

5 Es of Inquiry Learning

Engage: The basic purpose of Engage is to help students make connections with what they know and can do—mentally engages and motivates students with an event or question. The role of the teacher is to present a situation and identify the instructional task. The teacher also sets the rules and the procedures for the activity.

Teacher behaviors:	Student behaviors:
<ul style="list-style-type: none"> • Motivates • Creates interest • "Taps into" what the students know or think they know about the topic • Raises questions and encourages responses 	<ul style="list-style-type: none"> • Asks questions • Demonstrates interest in the lesson
<p>Examples: Puzzles, Current Events, Current Issues, Discrepant Events, Situational Events, Mysteries, Movies, Poems, KWL Charts, Pre Tests, Demo</p>	

Explore: The basic purpose of Explore is to help students by providing a set of common, concrete experiences upon which they continue building concepts, processes, and skills. The aim of exploration activities is to establish experiences that teachers and students can use later to formally introduce and discuss content area specific concepts, processes, or skills. As a result of the hands-on/minds-on activities, students establish relationships, observe patterns, identify variables, and question events.

Teacher behaviors:	Student behaviors:
<ul style="list-style-type: none"> • Acts as a facilitator • Gives little or no explanation or terms • Observes and listens to students as they interact • Asks good inquiry-oriented questions • Provides time for students to think and to reflect • Encourages cooperative learning 	<ul style="list-style-type: none"> • Explores within the limits of the activity • Conducts activities, predicts, and forms hypotheses • Becomes a good listener • Shares ideas and suspends judgment • Discusses tentative alternatives
<p>Examples: Puzzles, Web explore, Minilab, Guided lab, Field activity, Challenge problem</p>	

Explain: The basic purpose of Explain is to help students describe what they have experienced and to explain how this new information fits in with what they already know – transfer their common experiences into a common vocabulary, i.e., the technical terms and language used in the field. The teacher directs student attention to specific aspects of the engagement and exploration experiences. This stage allows opportunity to correct student misconceptions.

Teacher behaviors:	Student behaviors:
<ul style="list-style-type: none"> • Encourages the students to explain their observations and findings in their own words • Provides definitions, new words, and explanations • Listens and builds upon discussion from students • Asks for clarification and justification • Accepts all reasonable responses 	<ul style="list-style-type: none"> • Explains, listens, and questions • Uses previously recorded observations and findings in explanations • Provides reasonable responses to questions • Interacts in a positive, supportive manner
Examples: Outline, PowerPoint, websites, handouts, graphs, pictures, videos, graphic organizers, reference books	

Elaborate: The basic purpose of Elaborate is to help students apply, extend, and elaborate the concepts in different situations (transfer of learning) – activities become vehicles to probe new situations. Some students may still have misconceptions, or they may only understand a concept in terms of the exploratory experience. Some may not be ready to transfer learning independently, but through these activities will be able to move toward transfer of learning to new contexts.

Teacher behaviors:	Student behaviors:
<ul style="list-style-type: none"> • Uses previously learned information as a vehicle to enhance additional learning in science or in other areas of the curriculum • Encourages students to apply or extend the new concepts and skills • Encourages students to use terms and definitions provided previously 	<ul style="list-style-type: none"> • Applies new terms, definitions, explanation, and skills in new, but similar, situations • Uses previous information to probe, to ask questions, and to make reasonable judgments • Provides reasonable conclusions from evidence • Records observations, explanations, and solutions
Examples: Inquiry labs (students may select among variables to test or lab may be open-ended), Challenge problems, Projects, Unique problems, or Scenarios	

Evaluate: The basic purpose of Evaluate is to help students extend their understanding and to demonstrate knowledge of concepts and skills – solve problems, investigate new situations, continue to construct learning. Informal evaluation can occur from the beginning of the teaching sequence. Both students and teachers should evaluate.

Teacher behaviors:	Student behaviors:
<ul style="list-style-type: none"> • Observes behaviors of students as they explore and apply new concepts and skills • Assess students' knowledge and skills • Encourages students to assess their own learning • Asks open-ended questions • Evaluates critical thinking and problem solving demonstrated by students 	<ul style="list-style-type: none"> • Demonstrates an understanding or knowledge of concepts and skills • Evaluates his/her own progress • Answers open-ended questions • Provides reasonable responses and explanations to events or phenomena
Examples: Problem-based learning scenarios, Career Exploration, Written Lab Reports, Portfolios, Practical Tests, Unit Assessments, Experimental Design	