



# Flexible Instruction Using Teacher-Made Graphic Organizers: Integrating Technology, Video and Most Other Instruction with Though-Structuring Tools

## OVERVIEW

In this lesson, students will focus higher-order thinking and learn attitudes, concepts and skills through the use of Graphic Organizers. A re-usable student project module that integrates Multiple Intelligences, technology and instructional media will be used as an example of a complex Graphic Organizer.

## GRADE LEVELS

Students from all grade levels are able to use Graphic Organizers. The student project module can be adapted for all grade levels.

## TIME ALLOTMENT

Keep the schedule for using individual-lesson Graphic Organizers to under 20 minutes

It is best to schedule complex, Graphic Organizer-based projects such as used in our example for periods covering one or two weeks.

## SUBJECT MATTER

This lesson includes instructional goals in multiple content areas.

Graphic Organizers can (and should be) be used with all content areas.

The activities that span multiple content areas, such as is done with Thematic Units increase the meaning of the learning for students.

The content is selected first, and then a Graphic Organizer is matched to suit the purpose of the learning activity.

In this way, the curriculum content, rather than the Graphic Organizer, drives instruction.



## LEARNING OBJECTIVES

The students will be able to:

- Demonstrate higher-order thinking by:
  - Memorizing and recalling
  - Organizing and interpreting
  - Solving problems
  - Analyzing and inferring
  - Compiling and combining
  - Judging and verifying
  - Estimating
  - Computing
- Mobilize Multiple Intelligences to demonstrate the following:
  - Writing a report
  - Delivering a presentation
  - Staging a performance
  - Developing a display
  - Packaging a product
  - Acquiring data and creating charts or graphs
- Construct knowledge by:
  - Diagramming a process
  - Separating cause and effect
  - Developing a timeline
  - Choreographing movements
  - Matching music to mood and meaning
  - Storyboarding scripts and dramatizations
  - Designing models and mock ups
  - Debating
  - Critiquing films and media

## WHAT ARE GRAPHICS ORGANIZERS?

Graphics Organizers are any tool or device that organizes information.

Organizing information creates knowledge.

Graphic Organizers work both sides of the learning process.

- Teaching Side
  - Presenting and Organizing Materials
  - Structuring Communication
  - Communicating Concepts
  - Summarizing Data
  - Communicating Trends



- Learning Side
  - Organizing Materials
  - Remembering Communication
  - Recording Communication
  - Summarizing Data
  - Identifying Trends

Graphic Organizers activate “both sides of the brain” when language elements and visual elements of learning are integrated.

## STANDARDS

Texas Essential Knowledge and Skills (TEKS) (<http://www.state.tx.us/teks>)

Many TEKS at all grade levels can be addressed by the use of Graphic Organizers.

Strand: **Foundation** – Objective 2...

- The student uses data input skills appropriate to the task

Strand: **Information Acquisition** – Objectives  
4 through 6...

- The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision
- The student acquires electronic information in a variety of formats, with appropriate supervision
- The student evaluates the acquired electronic information.

Strand: **Working to Solve Problems** – Objectives 7 through 9...

- The student uses appropriate computer-based productivity tools to create and modify solutions to problems
- The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge
- The student uses technology applications to facilitate evaluation of work, both process and product



Strand: **Communication** – Objectives 10 through 12...

- The student formats digital information for appropriate and effective communication
- The student delivers the product electronically in a variety of media, with appropriate supervision
- The student uses technology applications to facilitate evaluation of communication, both process and product

These strands cover most of the grade levels, and represent opportunities for using Graphic Organizers for teaching and learning.

## MEDIA COMPONENTS

### WEBSITES

(Note: These sites were selected as an example for certain components of this presentation. Inclusion here is not meant as an endorsement of any site.)

#### **ClassroomToolkit.com**

(Focuses upon saving time for teachers. Promotes the use of thematic units, graphic organizers, and Multiple Intelligences.)

<http://www.classroomtoolkit.com>

#### **edHelper.com**

(Elementary/ Young child formats)

[http://www.edhelper.com/teachers/graphic\\_organizers.htm](http://www.edhelper.com/teachers/graphic_organizers.htm)

#### **Enchanted Learning.com**

(Explains Each type of Graphic Organizer)

<http://www.enchantedlearning.com/graphicorganizers>

#### **Graphic.Org**

(Lessons on using Mind Mapping...not just about software)

<http://www.graphic.org/>

#### **ISTE.Org**

(World's largest technology in education non-profit organization. See Appendix H.)

<http://www.iste.org>

#### **Intel.Com**

(Free online tools for visual learning)

<http://www.intel.com/education/tools/>



**TeacherVision.Com**

(Catalog of Graphic Organizers)

<http://www.teachervision.fen.com/page/6293.html>

**Rubistar**

(Online resources for assessment)

<http://rubistar.4teachers.org/index.php>

**PUBLICATIONS**

Ditson, L.A., Kessler, R., Anderson-Inman, L and Mafit, D. (2001) *Concept-Mapping Companion*.  
ISTE. ISBNi-56484-167-7

A number of “Black Line Books” are available with pre-printed Graphic Organizers, and directions for using the organizers. A trip to a local (San Antonio, TX) teachers’ store revealed a selection of at least 25 such titles.

A teacher resource catalog lists offerings from the following publishers:

**Carson-Dellosa**

<http://www.carsondellosa.com>

**Creative Teaching Press**

<http://www.creativeteaching.com>

**Scholastic**

<http://www.scholastic.com>

**Teacher Created Resources**

<http://www.teachercreated.com>

(Note: This is not a recommendation to purchase Black Line Books. Instead, school districts or campuses are encouraged to build a network or Web repository of teacher-made organizers and make these available for all staff members to use.)

**PROFESSIONAL DEVELOPMENT**

Streaming video for teacher professional development is available on the Internet.

Sometimes, PBS provides classes, and graduate credit is available for a fee.

**PBS:Teacherline**

(TECH195.146 Teaching and Learning with Graphic Organizers: Featuring Inspiration

10/26/2005 - 12/6/2005)





<http://teacherline.pbs.org/teacherline/modules/courseInfo.cfm?courseNum=TECH195.146>

INTEL™ offers a free staff development course based upon the Train-the-Trainer model. School districts must apply.

<http://www97.intel.com/education/teach/workshops/index.asp>

## SOFTWARE

### Free Mind

(Open Source – Free software)

<http://freemind.sourceforge.net>

### Inspiration

Inspiration Software Inc.

<http://www.inspiration.com>

(Download a 30-day trial of fully functioning software, which allows the ability to save and print graphic organizers, timelines, diagrams, outlines, and concept maps. Available for both Mac and PC users.)

### Mind Genius Education

(Professional level software. Download the free trial and print the tutorials on mind mapping)

<http://www.mindgenius.com>

### Mind Manager Pro/ X5

(Another professional product. Outstanding integration with MS Office Suite™)

<http://www.mindjet.com>

### SEER

(English/ Spanish Translation software. The software provides a graphic representation of the sentence structure. Special note: You must be an expert in the target language to accurately translate, but this software examines the deep structure of both languages and provides a graphic representation.)

<http://wordmagicsoft.com>

### The Brain

(Fully interactive maps. Must see to believe. Download the free trial and see what mind mapping should look like.)

<http://www.thebrain.com>



## **Visual Thesaurus**

(An incredible program that automatically displays the connection between words. A must buy for any teacher.)

<http://www.visualthesaurus.com>

## **MATERIALS**

You will need the following to complete these activities:

The complex Graphic Organizer found in Appendix A is for a student report, presentation, display or performance project.

## **VOCABULARY**

### **Chunking**

Chunking is the mental process of collecting discrete bits of information into meaningful concepts or constructs. Chunking is the mental process that provides the power and efficiency behind the use of Graphic Organizers. (See the “Magic Number”)

### **Concept Map**

A concept map is any diagram that connects concepts and ideas. This term is a superset (Meta-level) term. The term is used synonymously with the term “Mind Map,” although a “Mind Map” is really a specific form (subset) of a concept map that was invented by Tony Buzan

### **Extrapersonal**

An proposed “Intelligence” that includes values, ethics, moral issues, and the sensitivity and awareness of societal norms that are often sidestepped in classrooms

### **Graphic Organizer**

Any thought-structuring chart, diagram calendar, timeline, table or map that organizes ideas and information

### **Magic Number**

“Seven (plus or minus) two.” The Magic Number is the number of discrete items that can be held in conscious awareness at the same time. This is the reason that rote memory and drill is so ineffective and time consuming. The solution to this mental limit is the “Chunking” of Information...the mental process that gives Graphic Organizers their power and effectiveness



**Mind Map:**

A paper or electronic concept diagram that chunks information and identifies relationships

**Multiple Intelligences**

A theory that learning takes place through many channels, especially not through the medium of teacher talk

**Project-Based Learning**

Project-based learning is a strategy for blending hands-on, visual, interpersonal and social intelligences during learning activities. Project-based learning provides practice and reinforcement in an environment of curiosity and inquiry. This strategy recognizes that meaningful learning is more than a “One-Off” lecture.

**Re-Usable Modules**

Any systematic and structured materials that teachers can use to successively increase the level of difficulty for student assignments

**School Work**

An erroneous meta-language concept... a carry over from Industrial-Age school of education design...used to inflict boredom on generations of children. This is the antithesis of how children actually learn

**Thematic Units**

Thematic Units are a teaching strategy that focuses upon meaningful learning. Content area subjects are unified around a theme of interest (preferably of interest to students). And integrations (such as the integration of technology and instructional media) collect around (Higher-order thinking and Multiple Intelligences) explorations about the topic.

**PREP FOR TEACHERS**

Teachers will need to map the student project requirements.

Then, the teacher will decide the requirements of the project, and check the requirements on the project’s Graphic Organizer (See Appendix A for the template, and a sample of how the project form was used in a Fifth Grade Bilingual Classroom.)

The materials that the teacher needs depend on what options are checked on the Learning Project Assignment Organizer.





## INTRODUCTORY ACTIVITY: SETTING THE STAGE

The teacher spends as little time as possible describing the learning project to the students. The teacher posts the schedule for students to see.

## LEARNING ACTIVITIES: Scheduled activities can include...

- Library Research
- Internet Research
- Computer Lab Time
- Rotating Use of Classroom Computers
- Science Lab Time
- Students Interviewing Experts
- Students Gathering Survey Data

## CULMINATING ACTIVITY

Student Products form the culminating activity...

Students present or deliver...

- Reports
- Presentations
- Displays (Including Science Fair Style Projects)
- Performances

These activities match the curricular focus of the project.

## CROSS-CURRICULAR & EXTENSION ACTIVITIES

The focus upon Multiple Intelligences automatically means that

### **Mandatory Project Connections**

- Verbal/ Linguistic
- Mathematical/ Logical
- Visual/ Spatial (Graphic Organizers)
- Body-Kinesthetic (Hands-on)

### **Optional Project Connections**

- Music/ Rhythmic
- Interpersonal (Interviews)
- Intrapersonal (Feelings, Reflections)
- Extrapersonal (Values, Ethics, Moral Issues)



## Appendices Listing

**Appendix A:**

**Learning Projects Assignment Worksheet/ Sample**

**Appendix B:**

**Group Project Grading Rubric**

**Appendix C:**

**Note-Taking Organizer**

**Appendix D:**

**Portfolio Conference Graphs**

**Appendix E:**

**Engaged Learning Indicators**

**Appendix F:**

**Great Visual Communication (MS PowerPoint™ Presentation Extract)**

**Appendix G:**

**Visual Model**

**Appendix H:**

**ISTE Graphic Organizer Links**

**Appendix I:**

**Integrating Higher Order Thinking**

**Appendix J:**

**Sample Daily Oral Vocabulary with Visual Thesaurus Graphic Organizer**

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For Profit Institutions:

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- Must include notice of copyright and license in no-cost materials



APPENDIX A: Learning Projects Assignment Worksheet

<b>Project Title:</b>	
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<b>Project Type:</b>		<b>Mandatory</b> (Must include all of these)	<b>Optional</b> (Must include at least one of these)
<b>Intelligences</b>	<input type="checkbox"/> Report	<input checked="" type="checkbox"/> Verbal-Linguistic (Report/ Presentation)	<input type="checkbox"/> Music-Rhythmic
	<input type="checkbox"/> Presentation	<input checked="" type="checkbox"/> Mathematical-Logical (Charts/ Graphs)	<input type="checkbox"/> Interpersonal (Interviews)
	<input type="checkbox"/> Display	<input checked="" type="checkbox"/> Visual-Spatial (Graphic or Art Design)	<input type="checkbox"/> Intrapersonal (Your feelings/ Reaction)
	<input type="checkbox"/> Performance	<input checked="" type="checkbox"/> Body-Kinesthetic (Hands-on)	<input type="checkbox"/> Extrapersonal (Values, Ethics, Moral Issues)

<b>Project Requirements:</b>		
<b>Taxonomy</b>	<b>1. Language</b>	
	<b>2. Mathematics</b>	
	<b>3. Visual Design</b>	
	<b>4. Hands-on</b>	
	<b>5. Other:</b>	

<b>What not to include in Project:</b>	
<b>1.</b>	
<b>2.</b>	
<b>3.</b>	

<b>Specific Steps:</b>	
<b>1. Research</b>	
<b>2. Concept Outline</b>	
<b>3. Charts or Graphs</b>	
<b>4. Design Analysis</b>	
<b>5. Report/ Presentation</b>	
<b>6. Evaluation</b>	

<b>Resources Required:</b>	
<b>People</b>	
<b>a) Time</b>	
<b>b) Materials</b>	
<b>c) Library</b>	
<b>d) Internet</b>	

<b>Goals Measuring Success:</b>	



a)	
b)	

<b>Evaluation/ Rubric:</b>	
a)	
b)	
c)	

<b>Timeline:</b>	
<b>When Due:</b>	<b>School Days</b>
<b>Task:</b>	

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<b>Project Title:</b>	<b>Physical Properties of Matter</b>	<b>Page B-24</b>
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<b>Project Type:</b>		<b>Mandatory (Must include all of these)</b>	<b>Optional</b>
<b>Intelligences</b>	<input checked="" type="checkbox"/> Report	<input checked="" type="checkbox"/> Verbal-Linguistic (Report/ Presentation)	Music-Rhythmic
	Presentation	<input checked="" type="checkbox"/> Mathematical-Logical (Charts/ Graphs)	Interpersonal (Interviews)
	Display	<input checked="" type="checkbox"/> Visual-Spatial (Graphic or Art Design)	Intrapersonal (Your feelings/ Reaction)
	Performance	<input checked="" type="checkbox"/> Body-Kinesthetic (Hands-on)	Extrapersonal (Values, Ethics, Moral Issues)

<b>Project Requirements:</b>		
<b>Taxonomy</b>	6. Language	a) Introduction, b) Description, c) Discussion, d) Conclusions
	7. Mathematics	a) Chart (with numbers)
	8. Visual Design	a) Digital pictures and b) diagrams or drawings of processes
	9. Hands-on	a) 1 ½ hours of Science Lab b) 45 min. of computer lab
	10. Other:	List of what each team member contributed

<b>What not to included in Project:</b>	
4.	Copying from encyclopedia or books
5.	Work from only one group member
6.	Electronic report (You will put the report together with notebook paper)

<b>Specific Steps:</b>	
7. Research	a) Gather ideas on 3"x5" cards
8. Concept Outline	Write outline
9. Charts or Graphs	Create chart
10. Design Analysis	a) Create drawings and b) Print digital pictures
11. Report/ Presentation	Fill in report template by taping, stapling or gluing components onto notebook paper
12. Evaluation	Team Evaluation

<b>Resources Required:</b>	
e) People	
f) Time	1 ½ hours per day for five days
g) Materials	One floppy disk per group
h) Library	On Wednesday
i) Internet	At least 45 minutes in Computer Lab
j) Other	Science Lab time

<b>Goals Measuring Success:</b>	
c)	Report Contents – 35%
d)	Report Labor Chart – 35%
e)	Graphics/ Drawings – 30%

<b>Evaluation/ Rubric:</b>	
d)	All components included - Scale 0 – 4
e)	All team members contributed - Scale 0 – 4
f)	All team members cooperated - Scale 0 – 4
g)	Note: 30 pt. Penalty for any misbehavior or rule breaking

<b>Timeline:</b>					
<b>When Due: 1-15-05</b>	<b>School Days</b>				
<b>Task</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>



<b>Research</b>	<b>x</b>				
<b>Outline</b>		<b>x</b>			
<b>Chart</b>			<b>x</b>		
<b>Pictures</b>				<b>x</b>	
<b>Write Report</b>				<b>x</b>	<b>x</b>
<b>Evaluation</b>					<b>x</b>

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APPENDIX B: Group Project Grading Rubric

**Group Grade**

**Activity:** \_\_\_\_\_

**Today's Date:** \_\_\_\_\_

**Today's Grade:** \_\_\_\_\_

**Directions:**

**1. Choose a leader and a secretary. 10 Points**

**2. Write their names here. 10 Points**

**Leader:** \_\_\_\_\_

**Secretary:** \_\_\_\_\_

**3. Write the other group member's names here: 10 Points**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**4. Talk without getting loud. 30 Points**

**5. Finish answering all the questions. 40 Points**



APPENDIX C: Note-Taking Organizer

Note-Taking Skills

**Directions:** Listen carefully to this program, CD or tape, or, listen as your teacher reads important information. Take notes and so that you remember more. Write on this form.

**Topic/ Subject:** \_\_\_\_\_

**Vocabulary Words to look up:**

_____	_____	_____
_____	_____	_____
_____	_____	_____

**Main Ideas:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Why is this important?**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**What this means to me:**

\_\_\_\_\_

\_\_\_\_\_





APPENDIX D: Portfolio Conference Graphs

Grading Period \_\_\_\_\_ Year \_\_\_\_\_ Class \_\_\_\_\_

Student: \_\_\_\_\_  
\_\_\_\_\_

Conference Date:

GRADE	100%	.	.	.	.	.	.	.	.	.
	90%	.	.	.	.	.	.	.	.	.
	80%	.	.	.	.	.	.	.	.	.
	70%	.	.	.	.	.	.	.	.	.
	60%	.	.	.	.	.	.	.	.	.
	50%	.	.	.	.	.	.	.	.	.
	40%	.	.	.	.	.	.	.	.	.
	30%	.	.	.	.	.	.	.	.	.
	20%	.	.	.	.	.	.	.	.	.
	10%	.	.	.	.	.	.	.	.	.
	0%	.	.	.	.	.	.	.	.	.

ACTIVITY									
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Comments: \_\_\_\_\_



## APPENDIX E: Engaged Learning Indicators

Variable	Engaged Learning Indicator	Indicator Definition
Vision	Responsible for Learning	Students are actively involved in setting goals, choosing tasks, developing assessments, etc. Students have the big picture of learning and the steps in mind.
	Strategic Energized by Learning	Students develop a repertoire of thinking/learning strategies. Students have a passion for learning. They are not dependent upon rewards.
	Collaborative	Students develop new understandings in their conversations and work with others.
Tasks	Authentic Challenging Multidisciplinary	Real world jobs. Jobs are interesting to students. Difficult enough to be interesting, but not totally frustrating. Integrates information from several disciplines to solve problems.
Assessment	Performance-Based Generative Seamless and ongoing Equitable	Performance is for a real audience. Performance serves a real purpose. Assessments mean something to students. Students may produce information, products, services. Students learn during assessment. Assessment is a portion of instruction. Culture fair
Instructional Model	Interactive Generative	Teacher and program are responsive to the students' needs, requests, etc. Instruction is focused upon constructing meaning, providing meaningful activities and experiences.
Learning Context	Collaborative	Students are part of a learning community. Activities are collaborative.
	Knowledge-Building Empathic	Learning experiences are set up to bring many perspectives to solving problems. Learning environment is set up to value diversity, multiple perspectives, and the strengths of students.
Grouping	Heterogeneous Equitable Flexible	Small groups contain students with different ability levels and backgrounds. Groups are organized so that all students get a chance for meaningful learning during some portion of their school year. Groups are organized for different purposes so each student is a member of different groups. Each student works with different people.
Teacher's Roles	Facilitator Guide Co-Learner/Co-Investigator	Engages students. Negotiates, stimulates. Directs project work, but does not control. Helps students construct their own meaning by modeling, mediating, redirecting focus, providing options. Teacher considers himself/herself to be a learner. Teacher is willing to take risks and explore areas outside his/her expertise. Teacher collaborates with other teachers.



<b>Students' Roles</b>	<b>Explorer</b>	<b>Students have the opportunity to explore. Technology tools stretch ideas and research.</b>
	<b>Learning Apprentice</b>	<b>Teachers act as mentors and coaches. Teachers encourage students to do real research.</b>
	<b>Teacher</b>	<b>Students are encouraged to teach others in informal and informal helping sessions.</b>
	<b>Producer</b>	<b>Students develop products of real use for themselves and others.</b>

<b>Variable</b>	<b>Engaged Learning Indicator</b>	<b>Indicator Definition</b>
<b>Access</b>	<b>Connective</b>	<b>Connected to the Internet and other Resources</b>
	<b>Ubiquitous</b>	<b>Equipment is pervasive and conveniently located for individual rather than central use.</b>
	<b>Interconnective</b>	<b>Students and teachers interact by communicating and collaborating in diverse ways.</b>
	<b>Designed for Equitable Use</b>	<b>All students have access to rich, challenging learning. They interact, and they create useful products.</b>

<b>Operability</b>	<b>Interoperable</b>	<b>Capable of exchanging data easily among diverse formats and technologies.</b>
	<b>Open architecture</b>	<b>Allows users to access various vendor's software.</b>
	<b>Transparent</b>	<b>Users are not aware of how the hardware and software operate.</b>

<b>Organization</b>	<b>Distributed</b>	<b>Technology and systems are not centralized, but exist across a number of people, environments, and situations.</b>
	<b>Designed for user conditions</b>	<b>Users can provide input, users can contribute resources on demand.</b>
	<b>Designed for collaborative projects</b>	<b>Technology responds to the user. Teachers are able to diagnose and prescribe new learning.</b>

<b>Engagability</b>	<b>Access to challenging tasks</b>	<b>Technology allows access to tasks, data, and learning opportunities that stimulate thought and inquiry.</b>
	<b>Enables learning by doing</b>	<b>Technology offers access to stimulating, goal-based learning and real-world problems.</b>
	<b>Provides guided participation</b>	<b>Technology responds to the learner, and teacher is able to prescribe new learning.</b>

<b>Ease of Use</b>	<b>Effective helps</b>	<b>Technology provides help that are more than glossaries. The software gives demonstrations of procedures and shows how tasks are performed.</b>
	<b>User friendliness/ User control</b>	<b>The technology is free from overly complex procedures. The technology facilitates the user in acquiring data and tools on demand.</b>
	<b>Fast</b>	<b>The technology has fast processing speed. The technology is not down for long periods of time.</b>
	<b>Available training and support</b>	<b>Training is readily available and convenient. Ongoing support is available.</b>
	<b>Provides just enough information, just in time</b>	<b>Technology allows for random access, multiple points of entry, and different levels and types of information.</b>



<b>Functionality</b>	<b>Diverse tools</b>  <b>Media use</b> <b>Promotes programming and authoring</b> <b>Supports project design skills</b>	<b>Technology enables access to the full diversity of generic information and context-specific tools basic to learning in the 21st century.</b> <b>Technology provides the ability to use multimedia techniques.</b> <b>The technology provides the tools (e.g., coaches, wizards, assistants) that are used to make other tools.</b> <b>The technology facilitates the development of skills related to project design and implementation.</b>
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APPENDIX F: Great Visual Communication

# Great Visual Communication

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The Power of Imagery and  
Multiple Intelligences

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## Visual Learning

- Visual Representation of ideas communicates meaning
- “Visualized” Ideas are remembered
- Is fast -- (Whole) Ideas are transmitted



## Goals: Learn Visual Communication Skills

- Every one has drawn a picture, but this connects to multiple intelligences
- There is a hierarchy of images
  - From the physical to the abstract (words)
- Poetry = (Metaphor) of Images
- Incidental Learning is Retained

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## Overview

- Visual Thinking contributes to higher test scores
- Slides, Posters, Banners are Visual Media
- Words support images
  - Images can't communicate on their own
  - Visual Images without words (or context) are too idiosyncratic

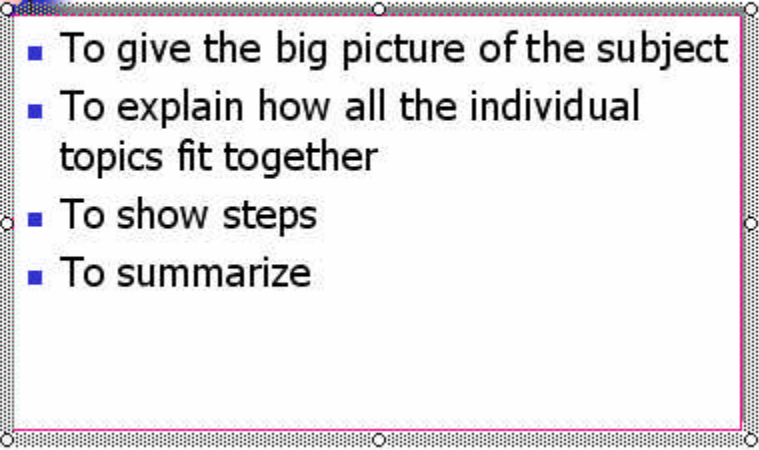
A decorative graphic consisting of overlapping yellow, red, and blue squares with a black crosshair.

## What Makes Good Visual Communication?

- Clear
- Readable
- Says only one thing
- Stays on the subject
- Important
- Interesting
- Simple
- Accurate

A decorative graphic consisting of overlapping yellow, red, and blue squares with a black crosshair.

## Use Visual Communication..

- 
- A rectangular box with a dotted border and small circles at the corners, containing a list of four items.
- To give the big picture of the subject
  - To explain how all the individual topics fit together
  - To show steps
  - To summarize



## Multiple Intelligences

- Visual thinking is one of the multiple intelligences
  - Visual thinking connects with..
    - Math
    - Language
    - Art
    - Performance
  - Visual Exercise re-enforces learning
- 

## Concept Mapping

- Concept Maps -- Quickly
    - Summarize
    - Conceptualize
    - Analyze
    - Synthesize
    - Evaluate
  - Use Concept Maps (everywhere and anywhere) to reinforce learning
-





## Flow Charts

- Are a special type of Concept Map
- Provide paths through decision points
  - Are annotated with questions
- Relate to..
  - Math Steps
  - Hands-on How-to
  - Stage Directions in a Performance

---

## Hands-On Learning

- Real items, samples, models have a visual component
  - You can see them
- Show and Tell
  - Combines visual and performance intelligences
- Watching while doing reinforces learning



## Mathematical Learning

- Graphs of all kinds have a visual component
- Spreadsheets can quickly create graphs from sets of data
- Students benefit from seeing data transform before their eyes

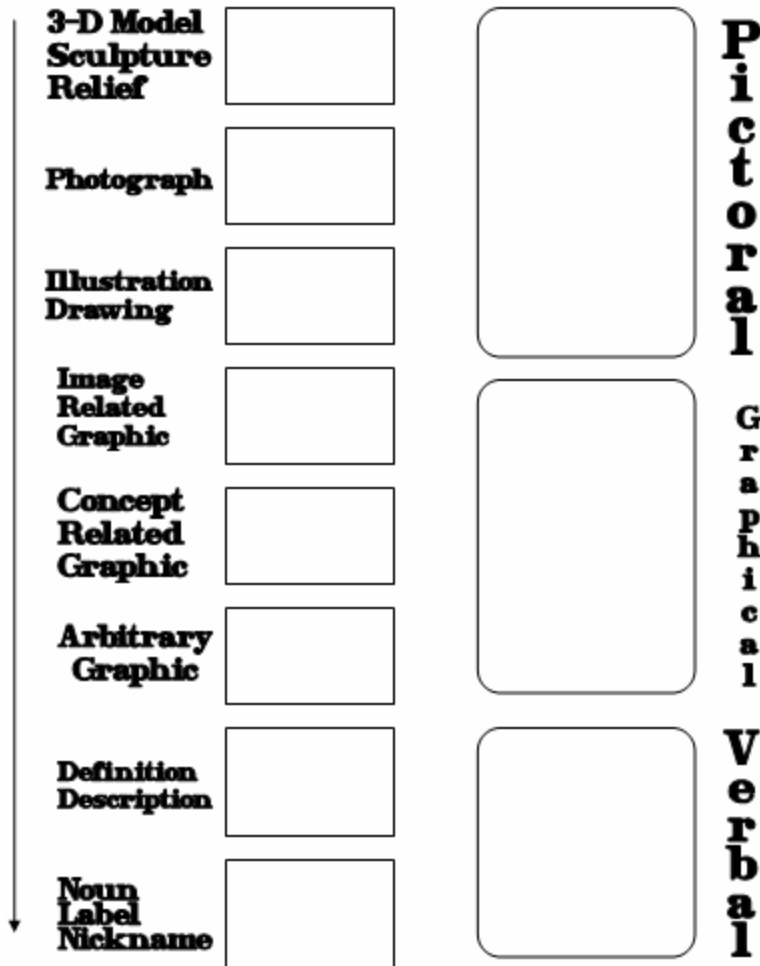
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## Summary

- Visual communication takes learning to a higher level
- Mapping visual tasks to other learning strategies is efficient and effective
- Concept Maps are spectacular learning tools



APPENDIX G: Visual Model





## Appendix H: ISTE Graphic Organizer Links

- 1) [Concept Mapping as a Mindtool for Critical Thinking \(PDE\)](#)(8%)  
2 Copyright © 2001, ISTE (International Society for Technology in Education), 800.336.5191 (U. S. & Canada) or 541.302.3777 (Int'l), iste@ iste. Knowledge representation can take many forms (mental representations)...
- 2) [Making the Invisible Visible and Back Again: Highlighting Technol](#)(8%) - 02/07/2003  
Volume 19 / Number 3 Spring 2003 Journal of Computing in Teacher Education 73 Copyright 2003 ISTE (International Society for Technology in Education), 800.336.5191 (U. S. & Canada) or 541.302.3777 (Int'l),...
- 3) [Universal Design for Learning: An Essential Concept for Teacher E](#)(8%) - 05/07/2003  
org Abstract This article provides an overview of universal design for learning (UDL) and the principles that support it. An example of a problem- based learning unit developed as part of a Preparing...
- 4) [Meeting Psychological Needs in Web-Based Courses for Teachers \(PD\)](#)(7%) - 08/07/2000  
1 Copyright © 2000, ISTE (International Society for Technology in Education), 800.336.5191 (U. S. & Canada) or 541.302.3777 (Int'l), iste@ iste. Strategies to promote belonging include welcome letters,...
- 5) [Project: Electronic Graphic Organizers](#)(7%) - 07/14/2005  
Two local schools, where we routinely place student teachers, are participating in a curriculum development/training project using Kidspiration. A curriculum session, held at RWU, was attended by a teacher...
- 6) <http://teachervision.com/>(7%) - 01/18/2005  
<http://teachervision.com/> An online community of teachers that provides information and resources as well as tools for building classroom Web pages. Their service was designed by teachers, for teachers,...



## Appendix I: Integrating Higher Order Thinking

### Integrating Higher-Order Thinking

Thinking can be inductive (global ideas to specific) or deductive (specific ideas to the general).

When Thinking is practiced enough and integrated into ongoing thought processes, the thinking process becomes so fast that it seems to be intuitive.

When the thinking process moves from discrete items that have to be practiced individually, into the processing of chunks of information; that is, when processing is being assigned to the unconscious; then thinking becomes a habit.

Teachers usually believe that thinking occurs when information is received.

Thinking does not occur until information is processed.

Teachers usually believe that thinking and learning occur due to work.

Actually, thinking and learning is a cycle, and learning occurs due to rest, relaxation and unfocused attention...after attention and focus are applied to thinking tasks.

Teachers must allow time for information to be processed, that is, instead of day (and nights of homework); a more efficient strategy should be employed.

An efficient strategy includes focused and targeted thinking practice, frequent breaks and "mini-vacations" during the school day, change of pace activities to allow information to be investigated using multiple intelligence, and time for information to "incubate."

Time at home should take advantage of unfocused learning, incubation, imagination and creative expression. Time at home should not be devoted to drill.

Students who are excited about the day's classroom learning...when students are engaged, when the learning is relevant...automatically think about and incubate information. When classroom activities are drill for high-stakes testing, students don't give this activity a second conscious thought (or even the unconscious thought) necessary for memory, imagination or creative use of the information.

The process of nurturing, encouraging and teaching the thinking process may be linear at first, but only at first.

This process might be considered to be similar to putting training wheels on a correctly sized bicycle for a new rider.

Strength and skill for the new rider does not develop from leaving the training wheels on the bicycle, or from riding the bicycle only on the sidewalk.



Strength and skill develop from removing the training wheels, from riding up and down hills, from sliding on the driveway (and on the lawn), from riding down steps...

There are 48 Intelligence and Thinking Taxonomy skills listed below.

Teachers can begin priming the thinking process in a linear fashion, but should take the training wheels off as soon as possible. Teachers should allow students to expand their creative, imaginative and intuitive thoughts.

Checklists to help students when they are peddling on their own, and coaching and guidance are all that are required if the teacher comprehends the process, applies these principles, analyzes and evaluates student learning activities, and applies sound judgment.

All this should be conducted in an environment and atmosphere of encouragement.

Teachers will focus upon Verbal-Linguistic, Mathematical-Logical, Visual-Spatial, and Body-Kinesthetic (hands-on) learning.

But the Intrapersonal, Naturalistic and Extrapersonal - Idealistic intelligences focus upon very powerful personal meaning and should also be used.

The power of Music-Rhythmic learning should also be tapped any time that this is possible.

1.0	<b>Basic Verbal- Linguistic Information Practice Cycle</b>	
1.1.0	Knowledge	Define a Verbal-Linguistic Learning Task
1.1.1		State what the problem is
1.1.1.1		Define the problem as a quest for information
1.1.2		Identify information needed in order to complete the task (to solve the information problem)
1.2.0	Comprehension	Understand what a solution will mean
1.2.0.1		Define the solution as understanding the information
1.2.1		Develop a plan for gathering information
1.2.1.1		Develop a list of potential sources (brainstorm)
1.2.2		Sort the different sources to determine research priorities (select the best sources)
1.3.0	Application	Find and record the information
1.3.1		Locate sources of information and capture or record them
1.3.2		Record information into facts and record locations where the facts were found, (such as recording these as notes on index cards)
1.4.0	Analysis	Analyzing the information
1.4.1		Translate information (e.g. information read, heard, viewed, touched, tasted, smelled) is turned into words and concepts
1.4.2		Relevant information is conceptualized and outlined
1.5.0	Synthesis	Put the information together -
1.5.1		Organize the information from multiple sources into one or more logical hypothesis
1.5.2		Present the information as consistent theme or one thought stream



1.6.0	Evaluation	Critique and defend the information
1.6.1		Judge the information product i.e., report or presentation's ability to communicate and capture attention - (awareness)
1.6.2		Judge the soundness of the information product's rationale (credibility)
1.6.3		Judge the information product's viability and usefulness (validity)
1.6.4		Judge the value of the information (relevance)
1.6.5		Judge the importance of the information product (benefits)
1.6.6		Judge the ability of the product to capture imagination (imagery)
1.6.7		Judge what change would improve the knowledge product (suggested improvement and next step)
1.6.8		Judge where the information product fits in with other information (positioning)
1.6.9		Judge the information problem-solving process (efficiency)
1.6.10		Judge the information return for time spent and resources expended and resources expended (Return on Investment)

2.0	<b>Basic Mathematical- Logical Information Practice Cycle</b>	
2.1.0	Knowledge	Define a Mathematical- Logical Learning Task
2.1.1		State what the problem is in mathematical or logical terms
2.1.1.1		Define the problem as a quest for information or a solution
2.1.2		Identify information needed in order to complete the task (to solve the mathematical-logical problem)
2.2.0	Comprehension	Understand what an answer will mean in terms of solution or proof-
2.2.0.1		Define the answer as solving the problem
2.2.1		Develop a plan for solving the problem
2.2.1.1		Develop a list of potential strategies (brainstorm)
2.2.2		Sort the different possible strategies to determine solution priorities (select the best sources)
2.3.0	Application	Start the first strategy and Record the solution
2.3.1		Locate sources of error and mistakes and record them
2.3.2		Record all attempts and identify the strategies that lead to dead ends, as well as the multiple strategies that lead to solutions
2.4.0	Analysis	Analyze the strategies -
2.4.1		Separate strategies into solutions and non-solutions
2.4.2		Map, outline and conceptualize the solutions that are found
2.5.0	Synthesis	Put the workable solutions together -
2.5.1		Organize the solutions and non-solutions (from multiple strategies) into one or more logical hypothesis or proof
2.5.2		Present the information as theme or one thought stream
2.6.0	Evaluation	Critique and defend the solution
2.6.1		Judge the solution i.e., report or presentation's ability to communicate and capture attention - (awareness)
2.6.2		Judge the soundness of the solution's rationale (credibility)
2.6.3		Judge the solution's viability and usefulness (validity)



2.6.4		Judge the value of the solution (relevance)
2.6.5		Judge the importance and practical nature of the solution (benefits)
2.6.6		Judge the ability of the solution to capture other peoples' imagination (imagery)
2.6.7		Judge what change would improve the knowledge product (suggested improvement and next step)
2.6.8		Judge where the solution fits in with other solutions (positioning)
2.6.9		Judge the elegance of the problem-solving process (efficiency)
2.6.10		Judge the solutions' return for time spent and resources expended and resources expended (Return on Investment)

3.0	<b>Basic Visual ~ Spatial Information Practice Cycle</b>	
3.1.0	Knowledge	Diagram or chart a Visual - Spatial learning Task
3.1.1		Demonstrate what the puzzle is in diagram, chart or symbolic terms
3.1.1.1		Define the problem as a quest for a solution to a problem, design, diagram or puzzle
3.1.2		Identify information needed in order to complete the task (to solve the visual - spatial problem or puzzle)
3.2.0	Comprehension	Understand what an answer will mean in terms of a solved puzzle, design, chart, graph or diagram
3.2.0.1		Define the answer as solving the problem
3.2.1		Develop a plan for solving the puzzle or developing the design
3.2.1.1		Develop a chart of potential strategies (brainstorm)
3.2.2		Sort the different possible strategies to determine solution priorities or design flow charts (select the best designs or solutions)
3.3.0		Application
3.3.1	Catalog strategies or designs and record them	
3.3.2	Record all puzzle strategies and design attempts and identify the strategies that lead to dead ends, as well as the multiple strategies that lead to solutions	
3.4.0	Analysis	Analyze the strategies or designs
3.4.1		Separate strategies and designs into useful solutions and designs and non-useful solutions and designs
3.4.2		Map, outline and conceptualize the solutions or designs that are found to be useful
3.5.0		Put the workable solutions or designs together - Synthesis
3.5.1	Evaluation	Organize the solutions and designs and separate non-solutions and ineffective designs to form one or more solution paths
3.5.2		Present the information as one coherent design or consistent theme or thought stream
3.6.0	Evaluation	Critique and defend the solutions or designs
3.6.1		Judge the solution or design i.e., the design or presentation's ability to communicate and capture attention - (awareness)
3.6.2		Judge the soundness of the solution's rationale (credibility)
3.6.3		Judge the solution's viability and usefulness (validity)
3.6.4		Judge the value of the solution (relevance)
3.6.5		Judge the importance and practical nature of the solution (benefits)
3.6.6		Judge the ability of the solution to capture other peoples' imagination (imagery)





3.6.7		Judge what change would improve the knowledge product (suggested improvement and next step)
3.6.8		Judge where the solution or design fits in with other solutions (positioning)
3.6.9		Judge the elegance of the problem-solving process (efficiency)
3.6.10		Judge the solutions or design's return for time spent and resources expended and resources expended (Return on Investment)



4.0	<b>Basic Body - Kinesthetic Information Practice Cycle</b>	
4.1.0	Knowledge	Set up or build the hands-on learning task
4.1.1		Demonstrate what the experiment or project is in models, diagrams, chart or symbolic terms
4.1.1.1		Define the experimental problem as a quest for building a solution or model
4.1.2		Identify information needed in order to complete the task (to build a Body-Kinesthetic model or project)
4.2.0	Comprehension	Understand what an answer will mean in terms of an experiment or project
4.2.0.1		Define the answer as completing the experiment or project
4.2.1		Develop a plan for resolving the experiment or completing the project
4.2.1.1		Develop a checklist of potential experiment or project steps (brainstorm)
4.2.2		Sort the different possible results to determine experiment or project priorities (select the best experimental design or project plan)
4.3.0	Application	Start the experimenting or project stages, track and record the results
4.3.1		Catalog experimental or project results and record them
4.3.2		Record all experimental and project results and identify the experiments and prototypes that lead to dead ends, as well as the multiple strategies that lead to success
4.4.0	Analysis	Analyze the experimental and project plans
4.4.1		Separate strategies and plans into useful results and designs and non-useful results
4.4.2		Map, outline and conceptualize the results that are found to be useful
4.5.0	Synthesis	Put the workable experimental design or project stages together
4.5.1		Organize the experimental designs and project plans, and separate non-solutions and ineffective results multiple, replicable paths
4.5.2		Present the information as one coherent experimental or project report unified with a consistent theme or thought stream
4.6.0	Evaluation	Critique and defend the experimental design or project plan
4.6.1		Judge the experimental design or project plan's ability to communicate and capture attention - (awareness)
4.6.2		Judge the soundness of the solution's rationale (credibility)
4.6.3		Judge the experiment or project plan's viability and usefulness (validity)
4.6.4		Judge the value of the experiment or project plan (relevance)
4.6.5		Judge the importance and practical nature of the experiment or project plan (benefits)
4.6.6		Judge the ability of the solution to capture other peoples' imagination (imagery)
4.6.7		Judge what change would improve the experiment or project plan (suggested improvements and next step)
4.6.8		Judge where the solution fits in with other solutions (positioning)
4.6.9		Judge the elegance of the problem-solving process (efficiency)
4.6.10	Judge the experiment or project plan's ' return for time spent and resources expended and resources expended (Return on Investment)	



5.0	<b>Basic Music ~ Rhythm Information Practice Cycle</b>	
5.1.0	Knowledge	Compose, practice or play the musical- rhythmic, dance or sound patterned learning task
5.1.1		Demonstrate what the musical, rhythmic, dance or sound patterned is through performances, recordings, music notation, choreography, or other symbolic terms
5.1.1.1		Define the musical- rhythmic activities as a quest for creating a performance
5.1.2		Identify information needed in order to complete the task (to build a Music - Rhythmic model or performance)
5.2.0	Comprehension	Understand what an answer will mean in terms of a composition, performance, dance routine or pattern
5.2.0.1		Define the answer as completing the composition, performance, dance routine or pattern
5.2.1		Develop a plan for composing or arranging the music, dance, or pattern
5.2.1.1		Develop a checklist of potential music melodies, rhythms, dance moves or patterns (brainstorm)
5.2.2		Sort the different possible results to determine music, rhythm or dance priorities (select the best musical or dance numbers)
5.3.0		Application
5.3.1	Catalog the compositions, choreographs or patterns performances	
5.3.2	Record all music and dance creations and identify the compositions and choreographs that lead to dead ends, as well as the multiple compositions that lead to success	
5.4.0	Analysis	Analyze the music, dance or patterns
5.4.1		Separate music and dance compositions into useful results and non-useful results
5.4.2		Chart, outline and conceptualize the results that are found to be useful
5.5.0	Synthesis	Put workable music, dance and patterns together to form a complete composition
5.5.1		Organize the music or dance, and separate non-solutions and ineffective results. Develop multiple, replicable movements
5.5.2		Present the compositions one coherent piece, unified with a consistent theme or thought stream
5.6.0	Evaluation	Critique and defend the music, dance or pattern composition or choreograph
5.6.1		Judge the composition's, performance's or pattern's ability to communicate and capture attention - (awareness)
5.6.2		Judge the soundness of the composition's, performance's or pattern's rationale (credibility)
5.6.3		Judge the composition's or performance's viability and usefulness (validity)
5.6.4		Judge the value of the composition or performance (relevance)
5.6.5		Judge the importance and practical nature of the composition or performance (benefits)
5.6.6		Judge the ability of the composition, performance or pattern to capture other peoples' imagination (imagery)
5.6.7		Judge what change would improve the composition, performance or pattern (suggested improvements and next step)
5.6.8		Judge where the composition, performance or pattern fits in with other solutions (positioning)
5.6.9		Judge the elegance of the problem-solving process (efficiency)



5.6.10		Judge the composition's, performance's or pattern's return for time spent and resources expended (Return on Investment)
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6.0	<b>Basic Interpersonal Information Practice Cycle</b>		
6.1.0	Knowledge	Set up or build the interaction learning or relationship learning task	
6.1.1		Demonstrate what the interaction learning or relationship building is through role plays, diagrams, chart or symbolic terms	
6.1.1.1		Define the interpersonal problem as a quest for building a solution or model	
6.1.2		Identify information needed in order to complete the task (to build an interactive learning or relationship model)	
6.2.0		Comprehension	Understand what an answer will mean in terms of an interactive learning or relationship
6.2.0.1	Define the answer as completing the interactive learning or building the relationship		
6.2.1	Develop a plan for understanding and building the interactive learning or relationship building		
6.2.1.1	Develop a checklist of potential interactive learning or relationship building processes (brainstorm)		
6.2.2	Sort the different possible results to determine interactive learning or relationship priorities (select the best design or plan)		
6.3.0	Application		Start the interactive learning or relationship building's stages, track and record the results
6.3.1			Catalog the results of the interactive learning or relationship building and record them
6.3.2		Record all interactive learning and relationship building results and identify the process that lead to dead ends, as well as the multiple strategies that lead to success	
6.4.0	Analysis	Analyze the interactive learning and relationship building processes	
6.4.1		Separate interactive learning and relationship building and associated results into useful results and non-useful results	
6.4.2		Conceptualize and communicate the results that are found to be useful	
6.5.0	Synthesis	Put the workable interactive learning or relationship building processes together	
6.5.1		Organize the interactive learning and relationship building components, and separate non-solutions and ineffective results multiple, replicable paths	
6.5.2		Present the information as one coherent interactive learning or relationship building report unified with a consistent theme or thought stream	
6.6.0	Evaluation	Critique and defend the interactive learning and relationship building	
6.6.1		Judge the interactive learning and relationship building procedures ability to communicate and capture attention - (awareness)	
6.6.2		Judge the soundness of the solution's rationale (credibility)	
6.6.3		Judge the interactive learning and relationship building processor's viability and usefulness (validity)	
6.6.4		Judge the value of the interactive learning and relationship building (relevance)	
6.6.5		Judge the importance and practical nature of the interactive learning and relationship building (benefits)	
6.6.6		Judge the ability of the solution to capture other peoples' imagination (imagery)	
6.6.7		Judge what change would improve the interactive learning and relationship building	
		(suggested improvements and next step)	



6.6.8		Judge where the solution fits in with other solutions (positioning)
6.6.9		Judge the elegance of the problem-solving process (efficiency)
6.6.10		Judge the interactive learning's and relationship building's return for time spent and resources expended and resources expended (Return on Investment)

7.0	<b>Basic Intrapersonal Information Practice Cycle</b>		
7.1.0	Knowledge	Set up or build the emotional learning or personal/ self-improvement task	
7.1.1		Demonstrate what the emotional learning or personal/ self-improvement task is through role plays, diagrams, chart or symbolic terms	
7.1.1.1		Define the Intrapersonal problem as a quest for building a personal solution or model	
7.1.2		Identify information needed in order to complete the task (to build an emotional or personal/ self-improvement models)	
7.2.0	Comprehension	Understand what an answer will mean in terms of an emotion or personal/ self-improvement	
7.2.0.1		Define the answer as completing the emotional learning or building the personal/ self-improvement task	
7.2.1		Develop a plan for understanding and building the emotional learning or personal/ self-improvement	
7.2.1.1		Develop a checklist of potential emotional learning or personal/ self-improvement building processes (brainstorm)	
7.2.2		Sort the different possible results to determine emotional or personal/ self-improvement priorities (select the best design or plan)	
7.3.0		Application	Start the emotional learning or personal/ self-improvement building's stages, track and record the results
7.3.1			Catalog the results of the emotional learning or personal/ self-improvement building and record them
7.3.2	Record all emotional learning and personal/ self-improvement building results and identify the process that lead to dead ends, as well as the multiple strategies that lead to success		
7.4.0	Analysis	Analyze the emotional learning and personal/ self-improvement processes -	
7.4.1		Separate processes and their associated results into useful results and non-useful results	
7.4.2		Conceptualize and communicate the results that are found to be useful	
7.5.0	Synthesis	Put the workable emotional learning or personal/ self-improvement processes together	
7.5.1		Organize the emotional learning and personal/ self-improvement components, and separate non-solutions and ineffective results multiple, replicable paths	
7.5.2		Present the information as one coherent emotional or personal/ self-improvement report unified with a consistent theme or thought stream	
7.6.0	Evaluation	Critique and defend the emotional learning and personal/ self-improvement process	
7.6.1		Judge the emotional learning and personal/ self-improvement procedures ability to communicate and capture attention - (awareness)	
7.6.2		Judge the soundness of the solution's rationale (credibility)	
7.6.3		Judge the emotional learning and personal/ self-improvement processes viability and usefulness (validity)	
7.6.4		Judge the value of the emotional learning and personal/ self-improvement (relevance)	



7.6.5		Judge the importance and practical nature of the emotional learning and personal/ self-improvement (benefits)
7.6.6		Judge the ability of the solution to capture other peoples' imagination (imagery)
7.6.7		Judge what change would improve the emotional learning and personal/ self-improvement (suggested improvements and next step)
7.6.8		Judge where the solution fits in with other solutions (positioning)
7.6.9		Judge the elegance of the problem-solving process (efficiency)
7.6.10		Judge the emotional learning's and personal/ self-improvement's return for time spent and resources expended and resources expended (Return on Investment)

8.0	<b>Basic Extrapersonal Information Practice Cycle</b>	
8.1.0	Knowledge	Set up or build the moral, ethical, values or religious learning task
8.1.1		Describe what the moral, ethical, values or religious task is through metaphor, stories, poems or symbolic terms
8.1.1.1		Define the extrapersonal problem as a quest for building an extrapersonal solution or model
8.1.2		Identify information needed in order to complete the task (to build a moral, ethical, values or religious models)
8.2.0		Comprehension
8.2.0.1	Define the answer as completing the moral, ethical, values or religious task	
8.2.1	Develop a plan for understanding and building the moral, ethical, values or religious task	
8.2.1.1	Develop a checklist of potential moral, ethical, values or religious processes (brainstorm)	
8.2.2	Sort the different possible results to determine moral, ethical, values or religious priorities (select the best design or plan)	
8.3.0	Application	
8.3.1		Catalog the results of the moral, ethical, values or religious learning and record them
8.3.2		Record all emotional learning and personal/ self-improvement building results and identify the process that lead to dead ends, as well as the multiple strategies that lead to success
8.4.0	Analysis	Analyze the moral, ethical, values or religious processes
8.4.1		Separate processes and their associated results into useful results and non-useful results
8.4.2		Conceptualize and communicate the results that are found to be useful
8.5.0	Synthesis	Put the workable moral, ethical, values or religious processes together
8.5.1		Organize the moral, ethical, values or religious components, and separate non-solutions and ineffective results multiple, replicable paths
8.5.2		Present the information as one coherent moral, ethical, values or religious report unified with a consistent theme or thought stream
8.6.0	Evaluation	Critique and defend the moral, ethical, values or religious process
8.6.1		Judge the moral, ethical, values or religious procedures' ability to communicate and capture attention - (awareness)
8.6.2		Judge the soundness of the solution's rationale (credibility)



8.6.3	Judge the emotional moral, ethical, values or religious processes viability and usefulness (validity)
8.6.4	Judge the value of the moral, ethical, values or religious processes (relevance)
8.6.5	Judge the importance and practical nature of the moral, ethical, values or religious changes (benefits)
8.6.6	Judge the ability of the solution to capture other peoples' imagination (imagery)
8.6.7	Judge what change would improve the moral, ethical, values or religious outcomes (suggested improvements and next step)
8.6.8	Judge where the solution fits in with other solutions (positioning)
8.6.9	Judge the elegance of the problem-solving process (efficiency)
8.6.10	Judge the moral, ethical, values or religious improvement's return for time spent and resources expended and resources expended (Return on Investment)

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**Appendix J: Sample Daily Oral Vocabulary with Visual Thesaurus Graphic Organizer**

Invisible	Inconspicuous
	<p><b>not noticeable (adj.)</b>                      not noticeable                      not easily seen                      unremarkable                      not immediately obvious                      ordinary                      subtle                      obvious (Antonym)</p> <p><b>unobtrusive (adj.)</b>                      unobtrusive                      discreet                      unassuming                      quiet                      low-key                      modest                      conspicuous (Antonym)</p>

**Theme: My Place in the Universe**

“I hope that I can be happy here on Earth,” thought Inky.  
 “On the moon that I am from, everyone else was \_\_\_\_\_.”  
 “Here on Earth, it is just the opposite.”  
 “I have to remain \_\_\_\_\_, so that no one discovers that I am an alien.”  
 “That way, I can live my dream of becoming a ‘Super Hero’ like I used to watch on Earth’s television shows that we saw from our moon.”