Presenter:_____ Evaluator:_____

# Inquiry Lesson* Scoring Rubric

* As opposed to a series of interactive lecture demonstrations or an inquiry lab. See **Levels of inquiry: Hierarchies of pedagogical practices and inquiry processes**. *Journal of Physics Teacher Education Online, 2*(3), February 2005, pp. 3-11, for details.



Adapted in part from *Common Components Shared by Instructional Models* (Table 2-7 of *Inquiry and the NSES*) and *Essential Features of Classroom Inquiry* (Table 2-6 of *Inquiry & the NSES*.) See Chapter 2 of *Inquiry and the National Science Education Standards* for complete details.)

| The teacher: | Accomplished (4) | Proficient (3) | Developing (2) | Poor (1) | Score |
|---|---|---|---|---|---|
| (Component 1)<br><br>**promotes student thinking and critical questioning.** | More student talk than teacher talk; presents students with an interesting and pertinent physical phenomenon that elicits student questions; uses appropriate questioning skills such as wait time and varying levels of critical thinking skills; makes student thinking clear; uses follow-up questions. | Roughly equal amounts of student talk and teacher talk; presents students with an interesting and pertinent physical phenomenon that elicits student attention; uses appropriate questioning skills such as wait time and varying levels of critical thinking skills; makes student thinking clear; uses follow-up questions. | More teacher talk than student talk; presents students with a pertinent physical phenomenon in supposedly and interesting fashion, but it fails to stimulate student interest or attention; does not appear to fully understand what interests students. | Essentially all teacher talk; presents one-sided demonstrations if at all; does not promote student thinking and critical questioning; lesson not engaging to students. | |
| (Component 2)<br><br>**engenders debate and discussion among students.** | Lots of pertinent student-on-student interaction; teacher uses active questioning, interest of students, and mystery of the eliciting phenomenon to promote discussion and debate among the students; students are actively engaged; deflects student questions to others. | Moderate amount of pertinent student-on-student interaction; missed opportunities for debate and discussion; but deflects most questions; students appear to be engaged most of the time. | Small amount of pertinent student-on-student interaction; solicits discussion and debate among the students, but doesn't appear to know how to achieve active questioning, and raise interest of students using various phenomena. | No student-on-student interaction that is pertinent; only student-on-student talk appears to be off topic; all teacher-student conversation; teacher tends to dominate what little discussion there is. | |
| (Component 3)<br><br>**focuses on one or two major questions as the guide to inquiry.** | Student attention focused on finding answers to one or two guiding questions; appears to have a clear understanding of inquiry processes and the nature of science; focuses on depth of understanding; emphasizes knowledge over belief. | Student attention focused on finding answers to three or more guiding questions; appears to be overly concerned with covering content; moves too quickly reducing time for inquiry; much emphasis on breadth. | Focuses student attention on too many questions at a cost to deeper understanding; does employ limited inquiry processes to find answers; strong support for the belief that content more than process drives lesson. | Appears to believe that inquiry consists entirely of asking lots of questions; does not employ the inquiry process; seems to value memorization; does not seem to understand that knowledge is constructed from experience. | |
| (Component 4)<br><br>**provides a variety of levels and paths of investing-ation.** | Allows students freedom to define an experiment and provides students with the means to accomplish tasks using a variety of means; provides access to multiple resources; uses collaborative approach. | Provides at least one alternative way for students to find answers to questions; employs cooperative learning to the exclusion of collaborative learning; deemphasizes knowing merely by referring to authorities. | Provides only one limited way for students to conduct inquiry; provides detailed directions about how to conduct investigation; lesson rather prescriptive. | Shows essentially no consideration for students finding answers to questions; lessen entirely expository; student questions seem not to matter; no evident concern for students conducting any form of inquiry. | |
| | | | | Subtotal: | |
| NOTE: If you score less than 4 on any component, be certain to include one or more suggestions for improvement for that component. | | | | | |

Comments (reference component numbers):

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|---|---|---|---|---|---|
| | | | | Subtotal from previous page: | |
| (Component 5)<br><br>**is a mentor and guide, giving as little direction as possible.** | A guide on the side rather than a sage on the stage; when asked a question by students, responds with a question or generates a discussion with other students; avoids appeal to authority or serving as an authority figure. | Slightly more of a guide on the stage than a sage on the stage; clearly should give the students "more space" for inquiry, rarely but sometimes appeals to authority to teach. | Slightly more of a stage on the stage than a guide on the side; clearly should give the students "more space" for inquiry, but seems uncertain about how to do it. | A sage on the stage, period; actions consistent with didactic/expository teaching; rather proscriptive; student inquiry appears to be irrelevant; strong emphasis on instructions or handouts. | |
| (Component 6)<br><br>**promotes an active quest for new information and ideas.** | Consistently teaches science lesson using active inquiry; more a source of questions and resources than answers; encourages students to play the role of the scientist; provides hands-on or minds-on activities; refuses to serve as an authority figure. | Pretty regularly teaches science lesson as active inquiry; a mix of inquiry and expository teaching approaches with more emphasis on inquiry than exposition; moderate use by group of hands-on or minds-on activities; an authority figure in a limited sense. | Weakly teaches science lesson as active inquiry; very limited use of hands-on or minds-on activities; dominates the use or explanation of any equipment or demonstr-ation, but might use a student assistant; more of an authority figure than necessary. | Does not teach science as active inquiry; students not at all involved with hands-on or minds-on activities; students not required to construct knowledge from experience; teacher sees students' minds as passive receptacles to be filled with information. | |
| (Component 7)<br><br>**maintains a classroom atmosphere conducive to the inquiry process.** | Requires total student participation in inquiry; speaks about the inquiry process; places emphasis on learning; engages students via interest in inquiry; responds appropriately to what students contribute to lesson; authoritative classroom atmosphere; inclusive environment; students regularly on task; | Positively encourages inquiry and gets a fairly consistent student response; speaks about the inquiry process; places emphasis on learning; engages students via interest in inquiry; responds appropriately to what students contribute to lesson; authoritative classroom atmosphere; inclusive environment; students regularly on task | Positively encourages inquiry but receives less than adequate student participation; responds affirmatively only to "correct" student responses; asks follow-up questions only if student have the correct answer; shows a slight amount of bias toward one or more subgroups of students; significant deviation from complete and total engagement; students some times off task. | At best, provides lip service to inquiry processes in which students are not engaged; rarely or never responds affirmatively to any student's response; responds negatively to students' requests to conduct some form of inquiry; authoritarian, permissive, or liaise faire form of classroom management; students basically unengaged. | |
| (Component 8)<br><br>**places emphasis on "How do I know the material of this course?"** | Closure shows concern for students understanding, not merely "knowing," the content of the lesson; clear student summarization about what was learned and how it was learned; conclusions are evidence based; appears to understand the distinction between knowledge and belief and acts on it; uses an epistemological approach. | Closure a summary of what students should know and how they should know it; clear teacher summarization about what was learned and how it was learned; conclusions are evidence based; appears to understand the distinction between knowledge and belief and acts on it; uses a weak epistemological approach. | Closure somewhat of an imbalance between inquiry and exposition (too much one way or another between emphasizing what is know and how it is known); weak or insufficient effort made to summarize what was learned and how it became known; closure merely a summary of what students should know; no epistemological approach. | Very prescriptive closure, "This is what you should known"; is clearly more concerned about what students know than how they know it; too much emphasis on content, and not enough emphasis on process; essentially no closure in the lesson; seems to be unaware of the epistemological side of science knowledge. | |
| | | | | Total: | |

Comments (reference component numbers):