

**BaySci III Elementary Science Classroom Observation Protocol**  
(adapted from the Classroom Observation Protocol developed by Horizon Research, Inc.)

Date of Observation \_\_\_\_\_  
Time of Observation \_\_\_\_\_ Start \_\_\_\_\_ End \_\_\_\_\_  
School District \_\_\_\_\_  
Observer \_\_\_\_\_  
Grade Level \_\_\_\_\_

**SECTION ONE: CONTEXTUAL BACKGROUND AND ACTIVITIES**

**I. Classroom Demographics and Context**

**A. What is the total number of students in the class at the time of the observation?**

- 15 or fewer
- 16–20
- 21–25
- 26–30
- 31 or more

**B. What is the approximate percentage of white (not Hispanic origin) students in this class?**

- 0–10 percent
- 11–25 percent
- 26–50 percent
- 51–75 percent
- 76–100 percent

**C. What is the approximate percentage of ELL students in this class?**

- 0–10 percent
- 11–25 percent
- 26–50 percent
- 51–75 percent
- 76–100 percent

**D. Indicate the *teacher's*:**

1. Gender  Male  Female
2. Race/Ethnicity
  - African-American (not Hispanic origin)  American Indian or Alaskan Native  Asian or Pacific Islander
  - Hispanic  White (not Hispanic origin)  Other

**E. If applicable, indicate the *teacher aide's*:**

1. Gender  Male  Female
2. Race/Ethnicity
  - African-American (not Hispanic origin)  American Indian or Alaskan Native  Asian or Pacific Islander
  - Hispanic  White (not Hispanic origin)  Other

**F. Rate the adequacy of the physical environment.**

1. Classroom resources:  

1	2	3	4	5
Sparsely equipped				Rich in resources

2. Classroom Space:



## II. Lesson Description

In a paragraph or two, describe the lesson you observed. Include where this lesson fits in the overall unit of study. Be sure to include enough detail to provide a context for your ratings of this lesson and also to allow you to recall the details of this lesson when needed in future years for longitudinal analysis.

## III. Purposes of Lesson

**A. Indicate the *major content area(s)* of this lesson or activity.** (“Major” means was used or addressed for a substantial portion of the lesson; if you were describing the lesson to someone, this feature would help characterize it.)

- 1. Life Science (please specify: \_\_\_\_\_)
- 2. Physical Science (please specify: \_\_\_\_\_)
- 3. Earth/space sciences (please specify: \_\_\_\_\_)
- 4. Engineering and design principles
- 5. History of science
- 6. None of the above (please explain)

**B. Indicate the *primary intended purpose(s)* of this lesson or activity based on the pre- and/or postobservation interviews with the teacher.**

- 1. Identifying prior student knowledge
- 2. Introducing new concepts
- 3. Developing conceptual understanding
- 4. Reviewing science concepts
- 5. Developing problem-solving skills
- 6. Learning science processes or procedures
- 7. Learning vocabulary/specific facts
- 8. Practicing skills for mastery
- 9. Developing appreciation for core ideas in science
- 10. Developing students’ awareness of contributions of scientists of diverse backgrounds
- 11. Assessing student understanding

## IV. Instructional Materials

**A. Indicate the instructional materials used during the lesson.**

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**B. How closely did the lesson adhere to the instructions provided in the teacher’s manual?**

- Exactly, SKIP to Part V below
- Almost totally  Mostly  Somewhat  A little  Hardly at all

**C. How did the modifications affect the quality of the lesson design?**

- Helped a lot  Helped a little  Neutral  Hurt a little  Hurt a lot

## V. Classroom Instruction

**A. Indicate the *major way(s)* in which student activities were structured.**

- As a whole group  As small groups  As pairs  As individuals

**B. Describe the *major activities* of students in this lesson.**

### C. Comments

Please provide any additional information you consider necessary to capture the activities or context of this

lesson. Include comments on any feature of the class that is so salient that you need to get it “on the table” right away to help explain your ratings; for example, the class was interrupted by a fire drill, the kids were excited about an upcoming school event, or the teacher’s tone was so warm (or so hostile) that it was an overwhelmingly important feature of the lesson.

## SECTION TWO: RATINGS

### I. Design -- Synthesis Rating

1	2	3	4	5
Design of the lesson not at all reflective of best practice in science education			Design of the lesson extremely reflective of best practice in science education	

**Supporting Evidence:**

### II. Implementation -- Synthesis Rating

1	2	3	4	5
Implementation of the lesson not at all reflective of best practice in science education			Implementation of the lesson extremely reflective of best practice in science education	

**Supporting Evidence:**

### III. Science Content -- Synthesis Rating

1	2	3	4	5
Science content of lesson not at all reflective of current standards for science education			Science content of lesson extremely reflective of current standards for science education	

**Supporting Evidence:**

### IV. Classroom Culture -- Synthesis Rating

1	2	3	4	5
Classroom culture interfered with student learning			Classroom culture facilitated the learning of all students	

**Supporting Evidence:**

### Respect for Diversity

Based on the culture of a classroom, observers are generally able to make inferences about the extent to which there is an appreciation of diversity among students (e.g., their gender, race/ethnicity, and/or cultural

background). While direct evidence that reflects particular sensitivity or insensitivity toward diversity is not often observed, we would like you to document any examples you do see. If any examples were observed, please check here  and describe below:

## V. Overall Ratings of the Lesson

### A. Likely Impact of Instruction on Students' Understanding of Science

While the impact of a single lesson may well be limited in scope, it is important to judge whether the lesson is likely to help move students in the desired direction. For this series of ratings, consider all available information (i.e., your previous ratings of design, implementation, content, and classroom culture, and the pre- and post-observation interviews with the teacher) as you assess the likely impact of this lesson. Feel free to elaborate on ratings with comments in the space provided.

Select the response that best describes your overall assessment of the likely effect of this lesson in each of the following areas.

1. Students' understanding of science as a dynamic body of knowledge generated and enriched by investigation.	Negative effect	Mixed or neutral effect	Positive effect
2. Students' understanding of important science concepts. Positive concepts.	Negative effect	Mixed or neutral effect	Positive effect
3. Students' capacity to carry out their own inquiries.	Negative effect	Mixed or neutral effect	Positive effect
4. Students' ability to apply or generalize skills and concepts to other areas of science, other disciplines, and/or real-life situations.	Negative effect	Mixed or neutral effect	Positive effect
5. Students' self-confidence in doing science.	Negative effect	Mixed or neutral effect	Positive effect
6. Students' interest in and/or appreciation for the discipline.	Negative effect	Mixed or neutral effect	Positive effect

Comments (optional):

## B. Capsule Description of the Quality of the Lesson

In this final rating of the lesson, consider all available information about the lesson, its context and purpose, and your own judgment of the relative importance of the ratings you have made. Select the capsule description that best characterizes the lesson you observed. Keep in mind that this rating is *not* intended to be an average of all the previous ratings, but should encapsulate your overall assessment of the quality and likely impact of the lesson. Please provide a brief rationale for your final capsule description of the lesson in the space provided.

### Level 1: Ineffective Instruction

There is little or no evidence of student thinking or engagement with important ideas of science. Instruction is *highly unlikely* to enhance students' understanding of the discipline or to develop their capacity to successfully "do" science. Lesson was characterized by either (select one below):

#### Passive "Learning"

Instruction is pedantic and uninspiring. Students are passive recipients of information from the teacher or textbook; material is presented in a way that is inaccessible to many of the students.

#### Activity for Activity's Sake

Students are involved in hands-on activities or other individual or group work, but it appears to be activity for activity's sake. Lesson lacks a clear sense of purpose and/or a clear link to conceptual development.

### Level 2: Elements of Effective Instruction

Instruction contains some elements of effective practice, but there are *serious problems* in the design, implementation, content, and/or appropriateness for many students in the class. For example, the content may lack importance and/or appropriateness; instruction may not successfully address the difficulties that many students are experiencing, etc. Overall, the lesson is *very limited* in its likelihood to enhance students' understanding of the discipline or to develop their capacity to successfully "do" science.

### Level 3: Beginning Stages of Effective Instruction (Select one below.)

#### Low 3 Solid 3 High 3

Instruction is purposeful and characterized by quite a few elements of effective practice. Students are, at times, engaged in meaningful work, but there are *weaknesses*, ranging from substantial to fairly minor, in the design, implementation, or content of instruction. For example, the teacher may short-circuit a planned exploration by telling students what they "should have found"; instruction may not adequately address the needs of a number of students; or the classroom culture may limit the accessibility or effectiveness of the lesson. Overall, the lesson is *somewhat limited* in its likelihood to enhance students' understanding of the discipline or to develop their capacity to successfully "do" science.

### Level 4: Accomplished, Effective Instruction

Instruction is purposeful and engaging for most students. Students actively participate in meaningful work (e.g., investigations, teacher presentations, discussions with each other or the teacher, reading). The lesson is well-designed and the teacher implements it well, but adaptation of content or pedagogy in response to student needs and interests is limited. Instruction is *quite likely* to enhance most students' understanding of the discipline and to develop their capacity to successfully "do" science.

### Level 5: Exemplary Instruction

Instruction is purposeful and all students are highly engaged most or all of the time in meaningful work (e.g., investigation, teacher presentations, discussions with each other or the teacher, reading). The lesson is well-designed and artfully implemented, with flexibility and responsiveness to students' needs and interests. Instruction is *highly likely* to enhance most students' understanding of the discipline and to develop their capacity to successfully "do" science.

**Please provide your rationale for the capsule rating:**

## **VI. Summary Questions**

1. In what ways and to what extent were the FOSS materials used during the lesson?
2. What was the level of fidelity of implementation of the FOSS materials?
3. To what extent were inquiry-based practices used during the lesson?
4. To what extent did the lesson integrate science and literacy?
5. To what extent was science used as a vehicle for language development?
6. To what extent was the lesson appropriate for ELL students?
7. To what extent did the lesson and classroom dynamics promote an inclusive, equitable learning culture for all students?