

Effective Science Teaching Checklist ¹

<u>Component 1:</u> Process/Content Emphasis	<u>Component 2:</u> Teaching Strategies	<u>Component 3:</u> Student Grouping	<u>Component 4:</u> Assessment	<u>Component 5:</u> Environment	<u>Component 6:</u> Teacher Preparation	<u>Component 7:</u> Questioning	<u>Component 8:</u> Use of Materials
(1) memorization of facts & vocabulary & teacher lectures are emphasized with no use of materials	(1) No evidence of use of the Learning Cycle ²	(1) Students always work individually with no interaction	(1) No assessment of children is evident	(1) No evidence that the teacher provides a risk-free environment ³	(1) Inadequate content knowledge	(1) Teacher does not ask specific questions about the content.	(1) No use of materials
(2) Science content is given major emphasis with the teacher using limited materials	(2) Typically uses 2 or 3 of the 5 stages	(2) Students work in groups with no interaction	(2) Textbook assessment is used exclusively	(2) Very little or contradictory evidence that the teacher provides a risk-free environment	(2) Content knowledge is evident without the necessary materials	(2) Teacher asks factual recall questions only.	(2) Only the teacher uses the materials
(3) Science processes are given major emphasis with some use of materials	(3) Typically uses 3 or 4 of the 5 stages	(3) students work individually & in groups & occasionally get feedback from their peers and teacher	(3) A limited number of assessment tools are used	(3) Some evidence that the teacher provides a risk-free environment	(3) Content knowledge is evident, necessary materials are ready	(3) Teacher asks limited questions that provide opportunity for higher order thinking skills, problem solving techniques, and scientific inquiry	(3) Only the teacher and selected students use materials

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(4) Science process and science content are emphasized equally using hands-on activity	(4) Typically uses the Learning Cycle model ²	(4) Students work individually & in groups to express ideas & get feedback from their peers and teacher	(4) A variety of assessment tools are used including performance-based tests, portfolios, scientific drawings, etc.	(4) Much evidence that the teacher provides a risk-free environment ³	(4) Lesson is well planned, flows smoothly, & actively involves students in learning accurate concepts.	(4) Teacher asks questions that provide opportunity for higher order thinking skills, problem solving techniques, and scientific inquiry	(4) Hands-on materials are frequently used by all students

¹ Reform teaching strategies are characterized at the top of each column.

This checklist is not meant to be used as a punitive measure, but rather as a catalyst and blueprint for moving from novice to expert.

² The 5 Es Learning Cycle: Engage, Explore, Explain, Extend, Evaluate

³ A risk-free environment is rich in materials and opportunities for continuous exploration, discovery, and interaction

Name (or ID designation): _____ District: _____ School: _____ Grade: _____

Observer: _____ Date: _____ Time: _____

Additional Notes: