

# ALERT Critical Thinking: Mentoring Mathematical Minds

**Student** \_\_\_\_\_

## Understand, Analyze, Act, and Reflect

<b>Analysis and Communication Skills</b>	<b>1 Emerging</b>	<b>3 Developing</b>	<b>5 Consistently Practicing</b>
<b>Problem-Solving</b> —apply a variety of strategies and adapt methods to solve problems.	<b>Shows awareness of some mathematical strategies and methods but struggles to apply them successfully.</b>	<b>Makes progress in building new mathematical knowledge and communicates present understanding to enable further guidance or coaching.</b>	<b>Perseveres and succeeds in analyzing a situation, acts to solve the problem presented, and communicates and reflects on results with clarity and precision.</b>
<b>Reasoning and Proof</b> —make conjectures, evaluate statements, withhold judgment, and develop a structured response.			
<b>Communication</b> —use language of mathematics to share thoughts with precision and clarity.			
<b>Connections</b> —recognize parallel or linked mathematical ideas, apply mathematical ideas in different contexts.			
<b>Representation</b> —use a variety of models (drawings, diagrams, tables, charts, equations) in focus group, journal, or discussion board to present mathematical ideas in a way that can be understood by classmates.			
<b>Reflection</b> —draw, diagram, form equations, take notes, or write narrative in math journal or on discussion board to record present mathematical understanding in a way that can be referenced later.			

## Habits of Mind

<b>Habits of Mind: Dr. Arthur Costa's and Dr. Bena Kallick's attributes of successful creative, problem-solving people.</b>	<b>Emerging (needs practice or reflection time)</b>	<b>Developing (In progress with coaching)</b>	<b>Consistently Practicing (a positive example to others)</b>
Questions new information or new observations			
Grasps concepts, responds to new phenomena			
Applies past knowledge new situations			
Thinks flexibly: generates many and varied ideas			
Self-evaluates: strives for accuracy and precision			