

Teaching Using the 5E's Instructional Model

1. Engage

Activity which will focus student's attention, stimulate their thinking, and access prior knowledge.

Sample Strategies:

- Observe surroundings for points of curiosity
- Ask questions about the real world
- Consider possible responses to questions
- Note unexpected phenomena
- Identify situations where student perceptions vary

2. Explore

Activity which gives students time to think and investigate/test/make decisions/problem solve, and collect information.

Sample Strategies:

- Engage in focused play
- Brainstorm possible alternatives
- Experiment with materials
- Observe specific phenomena
- Design a model
- Collect and organize data
- Employ problem-solving strategies
- Select appropriate resources
- Discuss solutions with others
- Design and conduct experiments
- Evaluate choices
- Engage in debate

3. Explain

Activity which allows students to analyze their exploration. Student's understanding is clarified and modified because of a reflective activity.

Sample Strategies:

- Communicate information and ideas
- Construct and explain a model or new explanation
- Review and critique solutions
- Utilize peer evaluation
- Assemble multiple answers/solutions
- Determine appropriate closure
- Integrate a solution with existing knowledge/experiences
- Analyze data

4. Extend

Activity which expands and solidifies student thinking and/or apply it to a real-world situation.

Sample Strategies:

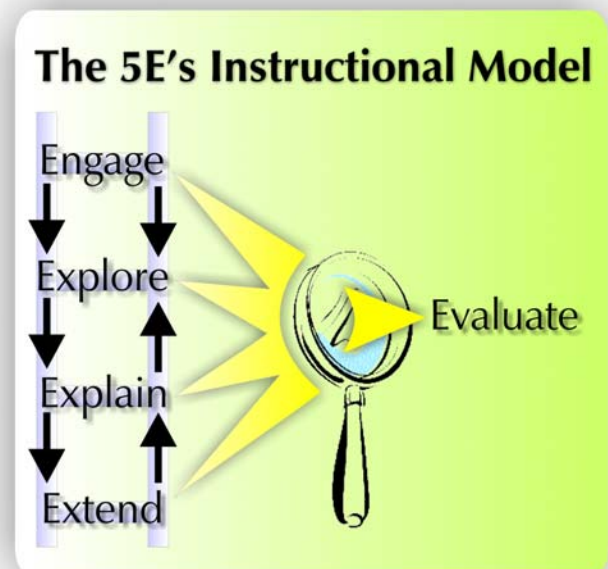
- Make decisions
- Transfer knowledge and skills
- Share information and ideas orally and in writing
- Ask new questions
- Develop products and promote ideas
- Use models and ideas to elicit discussions and acceptance by others
- Conduct more investigations
- Conduct activities in other disciplines

5. Evaluate

Activity which allows the teacher to assess student performance and/or understandings of concepts, skills, processes, and applications.

Sample Strategies:

- Journals, Logs, etc.
- Portfolios
- Constructs mental and physical models
- Student data sheets
- Performance assessments
- Produce a Product
- Rubrics and Scoring Tools
- Tests



5E's Activities

5Es	Suggested Activity	What the Teacher Does	What the Student Does
Engage	<ul style="list-style-type: none"> Demonstration Reading Free Write Analyze a Graphic Organizer KWL Brainstorming 	<ul style="list-style-type: none"> Creates interest. Generates curiosity. Raises questions. Elicits responses that uncover what the students know or think about the concept/topic. 	<ul style="list-style-type: none"> Asks questions such as, Why did this happen? What do I already know about this? What can I find out about this? Shows interest in the topic.
Explore	<ul style="list-style-type: none"> Perform an Investigation Read Authentic Resources to Collect Information Solve a Problem Construct a Model 	<ul style="list-style-type: none"> Encourages the students to work together without direct instruction from the teacher. Observes and listens to the students as they interact. Asks probing questions to redirect the students' investigations when necessary. Provides time for students to puzzle through problems. 	<ul style="list-style-type: none"> Thinks freely but within the limits of the activity. Tests predictions and hypotheses. Forms new predictions and hypotheses. Tries alternatives and discusses them with others. Records observations and ideas. Suspends judgement.
Explain	<ul style="list-style-type: none"> Student Analysis & Explanation Supporting Ideas with Evidence Structured Questioning Reading and Discussion Teacher Explanation Thinking Skill Activities: compare, classify, error analysis 	<ul style="list-style-type: none"> Encourages the students to explain concepts and definitions in their own words. Asks for justification (evidence) and clarification from students. Formally provides definitions, explanations, and new labels. Uses students' previous experiences as basis for explaining concepts. 	<ul style="list-style-type: none"> Explains possible solutions or answers to others. Listens officially to others' explanations. Questions others' explanations. Listens to and tries to comprehend explanations the teacher offers. Refers to previous activities. Uses recorded observations in explanations.
Extend	<ul style="list-style-type: none"> Problem Solving Decision Making Experimental Inquiry Think Skill Activities: compare, classify, apply 	<ul style="list-style-type: none"> Expects the students to use formal labels, definitions, and explanations provided previously. Encourages the students to apply or extend the concepts and skills in new situations. Reminds the students of alternative explanations. Refers the students to existing data and evidence and asks, What do you already know? Why do you think...? Strategies from Explore apply here also. 	<ul style="list-style-type: none"> Applies new labels, definitions, explanations, and skills in new, but similar situations. Uses previous information to ask questions, propose solutions, make decisions, and design experiments. Draws reasonable conclusions from evidence. Records observations and explanations. Checks for understandings among peers.
Evaluate	<ul style="list-style-type: none"> Any of the Above Develop a Scoring Tool or Rubric Test (SR, BCR, ECR) Performance Assessment Produce a Product Journal Entry Portfolio 	<ul style="list-style-type: none"> Observes the students as they apply new concepts and skills. Assesses students' knowledge and/or skills. Looks for evidence that the students have changed their thinking or behaviors. Allows students to assess their own learning and group-process skills. Asks open-ended questions, such as: Why do you think...? What evidence do you have? What do you know about x? How would you explain x? 	<ul style="list-style-type: none"> Answers open-ended questions by using observations, evidence, and previously accepted explanations. Demonstrates an understanding or knowledge of the concept or skill. Evaluates his or her own progress and knowledge. Asks related questions that would encourage future investigations.