced your revisions.

Teacher check: Use professional judgment. Retain students' ownership and verify suggested corrections.

Credit, sources and the limits of evidence

Credit Salah, students and collaborators without merging their roles. IUG (2019) identifies Ahmed Gendia as an early university research partner. Springer (2023) lists Salah, Hassan Tammous and Khamis Al Mahllawi as research coauthors. These records do not establish classroom learning outcomes.

Research connection: Lazonder and Harmsen (2016) synthesized 72 studies of guided inquiry. Their findings inform the modeling and scaffolds proposed here; they do not evaluate Salah or Blue Filter. This guide makes no claims about treatment efficacy, potable water or public-health outcomes.