Bring Field Science Home

Connect a real conservation question with evidence students can investigate and explain.

Learning goal and context

Learners will use observations and a credible source to explain a local environmental question, revise a model, and identify an unanswered question. Inspired by Chris Monsour at Columbian High School in Tiffin, Ohio, who connects his scientific field experiences with classroom learning. This is a Champions of Learning adaptation, not his verified lesson sequence or an endorsed resource.

Suggested audience: Grades 6-12 science. **Estimated time:** Two 45-minute lessons, plus 30-60 minutes of preparation. **Estimated cost:** No added cost with existing supplies and public data; printing or travel may add costs.

Prepare a question and evidence

Choose a manageable question, such as how shade relates to surface temperature or how habitat features might support local wildlife. Gather paper, pencils, an observation sheet, and one reliable local dataset or field report. A local scientist or conservation educator can suggest a useful question; participation is optional. Check source dates, units, permissions, access needs, and what the evidence can actually answer.

Try it in four steps

1. Meet the question (10 minutes). Share a field report or local observation. Invite students to choose a related question and sketch an initial explanation. Distinguish an observation from a prediction.

2. Investigate evidence (30 minutes). Teams use a safe observation area or teacher-provided photographs and data. Record conditions, patterns, and limits. Give students choices in roles and what comparison to investigate within the available evidence.

3. Build and revise (30 minutes). Create a labeled diagram or simple model. Connect at least two features to evidence. Exchange questions with another team, then revise one part or explain why it stays unchanged.

4. Share and reflect (20 minutes). Present a claim, supporting evidence, and one uncertainty to classmates or an invited partner. Compare initial and final explanations. Ask what changed, what evidence prompted it, and what students would investigate next.

Access, assessment, and care

Offer indoor data, printed photographs, large print, verbal descriptions, and written, oral, or visual responses. Use paper diagrams instead of devices. Assess evidence use, scientific accuracy, and revision rather than speaking frequency. Younger learners can compare two images; advanced learners can examine sampling limits. Follow school fieldwork procedures, avoid water entry or wildlife handling, and do not publish student identities or sensitive species locations.

Three AI Prompts for Teachers

Optional planning support. Replace bracketed fields. These prompts do not imply that Chris uses AI.

1 | Plan an accessible investigation

Plan two [minutes]-minute science lessons for [grade/course] about [local environmental question]. The goal is [learning goal]. Use these verified sources and available resources: [sources, data, supplies]. Give students a meaningful choice of comparison or question. Include an initial model, evidence investigation, revision, and explanation. Provide an indoor, paper-only route and supports for [access needs]. Separate known facts from suggested activities. Do not invent data, partners, or fieldwork permissions.

Teacher check: Verify scientific accuracy, feasibility, access, timing, and school safety requirements. Keep the investigation within the evidence available.

2 | Create evidence-focused materials

Using only [verified dataset or permitted source excerpts with citations], create a one-page investigation sheet for [grade]. Include the question, source and date, units where relevant, space for observations, a labeled model, and prompts for a claim, evidence, uncertainty, and revision. Add a teacher guide with defensible interpretations and common misunderstandings. Preserve the data exactly. Flag missing information rather than inventing observations or outcomes.

Teacher check: Compare every value and explanation with the original source. Check readability and give students room to record alternative supported interpretations.

3 | Reflect and improve

Our goal was [goal]. Here are anonymous class-level patterns from initial and revised models and exit responses: [summary]. Identify evidence of learning and remaining uncertainty. Suggest two changes to the next investigation and one follow-up question for students. Distinguish observations from possible explanations. Do not infer student traits, equate confidence with understanding, or claim the activity caused improvement.

Teacher check: Judge suggestions against actual student work. Use only a school-approved tool and anonymous summaries, never identifiable student information.

Credits and further reading

Inspired by Chris Monsour. Read his HHMI BioInteractive profile and the Teacher at Sea Alumni Association account of his experience.

Aleitha Faye Grunst, Montana State University (August 2026): a graduate study of middle school community conservation projects reported gains in concept-map performance and interest in further participation. It did not evaluate Chris or this adaptation; its classroom findings do not establish the same outcomes elsewhere.