

Scaffolding For Increased Student Achievement



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What Is *Scaffolding*?


Scaffolding provides the support and structure necessary for students to learn new information or complete assigned tasks successfully.






The term scaffold is a Vygotskian metaphor for teacher support of a learner through dialog, questioning, conversation, and nonverbal modeling, in which the learner attempts literacy tasks that could not be done without that assistance. Roehler and Cantlon (1997) identified five types of scaffolding: (a) offering explanations, (b) inviting student participation, (c) verifying and clarifying student understandings, (d) modeling of desired behaviors, and (e) inviting students to contribute clues for reasoning through an issue or problem. Additional effective scaffolds, especially for struggling secondary readers, are to address the emotional aspects of learning and make learning benefits explicit (Brophy, 1999; Sanacore, 1997).

Steps in Scaffolded Instruction of Thinking Skills (Based on Rosenshine & Meister, 1992).

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- ◆ 1. Present the new cognitive strategy
 - ◆ a. Introduce the concrete prompt.
 - ◆ b. Model the skill.
 - ◆ c. Think out loud while you or the students make decisions.
 - ◆ 2. Regulate difficulty during guided practice.
 - ◆ a. Start with simplified material and gradually increase the complexity of the task.
 - ◆ b. Complete part of the task for the student.
 - ◆ c. Provide cue cards.
 - ◆ d. Present the material in small steps.
 - ◆ e. Anticipate student errors and areas of difficulty and have supplemental lessons and prompts ready.



- ◆ **3. Provide varying contexts for student practice.**

- ◆ **a. Provide teacher-led practice.**

- ◆ **b. Engage in reciprocal teaching.**

- ◆ **c. Have students work in small groups.**

- ◆ **4. Provide feedback.**

- ◆ **a. Offer teacher-led feedback.**

- ◆ **b. Provide checklists.**

- ◆ **c. Provide models of expert work.**



- ◆ **5. Increase student responsibility.**
- ◆ **a. Diminish prompts and models.**
- ◆ **b. Gradually increase complexity and difficulty of material.**
- ◆ **c. Diminish student support.**
- ◆ **d. Practice consolidation - putting all the steps together.**
- ◆ **e. Check for student mastery.**
- ◆ **6. Provide independent practice.**
- ◆ **a. Provide extensive practice.**
- ◆ **b. Facilitate application to new situations.**
- ◆ <http://education.calumet.purdue.edu/vockell/edpsybook/edpsy12/edpsy12scaffold.htm>



Why *Scaffold* Student Learning?

- ◆ Raises Student Achievement
- ◆ Provides Structure and Support
- ◆ Removes Surprises
- ◆ Keeps Students on Task
- ◆ Closes Achievement Gap
- ◆ Differentiates Instruction
- ◆ Increases Success-Extends



How do we *Scaffold* Student Learning?


Great teachers have always used scaffolding

- ◆ Model performance and think aloud
- ◆ Provide prompts, links and guides
- ◆ Pairs in learning
- ◆ Take down the scaffolds when appropriate



Examples of *Scaffolding* Strategies

- ◆ Essential Questions
- ◆ Instructional Rubrics
- ◆ WebQuests
- ◆ Graphic Organizers/Mind Maps
- ◆ Educational Software
- ◆ Teaching Strategies



Examples of *Scaffolding* Essential Questions

What are the most important concepts students should learn from this lesson/chapter/unit?

- Concepts in the form of questions, which suggest inquiry.
- Organizes and sets the focus for the lesson or unit.
- Initiators of creative and critical thinking.
- Conceptual commitments focusing on key concepts implicit in the curriculum.



Essential Questions

Criteria

- ◆ Each student should be able to understand the essential question(s) (kid speak).
- ◆ The language of the questions should be in broad terms.
- ◆ There should be a logical sequence to a set of essential questions.
- ◆ Essential questions should be posted in the classroom.



Essential Questions

Examples

- ◆ How do chemicals benefit society?
- ◆ What must a scientist do in order to research something?
- ◆ How would you explain, demonstrate, or draw the _____ process?
- ◆ How do people express themselves through art today?
- ◆ How can advertising affect a teen's choices?



Essential Questions

Resources

- ◆ Coalition of Essential Schools
<http://www.essentialschools.org/>
- ◆ Understanding by Design, Wiggins and McTighe
- ◆ Beyond Technology, Jamie McKenzie
- ◆ Turning Points 2000 by Jackson and Davis
- ◆ Learning Focus Schools Training, Dr. Max Thompson and Dr. Julie Thomason



Examples of *Scaffolding* Rubrics

Scoring Tools

- Lists the criteria for a piece of work, or "what counts"
- Articulates gradations of quality for each criterion, from excellent to poor.



Instructional Rubrics

Why ?

- ◆ Guide Instruction
- ◆ Clear Expectations
- ◆ Objective Form of Assessment
- ◆ Backward Design
- ◆ Ownership
- ◆ Eliminates Surprises



Instructional Rubrics

Resources

- ◆ *Rubrics and Other Tools for Quality Teaching*
Wessels and Birkholz, Ten Sigma
- ◆ *Understanding Rubrics*, Heidi Goodrich Andrade
originally published in *Educational Leadership*,
54(4)
- ◆ *Understanding by Design*, Wiggins and McTighe
- ◆ *Turning Points 2000* by Jackson and Davis
- ◆ **Learning Focus Schools**, Dr. Max Thompson
and Dr. Julie Thomason



Rubrics-Web Resources

❏ Kathy Schrock's Website

<http://school.discovery.com/schrockguide/assess.html>

❏ TeAch-nology- *Rubric Generator*

http://www.teach-nology.com/web_tools/rubrics/

❏ Understanding Rubrics

by Heidi Goodrich Andrade, Educational Leadership,
54(4) 1997

<http://www.middleweb.com/rubricsHG.html>

❏ The Staff Room – For Ontario Teachers

<http://www.odyssey.on.ca/~elaine.coxon/rubrics.htm>



Scaffolding Strategies

Graphic Organizers

According to Dr. Max Thompson, “The average student studying with the aide of organizers learns as much as the 90th percentile student studying the same content without the assistance of organizers.”

ACTION RESEARCH: GRAPHIC ORGANIZERS



ACTION RESEARCH: GRAPHIC ORGANIZERS		
	No Graphic Organizers Used	Instruction Using Graphic Organizers
	CONTROL GROUP 8250 9 th gr. Percent	EXPERIMENTAL GROUP 8275 9 th gr. Percent
Pre-test Total Group	49%	48%
Pre-test Learning Disabled	3%	5%
Post-test Total Group	65%	88%
Post test Learning Disabled	8%	70%
10 days later	56%	82%
20 days later	19%	65%

Statistics Using Graphic Organizers



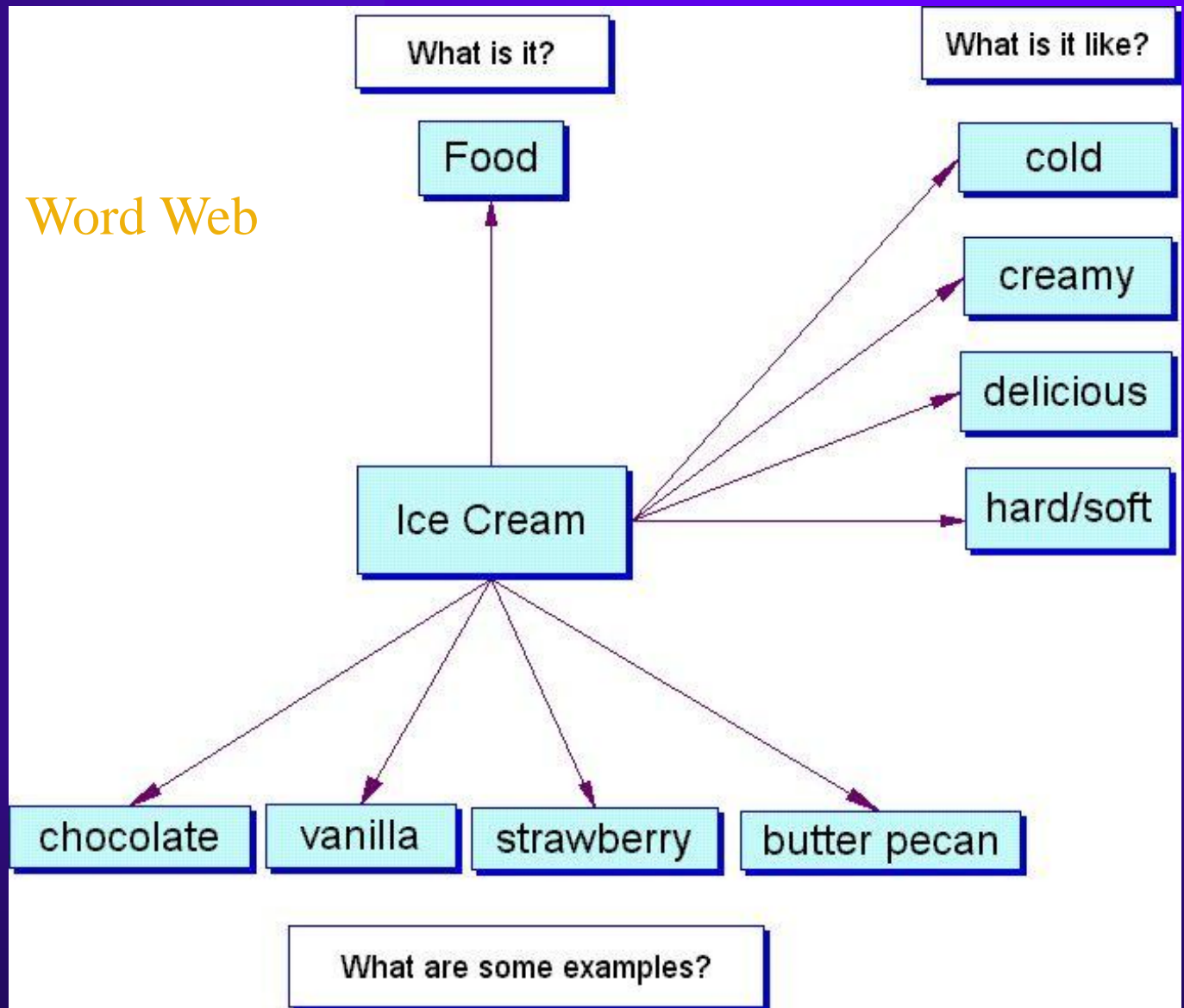
Graphic Organizers

- ◆ Used for thinking, writing, discussion, and reporting/presentation tools.
- ◆ Examples
 - Concept Map
 - Venn Diagram
 - Webs
 - Compare and Contrast
 - Planning
 - Vocabulary
 - Note-Taking
 - Guided Reading

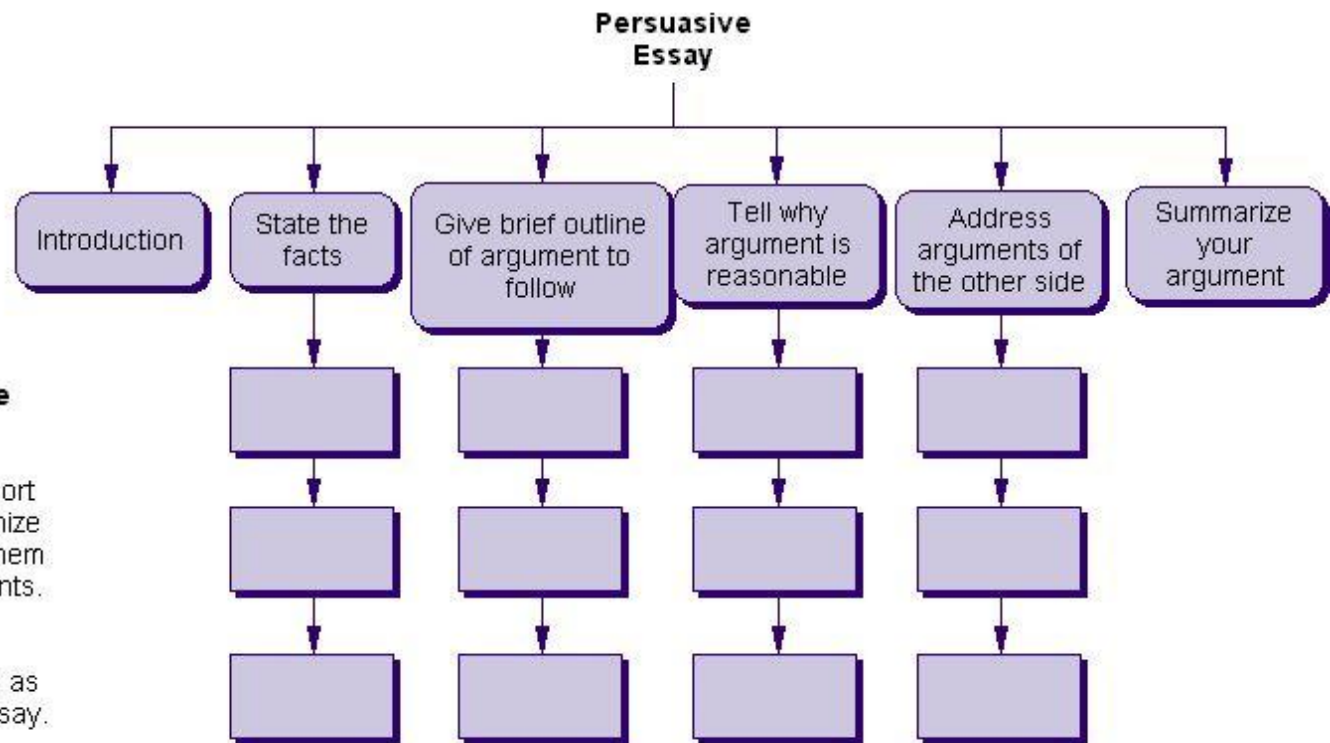
Scaffolding with Inspiration



Word Web



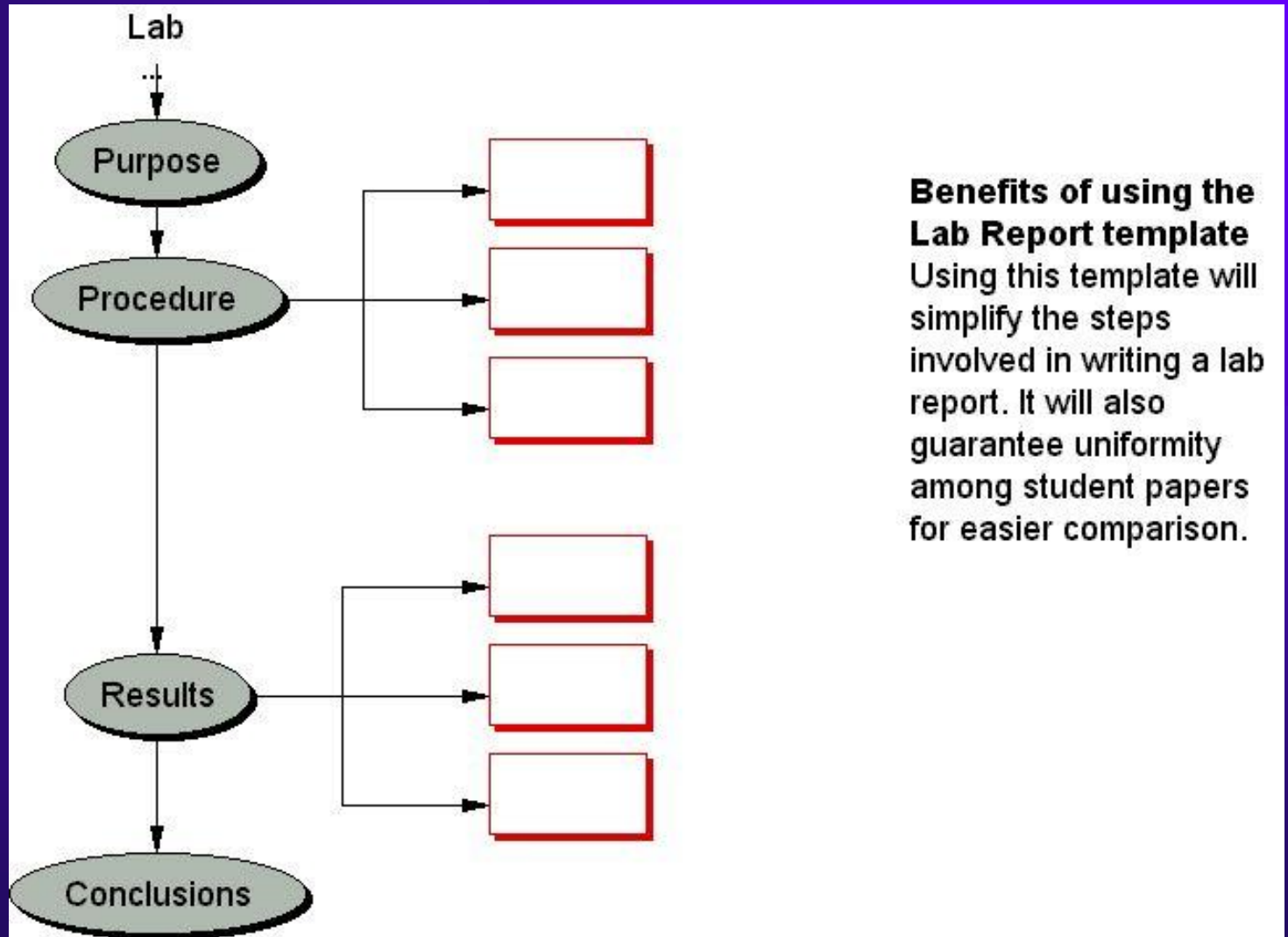
Scaffolding with Inspiration



Benefits of using the Persuasive Essay template

This template will support students as they organize their ideas, and help them to form logical arguments. The template will also remind them of their audience and purpose as they construct their essay.

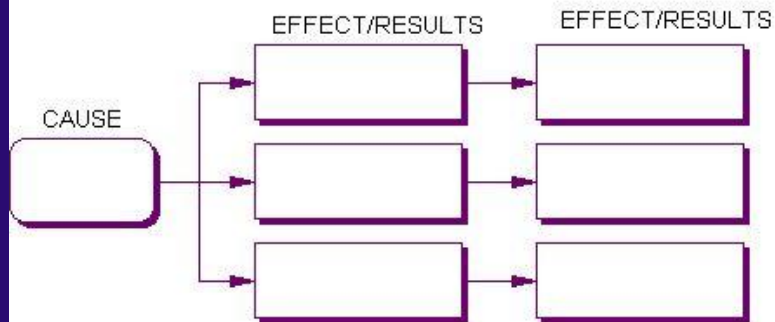
Scaffolding with Inspiration



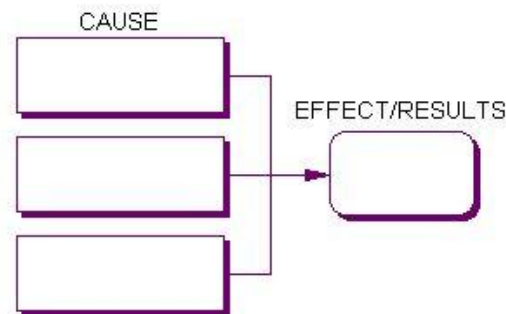
Scaffolding with Inspiration

Cause and Effect

We often find that one cause has several effects,



and that several causes lead to one effect.



Benefits of using the Cause&Effect template

This approach is most often used in science and social studies. In social studies, use this template to show the causes and effects of war, economic trends and crises, political movements and so forth.

It is also a valuable assessment tool to determine if students understand various aspects of history curriculum, such as causes and effects of the Civil War.

In the sciences, use this tool to illustrate chemical reactions, animal adaptation, changes in migration patterns and so forth.

Examination of cause and effect relationships in language arts helps students construct logical lines in fiction writing, examine life events for personal essays and autobiographies, or analyze information for essays.

Examples of *Scaffolding*

Semantic Feature Analysis

Semantic Feature Analysis for Types of Rocks

Rock	Formed by Fire	Changed by Heat Pressure	Formed Other Rocks
granite	+	-	-
obsidian	+	-	-
limestone	-	-	+
coal	-	-	+
shale	-	-	+
slate	-	+	-
gneiss	-	+	-





Graphic Organizers

Resources

- ◆ Inspiration Software- www.inspiration.com
- ◆ Organizing Thinking I, II, by Howard and Sandra Black
 - Critical Thinking Press & Software
- ◆ Graphic Organizer Website www.graphic.org
- ◆ Visual Tools for Constructing Knowledge
- ◆ A Field Guide to Using Visual Tools
 - By David Hyerle
- ◆ Learning-Focused Schools- Learning Concepts and Assessments Inc.



Examples of *Scaffolding*

Teaching with the Web

- ◆ Inputs
 - Skills required
- ◆ Transformations
 - Skills required
- ◆ Outputs
 - Types



Examples of *Scaffolding* WebQuests

Provides the Structure Needed for Deeper Understanding of Content

- ◆ Process Clearly Outlined
- ◆ Motivating
- ◆ Authentic
- ◆ Assessment
- ◆ Provides Directions and Examples



WebQuests

Resources

- ◆ The WebQuest Page

<http://edweb.sdsu.edu/webquest/webquest.html>

- ◆ WebQuest Taskonomy

<http://edweb.sdsu.edu/webquest/taskonomy.html>

- ◆ Blue Web'N

<http://www.kn.pacbell.com/wired/bluewebn/>

- ◆ Matrix of WebQuest Examples

<http://edweb.sdsu.edu/webquest/matrix.html>



Examples of *Scaffolding*

Web Research-Teaching Strategies

- ◆ Internet Bookmarks
- ◆ WebPages - Filamentality
- ◆ Network/Intranet
- ◆ *Beyond Technology*, Jamie McKenzie
<http://www.fno.org/>
- ◆ Internet Activities
 - Bernie Dodge, Schools, Skills, and Scaffolding
<http://edweb.sdsu.edu/people/bdodge/scaffolding.html>
 - Educational Technology Services, Region 20
Resources and Materials
<http://www.esc20.net/etprojects/materials/default.html>



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Examples of *Scaffolding* Technology Integration

◆ Connecting Technology to the Content

[Technology Integration-](#)

http://oktechmasters.org/terris/technology_integration.htm

◆ Technology PowerPoint Games

[Create a Game PowerPoint](#)

[\\$10,000 Pyramid](#)

[Who Wants to Be a Millionaire](#)

[Jeopardy](#)

Examples of *Scaffolding*

Educational Software



- Interactive software scaffolds both the student and teacher- *Tom Snyder Productions-*
- Sets the teacher and student up for success.
- Makes it easy for the teacher to manage group activities using the computer.



Scaffolding

Software Examples from Tom Synder

- ◆ Science Seekers
- ◆ TimeLiner
- ◆ Graph Master
- ◆ Map Maker's Toolkit
- ◆ Fizz & Martina
- ◆ Decisions, Decisions
- ◆ Community Construction Kit

Scaffolding Student Learning
Can Increase Student Achievement



Thank You



Handouts and Materials can be located on
League Academy's
Instructional Coach website.

www.greenville.k12.sc.us/league/supinstr.html

Click on
Conference Materials
tnorris@greenville.k12.sc.us

Thank You