Preparing Students for the 21st Century

Rigor Relevance Relationships for ALL Students

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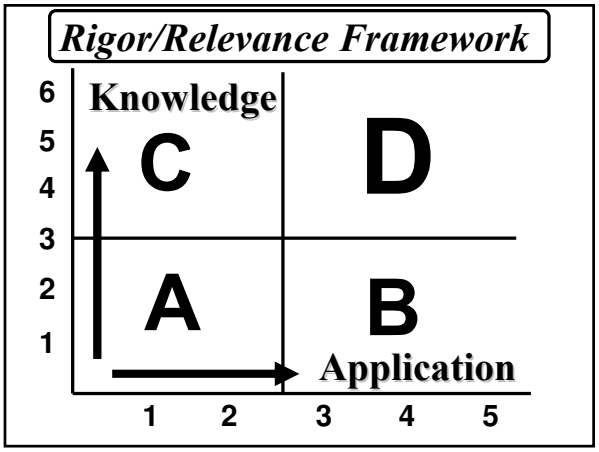
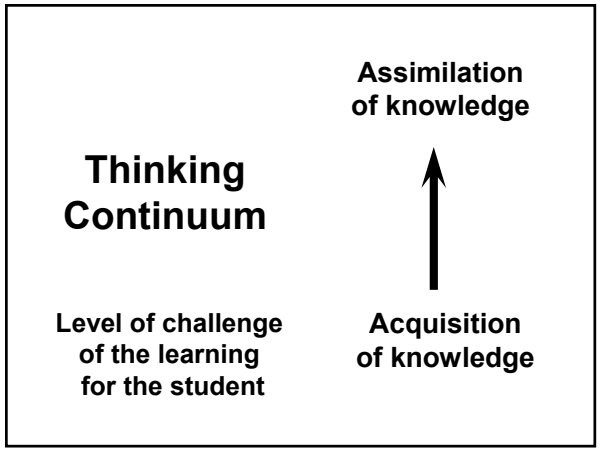
ICLE Philosophy

- ♦ Relationships
- ♦ Relevance
- ♦ Rigor
- ♦ All Students





Knowledge Taxonomy

Awareness Level

- ♦ Recall specific information
- ♦ list, arrange, tell, identify, locate
- ♦ List the four functions of marketing

Comprehension Level

- ♦ Understanding or interpretation of information
- ♦ define, explain, calculate, reword
- ♦ Explain how to take a patient's pulse

Knowledge Taxonomy

Application level

- ♦ Applying knowledge and understanding to a new situation
- ♦ solve, operate, use, handle, apply
- ♦ Use Internet resources for a research paper on our trade deficit

Analysis Level

- ♦ Separate a complex idea into its components
- ♦ categorize, simplify, examine, survey
- ♦ Compare the similarities and differences between Excel and Access applications

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Knowledge Taxonomy

Synthesis Level

- **Combining knowledge to form a new idea.**
- **create, build, generate, reorganize**
- **Design a cell phone package that meets your needs and budget; how would the bacterial population respond genetically to quarantine procedures**

Evaluation Level

- **Choosing an alternative in making a decision.**
- **decide, classify, judge, prioritize**
- **Given two cell phone plans justify which plan best meets your needs and budget; recommend policies for your school to prevent disease from spreading**

Knowledge Taxonomy

Verb List

Rigor is…

- Scaffolding **thinking**
- Planning for thinking
- Assessing thinking about content
- Recognizing the level of thinking students demonstrate
- Managing the teaching/ learning level for the desired thinking level

Rigor is not…

- More or harder worksheets
- AP or honors courses
- The higher level book in reading
- More work
- More homework

RIGOR
MEANS FRAMING LESSONS AT THE HIGH END OF THE KNOWLEDGE TAXONOMY

EVALUATION
SYNTHESIS
ANALYSIS
APPLICATION
COMPREHENSION
KNOWLEDGE

Action Continuum

Acquisition of knowledge → **Application of knowledge**

Relevance of learning to life and work

Application Model

Knowledge

- **Learning Knowledge, Attitude, or Skills**
- **Learning how to use a calculator**

Apply in Discipline

- **Using the knowledge, attitude, or skills within the course curriculum**
- **Using the calculator to determine the material costs of a storage shed**

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Application Model

Apply Across Disciplines

- **Using the knowledge, attitude, or skills in all discipline curriculums**
- **Using the knowledge/skills learned in math class to solve a manufacturing problem**

Apply to Predictable Situations

- **Use information to analyze and solve real world problems with predictable solutions**
- **Read a recipe, calculate the ingredients needed to triple the recipe**

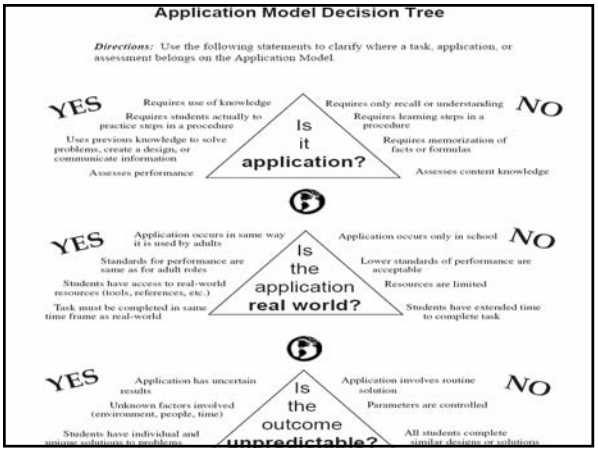
Application Model

Apply to Unpredictable Situations

- **Using information to analyze and solve real problems with unknown solutions**
- **Plan the transportation and lodging for your family's vacation to Disney World**
- **Plan a luncheon for students being inducted into the Business National Honor Society and their parents**

A Relevant Lesson asks Students to:

USE THEIR KNOWLEDGE
TO TACKLE
REAL-WORLD PROBLEMS
THAT HAVE
MORE THAN ONE SOLUTION



Adding Relevancy to Any Learning

Compare Learning to …

- Student's life
- Family's life
- Student's community and friends
- Our world, nation, state
- World of work
- World of service
- World of business and commerce that we interact with

Use Real World Examples

- Moral, ethical, political, cultural points of view and dilemmas
- Real world materials
- Internet resources
- Video and other media
- Scenarios, real life stories
- News - periodicals, media

A Relevant Lesson answers:

- **What am I Learning?**
- **Why am I learning it?**
- **How will I use it?**

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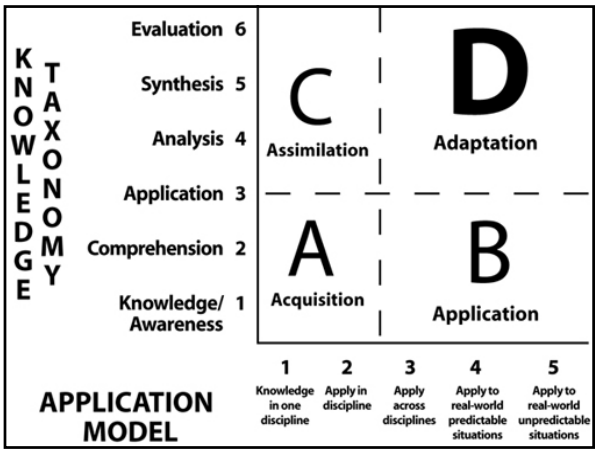
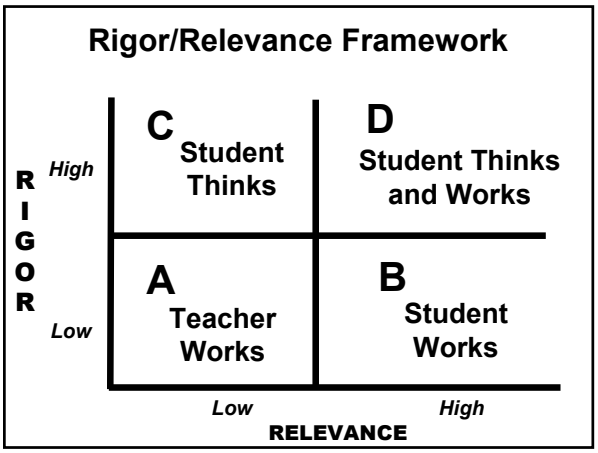


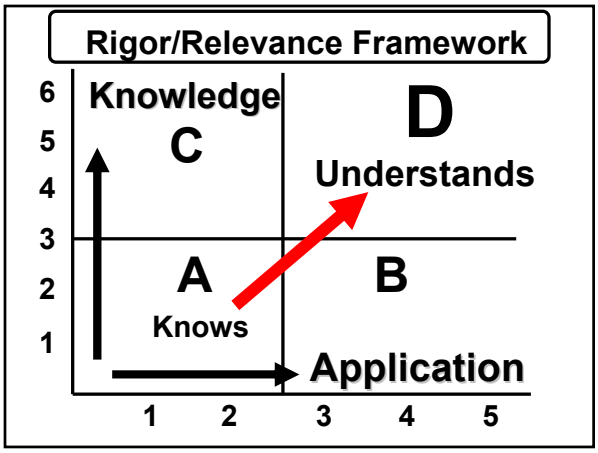


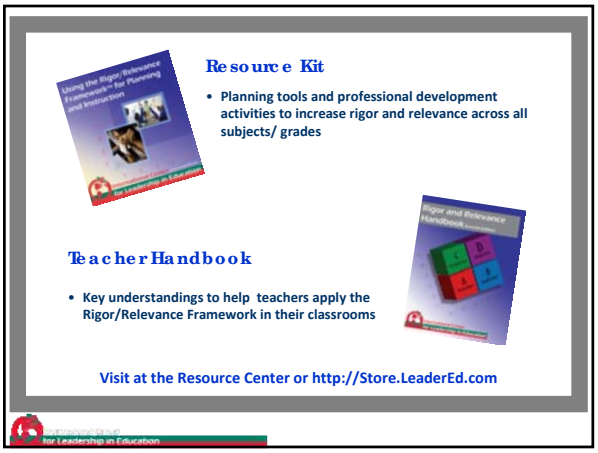
Verbs by Quadrant

A	B	C	D
name	apply	analyze	evaluate
label	sequence	compare	formulate
define	demonstrate	examine	justify
select	interview	contrast	rate
identify	construct	differentiate	recommend
list	solve	explain	infer
recite	calculate	dissect	prioritize
locate	dramatize	categorize	revise
record	interpret	classify	predict
memorize	illustrate	diagram	argue
		discriminate	conclude

Product by Quadrant

A	B	C	D
definition	scrapbook	essay	evaluation
worksheet	summary	abstract	newspaper
list	interpretation	blueprint	estimation
quiz	collection	inventory	trial
test	annotation	report	editorial
workbook	explanation	plan	play
true-false	solution	chart	collage
reproduction	demonstration	investigation	machine
recitation	outline	questionnaire	adaptation
		classification	poem
			debate
			new game
			invention





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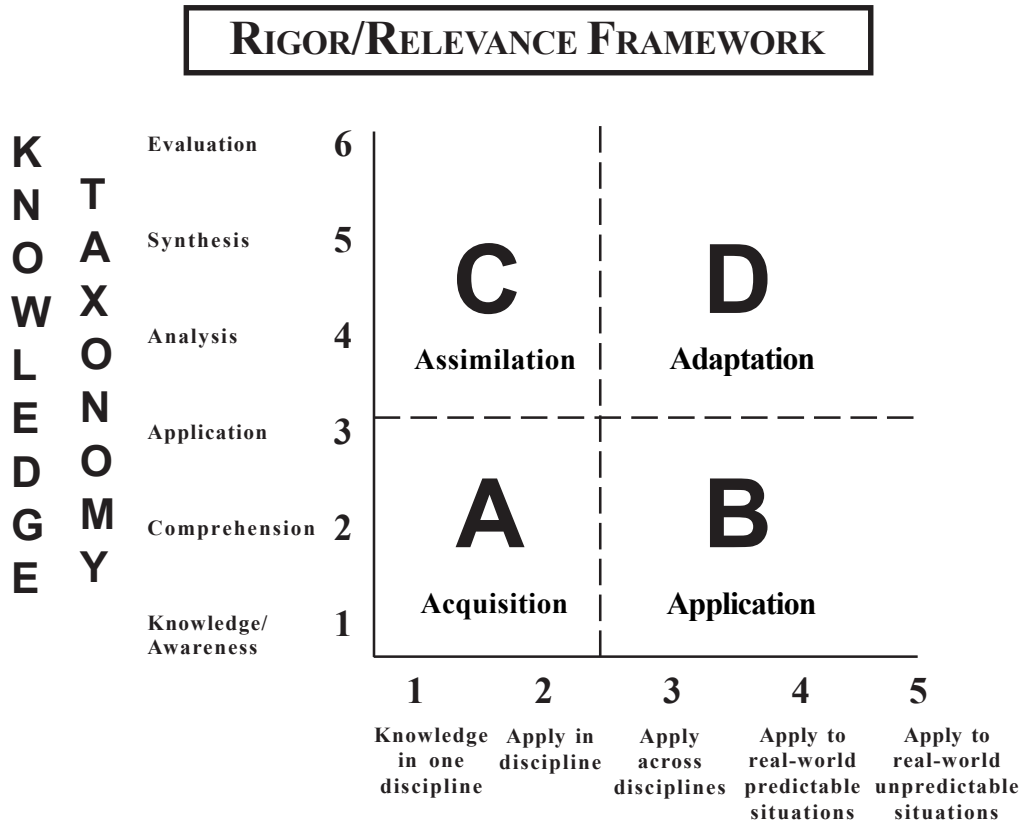


APPLICATION MODEL

The Rigor/Relevance Framework has four quadrants.

Quadrant A represents simple recall and basic understanding of knowledge for its own sake. Quadrant C represents more complex thinking but still knowledge for its own sake. Examples of quadrant A knowledge are knowing that the world is round and that Shakespeare wrote *Hamlet*.

Quadrant C embraces higher levels of knowledge, such as knowing how the U.S. political system works and analyzing the benefits and challenges of the cultural diversity of this nation versus other nations.

Quadrants B and D represent action or high degrees of application. Quadrant B would include knowing how to use math skills to make purchases and count change. The ability to access information in wide-area network systems and the ability to gather knowledge from a variety of sources to

solve a complex problem in the workplace are types of Quadrant D knowledge.

Each of these four quadrants can also be labeled with a term that characterizes the learning or student performance.

Quadrant A — Acquisition

Students gather and store bits of knowledge and information. Students are primarily expected to remember or understand this acquired knowledge.

Quadrant B — Application

Students use acquired knowledge to solve problems, design solutions, and complete work. The highest level of application is to apply appropriate knowledge to new and unpredictable situations.

Quadrant C — Assimilation

Students extend and refine their acquired knowledge to be able to use that knowledge automatically and routinely to analyze and solve problems and create unique solutions.

Quadrant D — Adaptation

Students have the competence to think in complex ways and also apply knowledge and skills they have acquired. Even when confronted with perplexing unknowns, students are able to use extensive knowledge and skill to create solutions and take action that further develops their skills and knowledge.

Here is an example involving technical reading and writing.

Quadrant A
Recall definitions of various technical terms.

Quadrant B
Follow written directions to install new software on a computer.

Quadrant C
Compare and contrast several technical documents to evaluate purpose, audience, and clarity.

Quadrant D
Write procedures for installing and troubleshooting new software.

Student Performance – Knowledge Taxonomy

List Big Idea (Standard) _____

_____

List Essential Knowledge/Skill _____

_____

Directions:

- **List a way students could show you they understand the benchmark at each level on the Knowledge Taxonomy.**
- **Start with the knowledge (Awareness) level and work from the bottom up.**
- **Use your verb chart in the Rigor/Relevance Handbook to help you.**

6 Evaluation _____

_____

5 Synthesis _____

_____

4 Analysis _____

_____

3 Application _____

_____

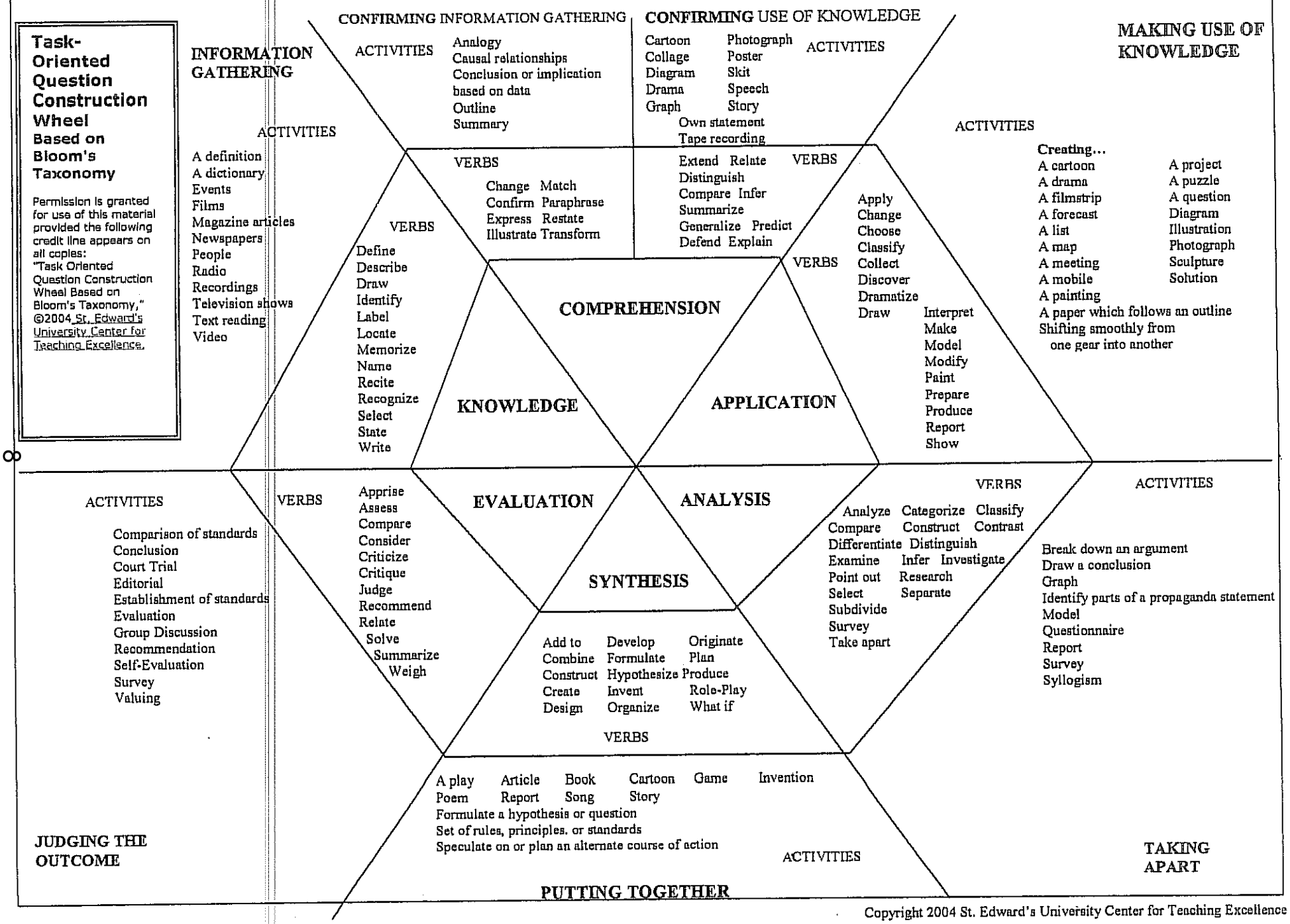
2 Comprehension _____

_____

1 Awareness _____

_____

Task-Oriented Question Construction Wheel
Based on Bloom's Taxonomy



Student Performance – Application Model

List Big Idea (Standard) _____

_____

List Essential Knowledge/Skill _____

_____

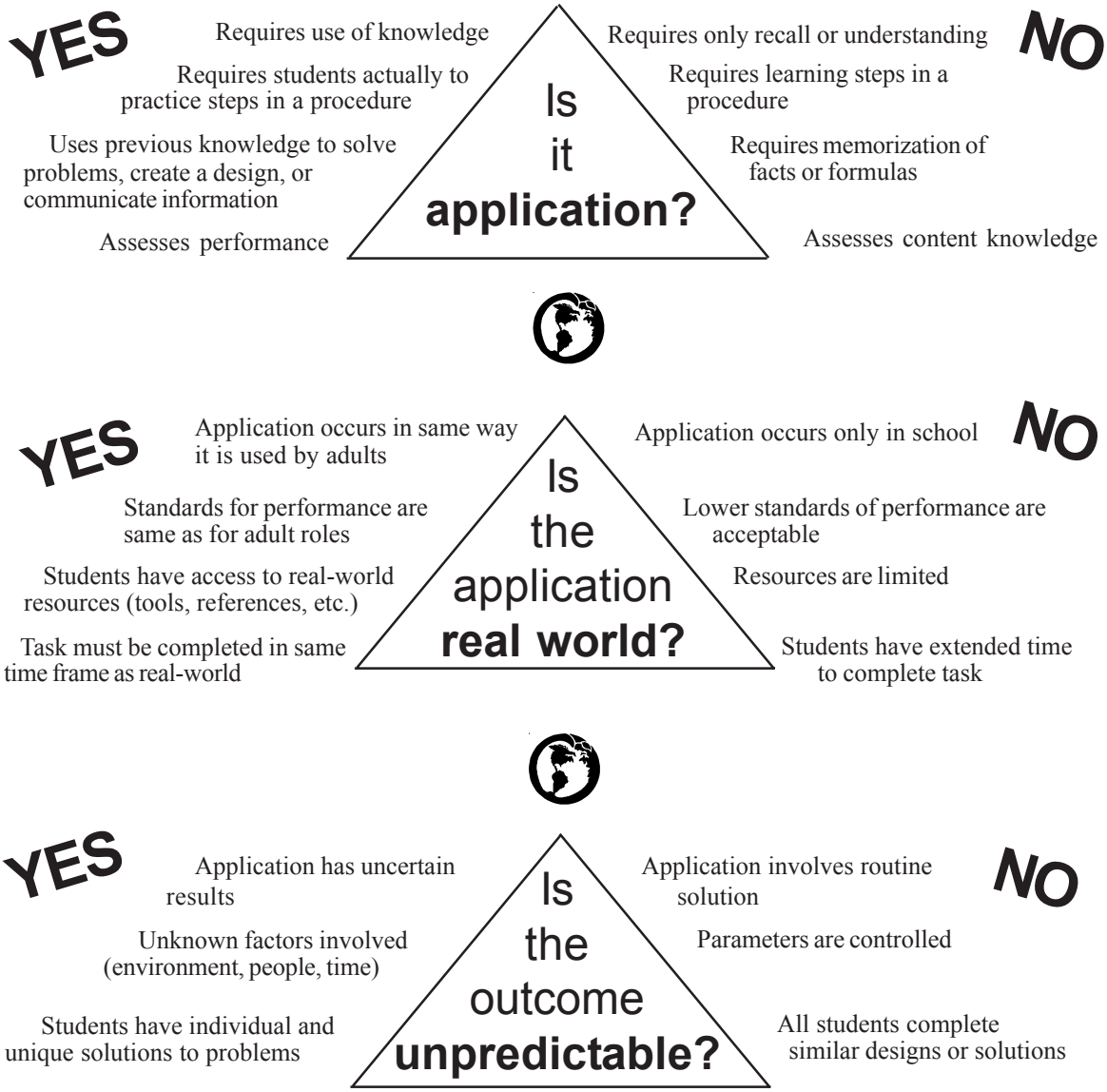
Directions:

- **List a way students could show you they understand and can apply the benchmark at each level on the Application Model.**
- **Start with the lowest level of application (Knowledge in one discipline) and work from the bottom up.**
- **Use your Application Model Decision Tree in the Rigor/Relevance Handbook to help you.**

5	**Apply knowledge to real-world unpredictable situations**	_____ _____
4	**Apply knowledge to real-world predictable situations**	_____ _____
3	**Apply knowledge across disciplines**	_____ _____
2	**Apply knowledge in discipline**	_____ _____
1	**Knowledge in one discipline**	_____ _____

Application Model Decision Tree

Directions: Use the following statements to clarify where a task, application, or assessment belongs on the Application Model.



Analyzing State Curriculum Standards
Benchmark Interpretation Charts

Standard _____

Benchmark _____

(Topic, Knowledge/Skill Statement, Performance Indicator, etc.)

What This Benchmark Means to Me	
Why This Benchmark is Relevant for Students	
How I Will Teach This Benchmark	
How This Benchmark Can Be Reflected in Student Work	
How this Benchmark can be Assessed	
What Resources Support This Benchmark?	

Drafting the Lesson Plan

Think about the lesson plan(s) you would develop to teach this benchmark.

1. How many days would be needed to teach this benchmark?

Day 1	Day 2	Day 3	Day 4	Day 5
Day 6	Day 7	Day 8	Day 9	Day 10
Day 11	Day 12	Day 13	Day 14	Day 15

2. What do students need to know to master this benchmark?

a. At what level of mastery on the Knowledge Taxonomy?

3. What should students to able to do with this knowledge?

a. At what level on the application model?

4. Which instructional strategies would work best with this lesson?