## **ASSESSMENT SYSTEM**

Student progress is measured through assessments embedded in the students' daily work. These tasks assess students on one or more of the assessment variables and pairs with more typical formative and summative classroom assessment. The diagram below illustrates the three core components of the assessment system and teacher support.

#### **NINE ASSESSMENT VARIABLES**

**Designing Investigations Organizing Data Analyzing Data Understanding Concepts Recognizing Evidence Evidence and Trade-offs Communication Skills Organizing Scientific Ideas Group Interaction** 

ASSESSMENT **TASKS** for each variable **SCORING GUIDES** 

(rubrics) describing 4 competency levels for each variable

#### **ASSISTANCE FOR TEACHERS**

**BLUEPRINTS/OVERVIEWS** of assessment tasks throughout course or module

**EXEMPLARS** for each competency level in each Scoring Guide

**MODERATION** collaboration with other teachers for scoring consistency

For each assessment, a sample Level-3 student response is provided. These demonstrate a "complete and correct response."

This is an example assessing the variables Evidence and Trade-Offs.

#### From student text:

3. You find out that NIH has only enough money to fund one study and plans to fund the best one. Explain which study you would fund. Support your answer with evidence and identify the trade-offs of your decision.

Hint: To write a complete answer, first state your opinion. Provide two or more pieces of evidence that support your opinion. Then consider all sides of the issue and identify the trade-offs of your decision.

#### From teacher text:

3. (ET ASSESSMENT) You find out that NIH has only enough money to fund one study and plans to fund the best one. Explain which study you would fund. Support your answer with evidence and identify the trade-offs of your decision.

#### Level 3 (ET) Response

• I think that the clinical trial of the summer fever medicine should be funded if it is rewritten. It should have a control group and look for side effects. Study 2 has a better design, with a control group and a large sample size. But the burns aren't as serious as summer fever. The medicine for summer fever is the most important of the studies because it could keep kids from getting sick or dying. Summer fever is spreading and this could help stop it. So this is the study I would fund. The trade-off of my decision is that researchers who wrote better designed studies will not get any money. Also, people with burns, people who are overweight, and pregnant women who don't want to feel sick will not get any help.







## **LIC Scoring Guide**

IC Scoring daid	PECCRIPTION
Level 4 Above and beyond	Student accomplishes Level 3 AND goes beyond in some significant way, such as:  using relevant information not provided in class to elaborate on your responsee.  using a diagram to clarify scientific concepts.  relating the response to other scientific
Level 3 Complete and	Student accurately and completely explains or uses relevant scientific concepts.
Level 2 Almost there	Student explains or uses scientific concepts BUT has some omissions or errors.
Level 1	Student incorrectly explains or uses scientific concepts.
On your way Level 0	Student's response is missing, illegible, or irrelevant.
X	Student had no opportunity to respond.

# Understanding Concepts (From the Life Science unit, Ecology)

"A second-grader comes up to you and says, 'We just learned that the sun made all the stuff in my lunch. But my lunch was a tuna sandwich.' Using language a second-grader would understand, explain how the sun was the original source of the energy in the tuna sandwich."

### Evidence and Trade-offs (From the Life Science unit, Bioengineering)

"Explain whether you would recommend your energy bar as a healthy snack. Support your answer with quantitative evidence and identify the trade-offs of your decision. (Hint: To write a complete answer, first state your opinion. Provide two or more pieces of evidence that support your opinion. Then consider all sides of the issue and identify the trade-offs of your decision.)"

# ET Scoring Guide

	LEVEL	DESCRIPTION
	Level 4	
	Above and beyon	Student accomplishes Level 3 and goes beyond in some significant way, such as:  • including relevant evidence that was not studied in class.  • evaluating the source, quality, or quantity of evidence.  • proposing relevant experiments or research.  • including a diagram or other visual aid to clarify his or her ideas.
	Level 3 Complete and correct	Student compares options using accurate and relevant evidence AND takes a position supported by the evidence AND student describes trade-offs of his/her decision.
	Level 2 Almost there Level 1	Student discusses one or more options using accurate and relevant evidence, and takes a position supported by the evidence, BUT reasoning is incomplete or part of evidence is missing.
	On your way	Student takes a position BUT provides reasons that are subjective, inaccurate, or unscientific.
irr		Student's response is missing, illegible, or irrelevant.
X	(	Student had no opportunity to respond.
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