

# **Assessing Inquiry in *High School Science***

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- Look for powerpoints and SEPUP News under News section on home page

# Foundations in assessment

- Assessment can be loosely defined as the search to determine how well students are learning
- *Formative* assessments are used to inform instruction and guide student learning
- *Summative* assessments are used to evaluate students with grades, placement, promotion, or other types of accountability

# The SEPUP Assessment System

- The SEPUP assessment system was developed with UC Berkeley's Graduate School of Education
- It is embedded within student and teacher materials but only identified in the Teacher's Guide
- It has appeared in numerous journal articles, meeting papers, and in national publications on assessment



# Assessment Triangle

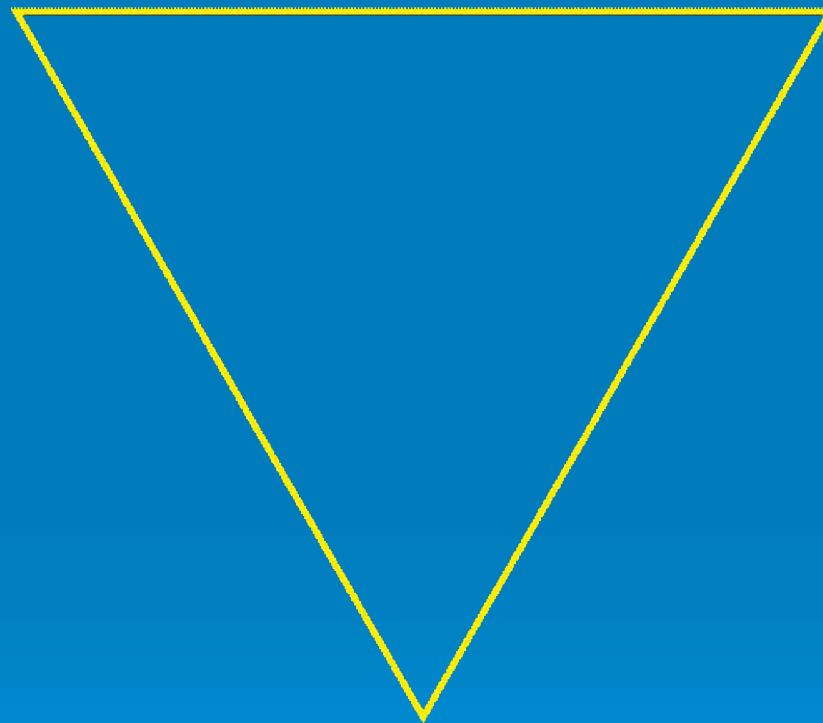
(from *Knowing What Students Know*, NRC, 2001)

Observation

(Task)

Interpretation

(Scoring Rubrics,  
Levels)



Cognition

(Knowing)

# Assessing Inquiry in Science

- Two variables with associated scoring guides, or rubrics:
  - Designing Investigations
  - Analyzing Data

# Scoring

- 4 Above and beyond
- 3 Complete and correct
- 2 Almost there
- 1 On your way
- 0 No response

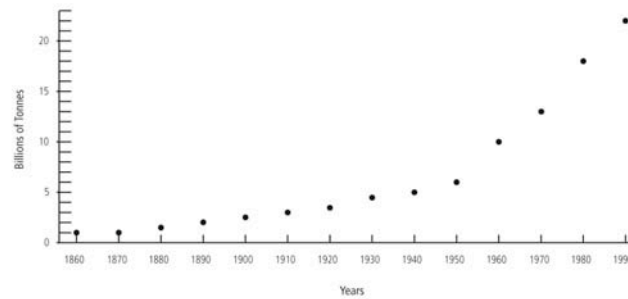
# Preparing for the Assessment

- Do Activity
- Score student work samples with the Analyzing Data Scoring Guide
- Moderate Student Work Samples

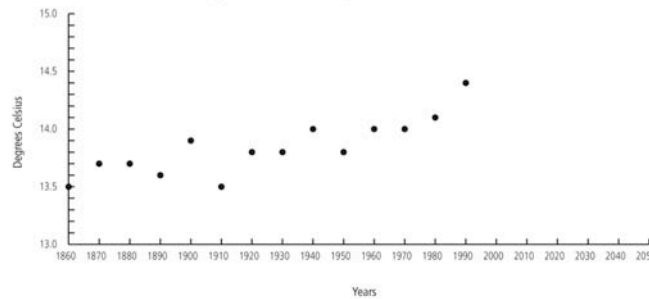
# Transparency 6.4

## Comparing Trends of Surface Temperature and Carbon Dioxide Emissions

### Worldwide CO<sub>2</sub> Emissions From Fuel Combustion

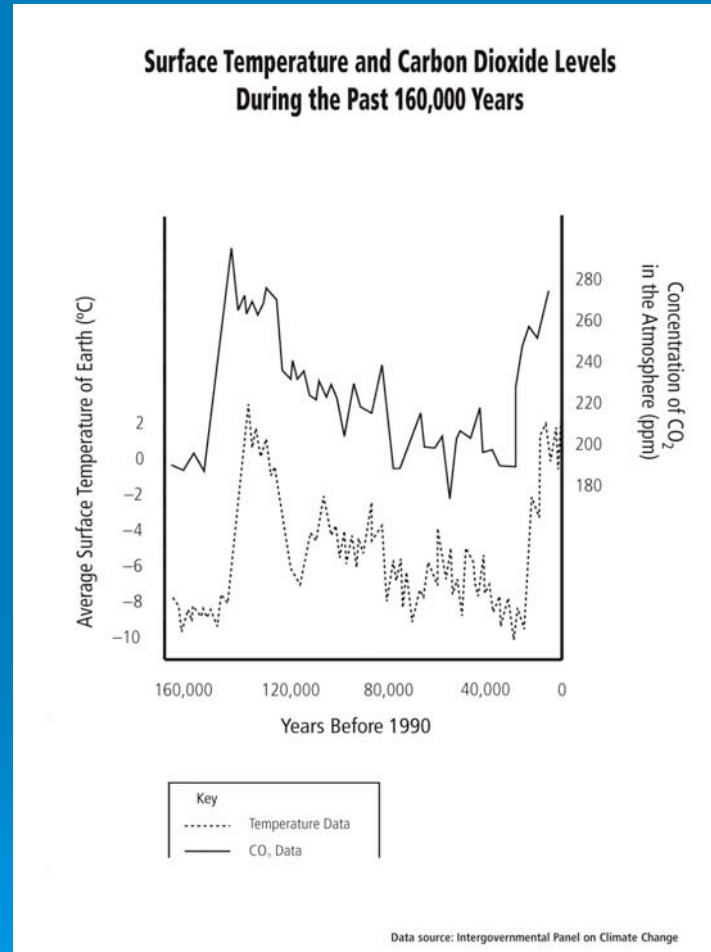


### Average Surface Temperature of Earth



Data source: Committee on Environment and Natural Resources, National Science and Technology Council

# Transparency 6.5



# Moderation: A Collaborative Process

- Find out how each person scored each paper by completing the moderation form
- Identify any papers that have immediate consensus
- Attempt to reach consensus on a single score for each remaining paper by using the scoring guide as a reference and sharing your scoring rationale
- Discuss the instructional implications of the student work

# Exemplars

- Exemplars are sample responses to identified assessment questions
- Can be given to students as a model response
- Can be used by teacher to establish more specific criteria for a level 3 answer

# Scoring vs. Grading

- Student responses can be scored for either formative or summative assessment
- Goal is to see improvement in a student's work, such as initially getting mostly level 1 scores and gradually increasing the number of level 2 scores
- Scores can be translated into grades in various ways, but should not correspond 1-to-1 with letter grades. In other words, a 4 should not be required for an A.
- It is not always appropriate to convert scores on formative assessments into grades

# Perspectives...

- Share scoring guides with students prior to an assignment
- Help students think about their own learning and how they can better express it
- Assessment can and should be used to provide timely and detailed feedback during instruction to guide learning
- When possible, allow students to revise their work in order to achieve a better score