

Taxonomy

Adapted from: Dimensions of Learning (Marzano & Pickering); The New Taxonomy of Educational Objectives (Marzano & Kendall)

USING KNOWLEDGE: Generating & Testing Hypotheses to...

...Address Situations & Issues			...Clarify Phenomena & Events		
Decision Making <i>Select from among seemingly equal alternatives</i>	Situational Problem Solving <i>Accomplish a goal for which obstacles exist</i>	Invention <i>Develop a new product/process that fulfills a perceived need</i>	Experimental Inquiry <i>Offer and test explanations for what is observed</i>	Investigation <i>Historical-Projective-Definitional Resolve confusions related to concepts or events</i>	Systems Analysis <i>Explain parts of a system and how changing one part influences others</i>
<ul style="list-style-type: none"> • Select the best alternative • Generate criteria to select • What is the best way • Which has the most suitable 	<ul style="list-style-type: none"> • Figure out a way to • Given the conditions/obstacles, how will you reach your goal 	<ul style="list-style-type: none"> • Create a new way to • Devise something that will • Change the way • Improve this situation with a new 	<ul style="list-style-type: none"> • If.....then... • What can be predicted • What would happen if • How would you determine if • How can this be explained 	<ul style="list-style-type: none"> • What actually happened when • What would have happened if • Resolve the confusion about • What will happen if • Construct a definition of 	<ul style="list-style-type: none"> • Explain purpose of system • Describe how parts affect each other • What would happen if this part changes

ANALYZING KNOWLEDGE: Examining & Generating....

...Similarities & Differences			...Arguments & Assertions			...Logical Inferences	
Comparing <i>Identify similarities & differences among items and ideas</i>	Classifying <i>Group items according to similarities</i>	Analogical Thinking <i>Show similar relationships for items across domains</i>	Analyzing Perspectives <i>Identify reasons & logic for perspectives on an issue</i>	Constructing Support <i>Build support for assertions or opinions</i>	Analyzing Errors in Reasoning <i>Identify logical or factual errors</i>	Deductive Reasoning <i>Apply general statements to specifics; draw conclusions</i>	Inductive Reasoning <i>Draw general conclusions from multiple specifics</i>
<ul style="list-style-type: none"> • Compare • Contrast • Differentiate • Discriminate • Distinguish 	<ul style="list-style-type: none"> • Sort • Categorize • Organize 	<ul style="list-style-type: none"> • Create an analogy for • ___ is to ___ as ___ is to ___ • Show the same pattern in both 	<ul style="list-style-type: none"> • Clarify the reasons for • Identify the logic behind • Find out why someone might think 	<ul style="list-style-type: none"> • Take a position on • Defend your position on • Explain your reasons • Offer arguments for 	<ul style="list-style-type: none"> • Question the validity of • Listen to insure • Assess • Expose fallacies in 	<ul style="list-style-type: none"> • Make and defend • Predict what will happen • Complete: If...then • Because this is A, what do you know 	<ul style="list-style-type: none"> • Create a principle • Create a rule • What conclusions can be drawn

COMPREHENDING KNOWLEDGE

Symbolizing: <i>Construct symbolic representations of information</i>	Integrating: <i>Identify basic elements/structure of knowledge</i>
<ul style="list-style-type: none"> • Symbolize • Represent • Draw/Illustrate 	<ul style="list-style-type: none"> • Show the organizational patterns in • Diagram to highlight • Chart

RETRIEVING KNOWLEDGE

Recognizing: <i>Identify information related to targeted knowledge</i>	Recalling: <i>Produce information related to targeted knowledge</i>	Executing: <i>Carry out a mental or physical procedure</i>
<ul style="list-style-type: none"> • Select • True, False • Match 	<ul style="list-style-type: none"> • Identify • Point to 	<ul style="list-style-type: none"> • State • Describe • Explain the major

Planning (Stimulus) Questions for Structured Tasks

Analysis

Comparing

- Would it be useful to show how things are similar and/or different?
- Would it be useful for students to focus on identifying how similar things are different and how different things are similar?

Classifying

- Would it be helpful to have students group things?
- Would it be beneficial for students to generate a number of ways to group the same list of things?

Analogical Thinking

- Is there a relationship in one domain that could be used to understand something in a very different domain?
- Could something complex or unfamiliar be understood better by connecting it to a relationship from something simple or more familiar?

Constructing Support

- Are there important claims to be refuted or supported?
- Would it be important to examine existing arguments that support or refute a claim?

Analyzing Errors in Reasoning

- Are there situations in which it would be beneficial to identify errors in reasoning?

Analyzing Perspectives

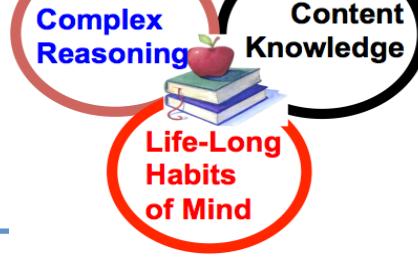
- Would it be useful to identify and understand the reasoning or logic behind a perspective on a topic or issue?
- Would it be useful to analyze opposing perspectives on a topic or issue?

Inductive Reasoning

- Are there important unstated conclusions that could be generated from observations or facts?
- Are there situations for which probable or likely conclusions could be generated?
- Are there issues or situations for which students could examine the inductive reasoning used?

Deductive Reasoning

- Are there generalizations (or rules or principles) that could be applied to reach conclusions and make predictions?
- Are there topics or issues for which students could examine the validity of the deductive reasoning used?



Using Knowledge

Decision Making

- Is there an unresolved decision important to the unit?
- Is there an unresolved issue about who or what
 - has the most or least?
 - is the best or worst?

Problem Solving

- Is there a situation in which a goal cannot be achieved because of a major constraint or limiting condition?
- Is there a situation or process that could be better understood if constraints or limiting conditions were placed on it?

Invention

- Is there a situation that can and should be improved on?
- Is there something new that should be created?

Experimental Inquiry

- Is there an unexplained phenomenon (physical or psychological) for which students could generate explanations that can be tested?

Investigation

- Is there an unresolved issue about something for which a resolution could be posed? For example, are there unresolved issues about
 - the defining characteristics of something? (Definitional)
 - how or why something occurred? (Historical)
 - what would happen if or what would have happened if? (Projective)

Systems Analysis

- Is there a system for which the interaction of parts could be clarified?
- Is there a system for which parts could be altered and then conclusions drawn about potential effects?