

## Inquiry Teacher Actions and Student's Responses: Essential Features of Classroom Inquiry and Their Variations

Essential Features of Inquiry	1 Full Inquiry Teaching (Can Use Learning Cycle)	2 Coupled Inquiry (Can Use Learning Cycle)	3 Guided Inquiry	4 Directed Inquiry
1. Learner <b>engages in</b> scientifically oriented <b>questions</b>	Learner poses a question	Learner selects among questions, poses new questions	Learner sharpens or clarifies question provided by teacher, materials, or other source	Learner engages in question provided by teacher, materials, or other source
2. Learner gives priority to <b>evidence</b> in responding to questions	Learner determines what constitutes evidence and collects it	Learner directed to collect certain data	Learner given data and asked to analyze	Learner given data and told how to analyze
3. Learner <b>formulates explanations</b> from evidence	Learner formulates explanation after summarizing evidence	Learner guided in process of formulating explanations from evidence	Learner given possible ways to use evidence to formulate explanation	Learner provided with evidence
4. Learner <b>connects explanations</b> to scientific knowledge	Learner independently examines other resources and forms the links to explanations	Learner directed toward areas and sources of scientific knowledge	Learner given possible connections	Learner provided with connections
5. Learner communicates and <b>justifies explanations</b>	Learner forms reasonable and logical argument to communicate explanations	Learner coached in development of communication	Learner provided broad guidelines to sharpen communication	Learner given steps and procedures for communication
<p><b>More</b> _____ <b>Amount of Learner Self-Direction</b> _____ <b>Less</b>  <b>Less</b> _____ <b>Amount of Direction from Teacher or Material</b> _____ <b>More</b></p>				

Dennis W. Sunal (2013), Modified from National Research Council. (2000). *Inquiry and the National Science Education Standards*. National Academy Press, p. 29