

## CRITERIA FOR THE SCIENCE CLASSROOM OF 2007

Below is a set of statements drawn from current literature on science education and Dr. Karin Wiburg's Criteria for Constructivist Learning Environments. Please rate on a scale of 1-5 the extent to which you agree with these statements as well as the level of implementation in your classroom or school.

**1= no agreement or no implementation to 5= agree strongly or full implementation**

CRITERIA FOR THE SCIENCE CLASSROOM OF 2007-08	Level of Agreement	Level of implementation
1. Excellence in science requires equity-high expectations and strong support for all students.	1 2 3 4 5	1 2 3 4 5
2. The science curriculum in your school district is well articulated across the grades.	1 2 3 4 5	1 2 3 4 5
3. The science teachers in your district have a good content knowledge of science.	1 2 3 4 5	1 2 3 4 5
4. You have a very good understanding of science.	1 2 3 4 5	1 2 3 4 5
5. Students learn science by actively building new knowledge from experience and prior knowledge.	1 2 3 4 5	1 2 3 4 5
6. There are frequent opportunities for students in your classroom to use their life experiences in learning earth science.	1 2 3 4 5	1 2 3 4 5
7. Students are involved in problem-based learning projects using a variety of resources.	1 2 3 4 5	1 2 3 4 5
8. Students formulate questions and design experiments or surveys to collect relevant data.	1 2 3 4 5	1 2 3 4 5
9. Students spend more time involved in science activities than listening to a teacher.	1 2 3 4 5	1 2 3 4 5
10. A variety of grouping strategies are used with opportunities for small group collaborative work occurring frequently.	1 2 3 4 5	1 2 3 4 5
11. Students have opportunities to teach and learn from each other.	1 2 3 4 5	1 2 3 4 5
12. A variety of assessment tools are used to furnish the teacher information about the students' understanding.	1 2 3 4 5	1 2 3 4 5
13. Students help determine how they will be assessed.	1 2 3 4 5	1 2 3 4 5
14. There is enough feedback and assessment during learning that students know how they are doing.	1 2 3 4 5	1 2 3 4 5
15. Technology enhances learning science.	1 2 3 4 5	1 2 3 4 5
16. Technology supports effective science teaching.		
17. Technology influences what science is taught in your classroom.	1 2 3 4 5	1 2 3 4 5

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18. Technology is used to bring world-wide resources into the classroom and connect the classroom to the world.	1 2 3 4 5	1 2 3 4 5
19. Learning science with applications to the environment of the students is essential.	1 2 3 4 5	1 2 3 4 5
20. Learning science is something students do, not something that is done to them.	1 2 3 4 5	1 2 3 4 5
21. Improving science education is part of system education reform.	1 2 3 4 5	1 2 3 4 5
22. Learning science is an active process.	1 2 3 4 5	1 2 3 4 5
23. Reflection, writing, and communication are intertwined processes in learning science.	1 2 3 4 5	1 2 3 4 5
24. Science is for all students.	1 2 3 4 5	1 2 3 4 5
25. Scientific literacy implies that a person can identify science issues underlying national and local decision and express positions that are scientifically and technologically informed.	1 2 3 4 5	1 2 3 4 5
26. Inquiry into authentic questions generated from students experiences is the central strategy for teaching science.	1 2 3 4 5	1 2 3 4 5
27. At all stages of inquiry, teachers guide, focus, challenge, and encourage students learning.	1 2 3 4 5	1 2 3 4 5
28. Teachers create a setting for student work that is flexible and supportive of science inquiry.	1 2 3 4 5	1 2 3 4 5
29. In the science classroom, there is a variety of resources (science tools, materials, media, and technological) accessible to students.	1 2 3 4 5	1 2 3 4 5
30. The class time is structured so that students are engaged in extended investigations.	1 2 3 4 5	1 2 3 4 5
31. The school science program extends beyond the classroom walls to include the community and other outside resources.	1 2 3 4 5	1 2 3 4 5
32. Professional development for a teacher of science is a continuous, lifelong process.	1 2 3 4 5	1 2 3 4 5
33. The school administration supports teacher professional development to expand their teaching strategies.	1 2 3 4 5	1 2 3 4 5
34. Students ask questions as frequently as the teacher.	1 2 3 4 5	1 2 3 4 5
35. Teachers must have knowledge about how to teach linguistically and culturally diverse students.	1 2 3 4 5	1 2 3 4 5
36. Improving the quality of teaching will improve the quality of learning science by the students.	1 2 3 4 5	1 2 3 4 5
37. Opportunities are provided for students to communicate using different modalities.	1 2 3 4 5	1 2 3 4 5
38. The process of transforming schools requires that professional development opportunities be clearly and appropriately connected the teacher's work in the context of the classroom.	1 2 3 4 5	1 2 3 4 5
39. Inquiry into authentic questions generated from students experience is the central strategy for teaching science.	1 2 3 4 5	1 2 3 4 5
40. Students should be challenged to accept and share responsibility for their own learning.	1 2 3 4 5	1 2 3 4 5

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41. Teachers must recognize and respond to student diversity and encourage all students to participate fully in science.	1 2 3 4 5	1 2 3 4 5
42. The science classroom promotes a learning environment that nurtures collaboration.	1 2 3 4 5	1 2 3 4 5
43. Teachers model and emphasize the skills, attitudes, and values of scientific inquiry.	1 2 3 4 5	1 2 3 4 5
44. Without connections students must learn too many isolated scientific concepts and vocabulary.	1 2 3 4 5	1 2 3 4 5
45. Students need to address issues, events, problems, or topics significant in science and of interest to them.	1 2 3 4 5	1 2 3 4 5
46. Students understanding is actively constructed through individual and social processes.	1 2 3 4 5	1 2 3 4 5
47. Teachers must have a practical and theoretical knowledge and abilities about science, learning, and science teaching.	1 2 3 4 5	1 2 3 4 5
48. Students are given opportunities to formulate explanations from evidence to address scientifically oriented question.	1 2 3 4 5	1 2 3 4 5
49. Students evaluate their explanation in light of alternative explanations, particularly reflecting scientific understanding.	1 2 3 4 5	1 2 3 4 5
50. Good professional development for science teachers is beneficial in implementing a science curriculum that promotes the understanding of science not merely the memorization of scientific terms and concepts.	1 2 3 4 5	1 2 3 4 5