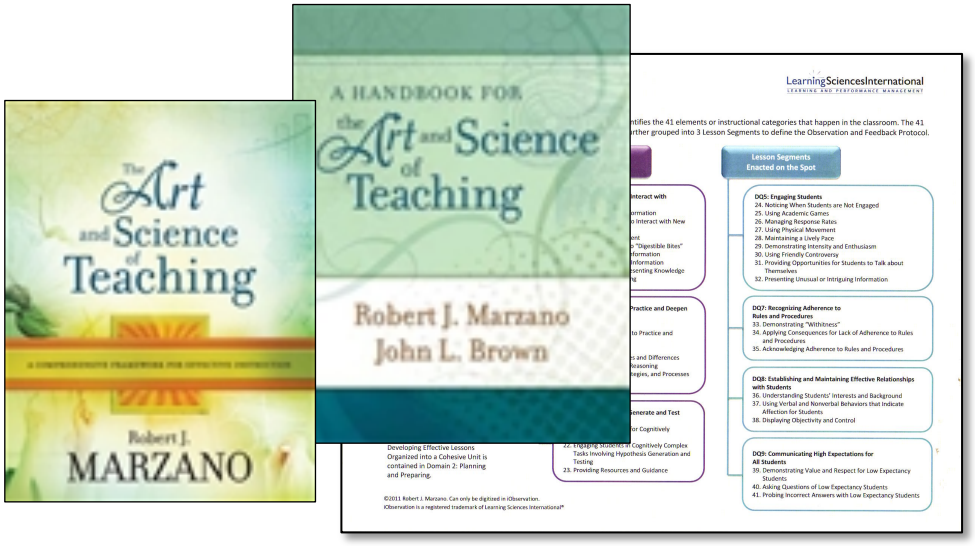
The Marzano Framework

Design Question 1
Element 1

Providing Clear Learning Goals and Scales (Rubrics)



*This packet is best used in conjunction with the Marzano Framework (Mat), Glossary, and the corresponding Design Question 1, Element 1, vodcast presentation.

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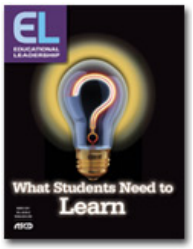
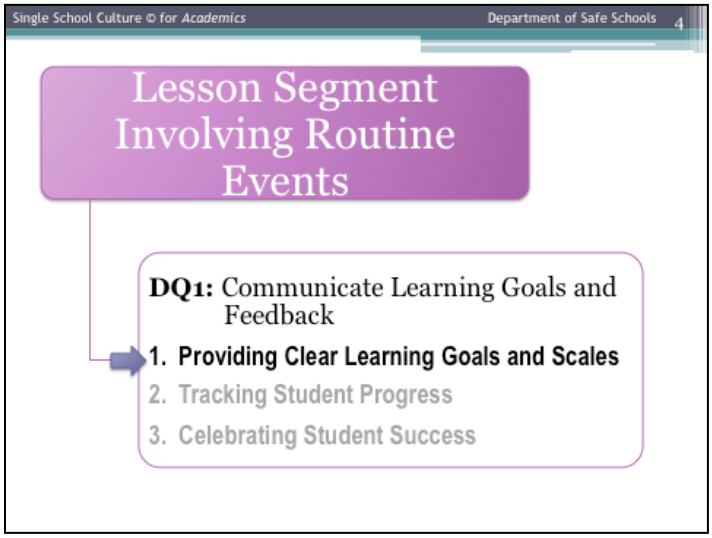
DQ1: Providing Clear Learning Goals and Scales (Rubrics)

"In the last decade of the 20th century, the picture of what constitutes an effective school became much clearer. Among elements such as a well-articulated curriculum and a safe and orderly environment, the one factor that surfaced as the single most influential component of an effective school is the individual teachers within that school."

Marzano, R. J. (2007). *The Art and Science of Teaching.* p.1

What the Research Says about Learning Goals…





Learning targets convey to students the **destination for the lesson**—what to learn, how deeply to learn it, and exactly how to demonstrate their new learning. In our estimation (Moss & Brookhart, 2009) and that of others (Seidle, Rimmele, & Prenzel, 2005; Stiggins, Arter, Chappuis, & Chappuis, 2009), the intention for the lesson is one of the most important things students should learn. **Without a precise description of where they are headed, too many students are "flying blind."**

Moss, Brookhart, Long (2011). Knowing Your Learning Target. *Educational Leadership*. 68 (6). pp. 66-69.

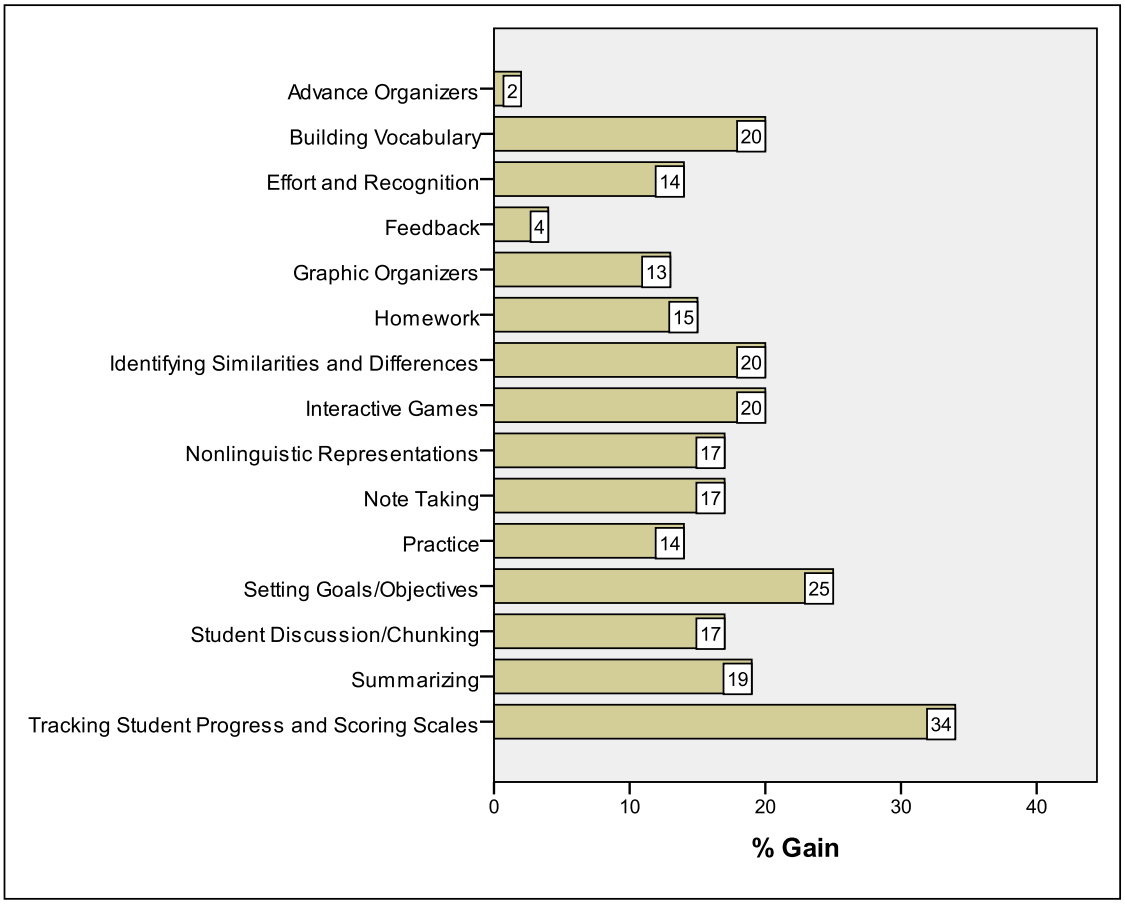
The starting place for all effective instruction is designing and communicating clear learning goals.
Marzano (2009)

Our collective goal is that the largest possible percentage of our students get there. To reach that goal we must define for ourselves and for them where "there" is.

Any energy you invest in becoming clear about your targets will pay dividends…
Stiggins (1994)

If teachers aren't sure of instructional goals, their instructional activities will not be focused, and unfocused instructional activities do not engender student learning.
Marzano (2009)

Percentile Gain for Specific Instructional Strategies



Source: Marzano & Haystead (2009). *Meta-Analytic Synthesis of Studies Conducted at Marzano Research Laboratory on Instructional Strategies*.

High Probability vs. High Yield

There are no high-yield instructional strategies; there are only high-probability strategies. The simple presence or absence of an instructional strategy does not define effectiveness, but it is rather the teacher's expertise in adapting that strategy to the classroom within the context of lesson segments that produces gains in student achievement.

Marzano (2009)

Learning Goals (see Glossary page 7)
A statement of what students will know and be able to do. Dr. Marzano suggests two formats, one for declarative knowledge or information (represented as: "Students will understand…") and one for procedural knowledge or strategies, skills, and processes (represented as: "Students will be able to…").

Declarative Knowledge (see Glossary page 3)
Informational knowledge; Declarative knowledge is developed through review, revision, error analysis, and identification of similarities and differences.

Procedural Knowledge (see Glossary page 10)
Knowledge that is oriented towards skills, strategies, or processes; over time, this knowledge is shaped by the learner. When fully developed, it can be performed at the level of automaticity or controlled processing. This is developed through practice over time.

Partner Activity

Directions: With a partner list:
- 2 examples of declarative knowledge
- 2 examples of procedural knowledge

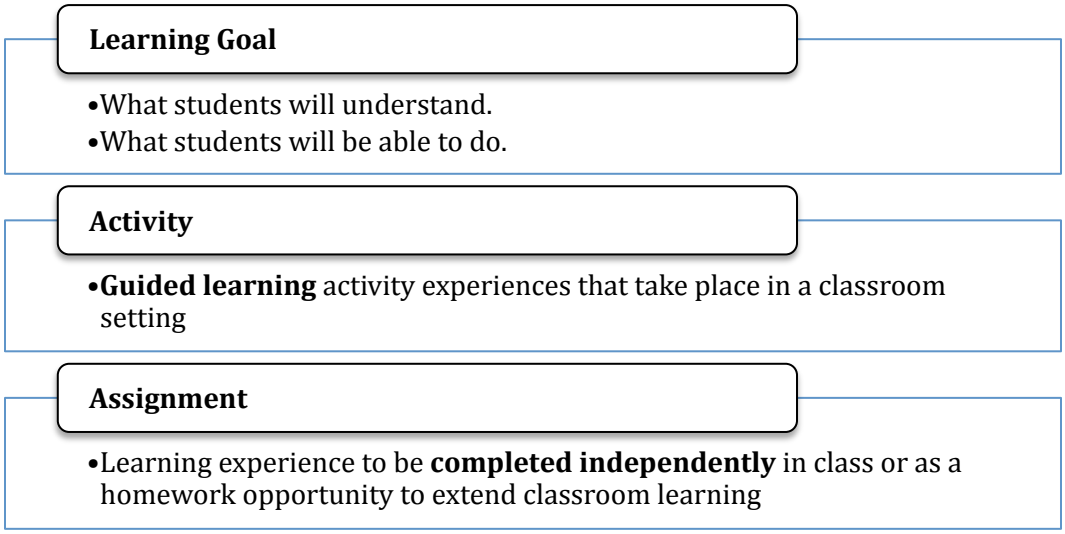
Sources for Learning Goals

- ❖ Next Generation Sunshine State Standards (NGSSS)
  - Big Ideas
  - Benchmarks
- ❖ Common Core Standards
  - Domains
  - Standards

Learning Goals

- A **learning goal** identifies what students **will learn** or **be able to do** as a result of instruction, separate from what they do to demonstrate the learning.
- Learning activities and assignments **help** students reach learning goals.

NOTE: Learning Goals should be overarching goals.

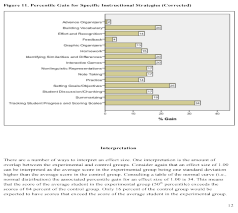


Learning Goal, Activities & Assignments

Subject	Learning Goal	Activities / Assignments
Science	Students will be able to identify similarities and differences between various planets in the solar system.	❖ Students will watch the video on the characteristics of the planets, moons and sun. ❖ Take notes and list the characteristics of the planets. ❖ Read pp 24-32 and complete the graphic organizer.

Learning Goals and Activities/Assignments Activity

Directions: Consider the following statement from various content areas. Identify whether each statement is a learning goal (LG) or an activity/assignment (A).



Example:

Students will produce a play dramatizing the problems created by the French and Indian War.
Activity/Assignment – The cognitive or behavioral outcome is not clear. This is an example of the work students will do.

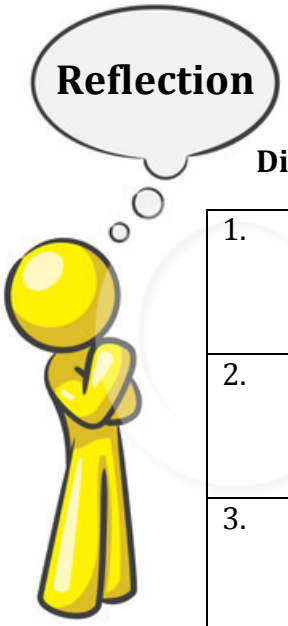
An example of a learning goal: Students will produce a play dramatizing the problems created by the French and Indian War and how they <u>contributed to the causes of the American Revolution</u>.

1. Students will understand that the sun is the largest body in the solar system.
2. Students will understand that the moon and earth rotate on their axis.
3. Students will watch a video on the relationship between the earth and the moon.
4. Students will practice solving several equations in cooperative groups.
5. Students will be able to solve equations with one variable.
6. Students will produce a book report on the book of their choice, including a table of contents, with proper pagination and format throughout.
7. Students will understand how the Borgia family influenced the Renaissance.
8. Students will write a paper describing the relationships among atoms and subatomic particles.
9. Students will understand the defining characteristics of the barter system.
10. Students will observe the teacher sounding and blending a word.

❖ **What are the differences between learning goals and activities/assignments?**

The formulation of clear <u>Learning Goals</u> requires that the users be able to:

1. Define a Learning Goal.
2. Differentiate between Declarative Knowledge and Procedural Knowledge.
3. Distinguish between Learning Goals and Learning Activities or Assignments.



Reflection Activity

Directions: List 3 reasons why learning goals are important.

1.
2.
3.

Administrators' "Look Fors"

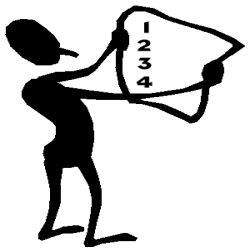
Learning Goals SHOULD be:

- ❖ overarching (unit goals)
- ❖ clear statements of knowledge or information(not activities or assignments)
- ❖ posted and able to be read by students
- ❖ written in student-friendly language (when appropriate)
- ❖ referenced during the lesson

Students SHOULD be able to explain:

- ❖ the Learning Goal
- ❖ how their current activities relate to the Learning Goal

Scales



When learner goals have been articulated in scale format, the teacher and students have clear direction about instructional targets as well as descriptions of levels of understanding and performance for those targets.

The Art and Science of Teaching, Marzano (2007). p. 23.

The Making of a Scale

Score 4.0: In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.
Score 3.0: No major errors or omissions regarding any of the information and/or processes (simple or complex) that were explicitly taught.
Score 2.0: No major errors or omissions regarding the simpler details and processes but major errors or omissions regarding the more complex ideas and processes.
Score 1.0: With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.0: Even with help, no understanding or skill demonstrated.

Notes:

Kindergarten Mathematics Scale

Grade/Content: Kindergarten / Mathematics

Learning Goal:
Students will solve addition problems and complete addition sentences.

SCORE 4.0	**Students will create/solve** their own addition story problem**s:** • with sums to 10 • using pictures and/or acting out **No major errors regarding the score 4.0 content**
SCORE 3.0	**Students will solve** addition problems and **complete** addition sentence**s:** • with sums to 10 • using pictures **No major errors regarding the score 3.0 content**
SCORE 2.0	**Students will:** • **understand** addition as putting together and adding to • represent addition with objects, fingers, mental images, drawings, sounds (e.g., clapping), acting out and using manipulatives • **understand** that addition is joining together • **use** pictures to solve joining problems • **use** symbols (+, =) to join groups of objects (manipulatives or pictures) **No major errors regarding the score 2.0 content**
SCORE 1.0	**With help, partial success at score 2.0 content and score 3.0 content**
SCORE 0.0	**Even with help, no success**

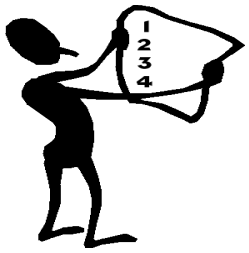
High School Language Arts/Reading Scale

Grade/Content: 9 - Language Arts/Reading

Learning Goal: The student will identify, explain, analyze and determine meaning from a variety of text features.

SCORE 4.0	The student critiques an author's effective/ineffective use of text features and recommends alternatives. **No major errors regarding the score 4.0 content**
SCORE 3.0	The student analyzes and determines meaning in a text from a variety of text features. o Text features make the key or challenging ideas more understandable o Text features make the supporting information more understandable o Text features help the reader anticipate what's to come o Text features clarify or support an author's intentions **No major errors regarding the score 3.0 content**
SCORE 2.0	The student will identify, locate, and explain the following text features: *transitional devices, table of contents, glossary, index, bold text, titles, subtitles, headings, subheadings, sections, charts, tables, graphs, illustrations, maps, diagrams, captions, italicized text, text boxes* The student recognizes and recalls the characteristics of literary fiction texts and literary nonfiction texts. The student recognizes and recalls the characteristics of informational articles and functional materials. The student understands that meaning in a written work is not derived from the text alone. **No major errors regarding the score 2.0 content**
SCORE 1.0	**With help, partial success at score 2.0 content and score 3.0 content**
SCORE 0.0	**Even with help, no success**

Administrators' "Look Fors"



Scales SHOULD be:

- related to the Learning Goal
- posted and able to be read by students
- written in student-friendly language (when appropriate)
- referenced during the lesson

Students SHOULD be able to explain:

- explain the meaning of the levels of performance articulated in the scale or rubric.

Follow-Up Activity

1. Using your benchmarks or other resources, write a learning goal for your content area.
2. Using the template on page 11, develop a scale for your learning goal.
3. Submit completed template to your principal or assistant principal.

Score 4.0: In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.
Score 3.0: No major errors or omissions regarding any of the information and/or processes (simple or complex) that were explicitly taught.
Score 2.0: No major errors or omissions regarding the simpler details and processes but major errors or omissions regarding the more complex ideas and processes.
Score 1.0: With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.
Score 0.0: Even with help, no understanding or skill demonstrated.

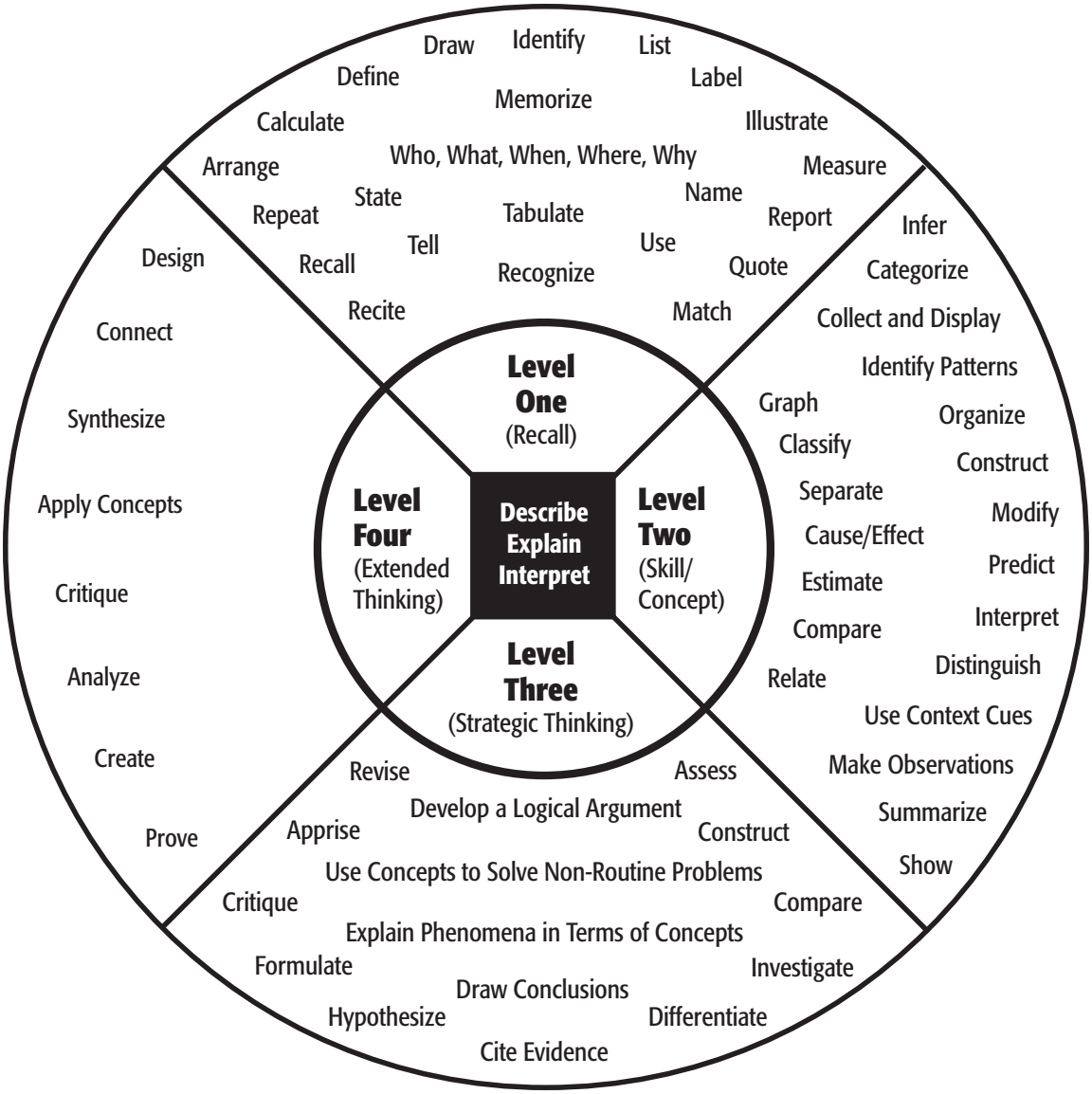
Learning Goal Scale

Grade/Content: _____

Learning Goal:

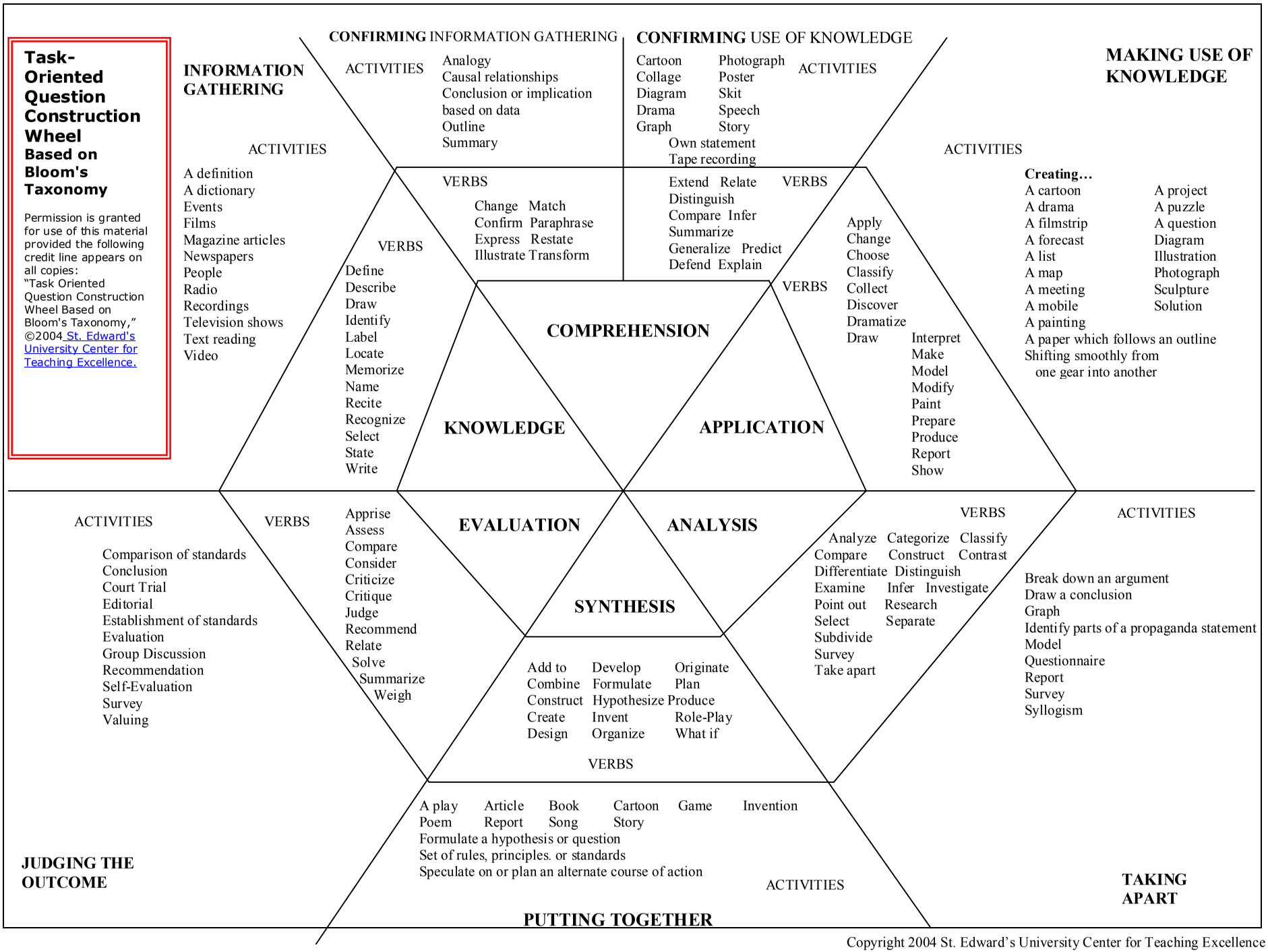
SCORE 4.0	**Students will** **No major errors regarding the score 4.0 content**
SCORE 3.0	**Students will** **No major errors regarding the score 3.0 content**
SCORE 2.0	**Students will** **No major errors regarding the score 2.0 content**
SCORE 1.0	**With help, partial success at score 2.0 content and score 3.0 content**
SCORE 0.0	**Even with help, no success**

Depth of Knowledge (DOK) Levels



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
Recall elements and details of story structure, such as sequence of events, character, plot and setting.	Identify and summarize the major events in a narrative.	Support ideas with details and examples.	Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/ solutions.
Conduct basic mathematical calculations.	Use context cues to identify the meaning of unfamiliar words.	Use voice appropriate to the purpose and audience.	Apply mathematical model to illuminate a problem or situation.
Label locations on a map.	Solve routine multiple-step problems.	Identify research questions and design investigations for a scientific problem.	Analyze and synthesize information from multiple sources.
Represent in words or diagrams a scientific concept or relationship.	Describe the cause/effect of a particular event.	Develop a scientific model for a complex situation.	Describe and illustrate how common themes are found across texts from different cultures.
Perform routine procedures like measuring length or using punctuation marks correctly.	Identify patterns in events or behavior.	Determine the author's purpose and describe how it affects the interpretation of a reading selection.	Design a mathematical model to inform and solve a practical or abstract situation.
Describe the features of a place or people.	Formulate a routine problem given data and conditions.	Apply a concept in other contexts.	
	Organize, represent and interpret data.		

Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <http://www.wcer.wisc.edu/WAT/index.aspx>.



Marzano's Taxonomy – Useful Verbs	
Recognize • recognize (from a list) • select (from a list) • identify (from a list) • determine (true / false)	Retrieval
Recall • name • list • describe • state • identify who, where, or when • describe what	
Executing • use • demonstrate • show • make • draft • complete	
Integrating • summarize • paraphrase •describe the key parts of • describe the relationship between • Explain the ways in which • describe how or why • describe the effects	Comprehension
Symbolizing • use models • symbolize • depict • represent • draw • illustrate • show • diagram • chart	
Matching • compare and contrast • categorize • sort • differentiate • discriminate • distinguish • create an analogy or metaphor	Analysis
Classifying • classify • organize • sort • identify different types or categories • Identify a broader category	
Analyzing Errors • edit • revise • identify errors or problems • evaluate • identify issues or misunderstandings • assess • critique • diagnose	
Generalizing • form conclusions • Create a principle, generalization, or rule • trace the development of • generalize • what conclusions can drawn • what inferences can be made	
Specifying • make & defend • predict • what would have to happen • develop an argument for • judge • under what conditions • deduce	
Decision-Making • select the best among the following alternatives • which of the following would best • what is the best way • decide • which of these is most suitable	Knowledge Utilization
Problem-Solving • solve • adapt • develop a strategy • figure out a way • how would you overcome • how will you reach your goal under these conditions	
Experimenting • experiment • generate & test • test the idea that • what would happen if • how would you test that • how can this be explained • how would you determine if • based on the experiment, what can be predicted	
Investigating •investigate • research • find out about • take a position on • how & why did this happen • what would happen if • what are differing features of	

Elementary School
Learning Goal Scale

Grade/Content: 4th- Reading

Learning Goal: The student will identify and explain the elements of plot structure, including exposition, setting, character development, problem/resolution, and theme in a variety of fiction.

SCORE 4.0	The student will analyze the impact of the _____(elements of the story) on the outcome of the story. Elements of the story: plot structure, including exposition, setting, character development, problem/resolution, theme **No major errors regarding the score 4.0 content**
SCORE 3.0	The student will identify and explain: • plot, including exposition • setting • character • problem/resolution • theme in a specific story. **No major errors regarding the score 3.0 content**
SCORE 2.0	The student will define and understand the purpose for: • plot, including exposition • setting • character • problem/resolution • theme **No major errors regarding the score 2.0 content**
SCORE 1.0	**With help, partial success at score 2.0 content and score 3.0 content**
SCORE 0.0	**Even with help, no success**

Middle School
Learning Goal Scale

Grade/Content: 7th Grade – Civics and Government

Learning Goal:
Students will evaluate the roles, rights and responsibilities of United States citizens, and determine methods of active participation in society, government, and the political system.

SCORE 4.0	**Students will:** • Generate an action plan for increasing active participation in society, government or the political system. **No major errors regarding the score 4.0 content**
SCORE 3.0	**Students will:** • Analyze the impact of dutiful citizenship on society and correlate the findings to non-participatory citizenship. • Evaluate the adverse affects of persons not exhibiting dutiful citizenship on society. **No major errors regarding the score 3.0 content**
SCORE 2.0	**Students will:** • Define and understand the following: roles, rights, responsibilities, citizenship, society, government, political systems, laws, taxes, jury, voting, volunteering, perspectives, influence, and election • Understand the purpose of the Bill of Rights and Constitution • Understand that citizens have certain rights and obligations • Identify the current political parties in America • Understand that people have varying perspectives on governmental issues **No major errors regarding the score 2.0 content**
SCORE 1.0	**With help, partial success at score 2.0 content and score 3.0 content**
SCORE 0.0	**Even with help, no success**

High School
Learning Goal Scale

Grade/Content: 9-12 - Biology

Learning Goal:	The student will be able to **describe** the scientific theory of cells, as well as **relate** the history of its discovery to the process of science

SCORE 4.0	The student will be able to evaluate and rank the importance of contributions to cell theory of several preeminent scientists (i.e., Van Leeuwenhoek, Hooke, Schwann, Schleiden, Virchow). **No major errors regarding the score 4.0 content**
SCORE 3.0	The student will be able to analyze the relationship between the evolution of cell theory and its contributions to the process of science **No major errors regarding the score 3.0 content**
SCORE 2.0	The student will be able define the following terms/phrases: • *Theory, law, cell, science, scientific claim, scientific argumentation, critical/logical thinking (in science), data, alternative scientific explanations, investigation, evidence, phenomena* The students will be able to recall the contributions to cell theory of the following scientists: • *Van Leeuwenhoek, Hooke, Schwann, Schleiden, Virchow* The student will be able to explain cell theory, including how continuous investigations have influenced its development over time. The student understands the ways in which a scientific claim is evaluated. Students can identify the necessary criteria for being scientific. The students will be able to explain the development of a theory. The students understand the differences between theories and laws. **No major errors regarding the score 2.0 content**
SCORE 1.0	**With help, partial success at score 2.0 content and score 3.0 content**
SCORE 0.0	**Even with help, no success**