Strategies to Promote Inquiry Skills

Encourage Curiosity and Observation Skills

- Provide time and/or materials for open-ended exploring
- Use tools (lens, frames, plots/sections, stations) to focus/facilitate observation
- Use board, posters or journals to record "I Notice, I Wonder"
- Post an ongoing "I Wonder" board

Build Questioning Skills

- Use question strips to organize ideas into categories
- Sort questions into "Research, Observe over time, Investigate at school"
- Ask students to choose " juicy questions" they want to answer *(Everyone's interested, no one knows the answer, we think we can answer at school)*

Prompt Experiment Design Skills

- Ask: What do we want to know?   What do we think is happening? *to focus on a testable idea*
- Ask: How can we find out whether our idea is right?   Is it a fair test? What materials/time do we need? *to clarify experiment design*
- Ask: What will we change to test this idea? What will stay the same? *to help identify/isolate variables*

Promote Perseverance, Inventiveness, and Data Collection Skills

- Don't help too soon--let students try to figure out problems with experiments on their own
- Provide needed skills when need is demonstrated with drop-in mini-lessons
- Encourage multiple test runs and cross-group data comparisons
- Slowly move from providing data worksheets to helping students design their own data-collection tools

Foster Respect for Data, Interpretation, and Communication Skills

- Help students sort data interpretations into "What I know from my experiment" and "Ideas to be tested/what might be happening"
- Underscore importance of data with questions like: "How do you know?" "Why do you think that's true?" "How does your data support your idea?"
- Help students pull out conclusions with a "big idea review"
- Encourage open discussion of unexpected results and possible theories
- Build students' reporting skills with journals, progressing from general observations to records of experimental procedures, data and conclusions