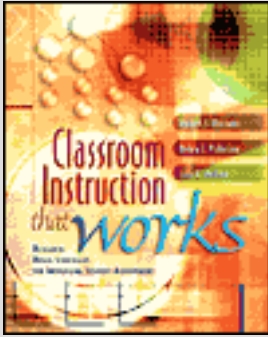


# Instructional Strategies

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The book, **Classroom Instruction that Works** by Robert Marzano, Debra J Pickering, Jane Pollock, describes research-based strategies for increasing student achievement ISBN:0871205041

This guide from ASCD provides some questions that will help guide you through the chapters of the book: An [ASCD Study Guide](#) for Classroom Instruction that Works

This site identifies and provides technology resources which can be used to support the nine instructional strategies:

- [Identifying Similarities and Differences](#)
- [Summarizing and Note Taking](#)
- [Reinforcing Effort and Providing Recognition](#)
- [Homework and Practice](#)
- [Nonlinguistic Representations](#)
- [Cooperative Learning](#)
- [Setting Objectives and Providing Feedback](#)
- [Generating and Testing Hypotheses](#)
- [Questions, Cues, and Advance Organizers](#)

Other Resources:

[MCREL](#)

[Instructional Strategies PowerPoint](#)

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## Cooperative Learning

[About](#)

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

### Summary of Research on Cooperative Learning

- Organizing groups based on ability should be done sparingly.
- Cooperative groups should be kept small in size.
- Cooperative learning should be applied consistently and systematically, but not overused.

Cooperative Learning five defining elements:

1. Positive interdependence
2. Face-to-face interaction
3. Individual and group accountability
4. Interpersonal and small group skills
5. Group processing

### Classroom Practice in Cooperative Learning

- Use a variety of criteria for grouping students.
- Use a variety of group patterns: Informal or ad hoc (last few minutes of a class period), formal (long enough to complete an academic project) and base groups (semester or year, providing students with long-term support).
- Managing group size - keep groups small.
- Combine cooperative learning with other classroom strategies.

### Technology Resources

- Title: **The Great Solar System Rescue, The Great Ocean, Tom Snyder Products**
  - Grade Level: 5-8
  - Curricular Area: Science
  - Description: Students must use cooperative learning in order to solve the problems presented.
  - Website link: <http://www.tomsnyder.com>
- Title: **WebQuests**
  - Grade Level: All grade levels
  - Curricular Areas: All content areas
  - Website link: <http://webquest.org>

- Title: **George Lucas Foundation Instructional Module**
  - Grade Level:
  - Curricular Area:
  - Description: These activities introduce the participants to numerous educational Websites. They promote Internet use with all grade levels.
  - Website Link: <http://www.edutopia.org/modules/TI/resources.php>

## Software Applications

- Title: **Word Processing**
  - Grade Level:
  - Curricular Area:
  - Description: Students can collaborate, share information and peer edit using the Comments or Track Changes features. Students can collaborate writing progressive stories.
  - Resources: MS Word
  - Website Link: <http://www.microsoft.com/education>
  
- Title: **Email**
  - Grade Level:
  - Curricular Area:
  - Description: Students could join e-pal projects, share documents via attachments.
  - Resources:
  - Website Link: Gaggle email - <http://www.gaggle.net> - provides teacher-controlled email student accounts for them to exchange and share information.
  
- Title: **Multimedia Project**
  - Grade Level:
  - Curricular Area:
  - Description:
  - Resources (Files, Websites, etc.): Slide show, movie editing, graphics applications.
  - Website Link: [Microsoft PowerPoint](#)
  - Website Link: [Apple iMovie](#)
  - Website Link: [Adobe Premiere Elements](#)
  - Website Link: [Appleworks](#)
  - Website Link: [Macromedia Fireworks](#)
  - Website Link: [Adobe Illustrator](#)
  - Website Link: [Adobe Photoshop Element](#)
  
- Title: **Web page editing**
  - Grade Level:
  - Curricular Area:
  - Description:
  - Resources:
  - Website Link: Manila - <http://manila.userland.com/> to share information.

- Title: **Spreadsheets**
    - Grade Level:
    - Curricular Area:
    - Description:
    - Resources: Microsoft Excel
    - Website Link: <http://www.microsoft.com/education>
  
  - Title: **Resources**
    - Grade Level:
    - Curricular Area: any
    - Description: **Screen Timer** allows teachers to set a timer on their computer screen. This is especially helpful when doing cooperative learning activities.
    - Resources:
    - Website Link: <http://www.ncrtec.org/timer/>
  
  - Title: **Resources**
    - Grade Level:
    - Curricular Area: any
    - Description: **Virtual Timer** allows teachers to set a timer on their computer screen. This is especially helpful when doing cooperative learning activities.
    - Resources:
    - Website Link: <http://www.timeme.com/timer.htm>
-

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## Generating and Testing Hypotheses

[About](#)

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

### Summary of Research on Generating and Testing Hypotheses

- Hypothesis generation and testing can be approached in an inductive or deductive manner. In general, students produce better results when using the deductive thinking process.
  - Deductive thinking requires students to apply current knowledge to make a prediction about a future action or event.
  - Inductive thinking involves students in a process of drawing new conclusions based on information they know or have presented to them.
- Teachers should ask students to clearly explain their hypotheses and their conclusions. Research has shown the power of asking students to explain, in a variety of communication modes, their predictions and results.

---

### Classroom Practice in Generating and Testing Hypotheses

- Even though the process of generating and testing hypotheses is most often applied in the science curriculum, teachers should be encouraged to implement the following tasks across all disciplines. Use a variety of structured tasks to guide students through generating and testing hypotheses.
  - Systems Analysis-Create activities that ask students to evaluate the parts of a system and generate hypotheses to predict changes if a part of the system was altered.
  - Problem Solving-Using their knowledge of concepts related to the problem, students evaluate different approaches to a solution and then generate and test their hypotheses.
  - Historical Investigation-Engage students in historical investigations by having them create reasonable scenarios of past events for which there is no general agreement.
  - Invention-Pose an existing problem to students that requires them to develop solution to the problem. Invention often leads to the generation and testing of multiple hypotheses.
  - Experimental Inquiry-"The Scientific Method" Create activities that

- promote student use of the scientific method across all disciplines.
- Decision Making-Incorporating the use of a structured decision-making framework can help examine results of hypothesis testing.
- Ask students to explain their thinking as they test and generate hypotheses.

---

### Technology Resources

- Title: [System Analysis](#)  
Grade Level(s): All  
Curricular Area(s): Science, Math, Economics, Social Studies  
Description: study ecosystems, human systems, systems of government, and transportation, etc. Marzano recommends students:
  1. Explain the purpose of the system, the parts and functions of each part of the system;
  2. Describe how the parts affect each other;
  3. Hypothesize what would happen if a part of the system were changed;
  4. Test the hypothesis if possible.
- Resources:
  - systems to study wetlands with digital cameras - <http://www.wetlands.org/>
  - Visit [UEN's Themepark](#) for a collection of resources dealing with a variety of systems.
  - [Marcopolo Search Results for System Analysis](#)
- Title: [Problem Solving](#)  
Grade Level(s): All  
Curricular Area(s): All  
Description:  
Resources
  - Build an egg container to survive a fall from two stories. Videotape the fall and examine why container worked or failed - <http://www.apple.com/education/dv/gallery/mov2.html>
  - Have students create their own rollercoaster at [Amusement Park Physics](#). Students must use information and knowledge to build a rollercoaster.
  - [Marcopolo search results for Problem Solving](#)
- Title: [Historical Investigation](#)  
Grade Level(s): All  
Curriculum Area(s): All  
Description:  
Resources:

- Use PDF documents of old newspapers and Internet research to study a historical event - The American Memory Project At the Library of Congress - <http://memory.loc.gov/>
- Students can begin to understand how historians investigate past events at [You Be the Historian](#).
- [The Learning Page](#) from The Library of Congress is a great starting point to find lesson plans utilizing historical information.
- [Marcopolo search results for Historical Investigation](#)
- Title: [Invention](#)  
 Grade Level(s):  
 Curricular Area(s):  
 Description:  
 Resources:
  - Study cardiovascular systems through simulations to develop a new form of exercise to solve the problem- <http://web.mit.edu/invent/www/InvenTeam/InventionProcess/>
  - Students can create their own contraption at [Invention at Play](#).
  - [Kids Design Network](#) provides a setting for teachers to challenge students to create a specific product and seek advice from an engineer.
  - [Marcopolo search results for Invention](#)
- Title: [Experimental Inquiry](#)  
 Grade Level(s): All  
 Curricular Area(s): All  
 Description: Scientific Method  
 Resources:
  - Scientific probes and PDAs - <http://www.imagiworks.com/>
  - Data-collectin technology for science and math educators <http://www.vernier.com/>
  - Genetics simulation - <http://biologica.concord.org/>
  - Students apply their understanding of gravity to recreate a comet crashing into Jupiter at [Planet Impact](#).
  - Have students create their own rollercoaster at [Amusement Park Physics](#). Students must use information and knowledge to build a rollercoaster.
  - Students can create their own contraption at [Invention at Play](#).
  - [Kids Design Network](#) provides a setting for teachers to challenge students to create a specific product and seek advice from an engineer.
  - [Marcopolo search results for Experimental Inquiry](#)
- Title: [Decision Making](#)  
 Grade Level(s): All

Curricular Area(s): All

Description:

Resources:

- Predict and justify decisions. Example: determine the most influential musical group of the past 5 years - <http://www.rockonthenet.com/charts/>
  - Students can participate in the decision making process using Tom Snyder's [Decisions, Decisions](#) series. Available as an [online subscription](#) or on CD.
  - Teach students the decision-making process, including selecting items with the "most" or "least" of something using this [Decision Making Grid](#) (created in Excel).
  - [Marcopolo search results for Decision Making](#)
-

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## Homework and Practice

[About](#)

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

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### Summary of Research on Homework

- Less homework should be assigned to younger students than to older students.
- Parent involvement in homework should be kept to a minimum.
- The purpose of homework should be identified and articulated.
- If homework is assigned, it should be commented on.

---

### Classroom Practice in Assigning Homework

- Establish and communicate a homework policy.
- Design homework assignments that clearly articulate the purpose and outcome.
- Vary the approaches to providing feedback.

---

### Summary of Research on Practice

- Mastering a skill requires a fair amount of focused practice.
- While practicing, students should adapt and shape what they have learned.

---

### Classroom Practice Regarding Practicing Skills

- Students should be encouraged to keep track of their speed and accuracy.
- Design practice assignments that focus on specific elements of a complex skill or process.
- Plan time for students to increase their conceptual understanding of skills or processes.

---

### Technology Resources

Title: **Homework Research and Policy (University of Minnesota)**

Grade Level(s): All

Curricular Area(s): All

Description: Data show that homework accounts for about 20 percent of the total time the

typical American student spends on academic tasks . . . considering this fact, it is surprising how little attention is paid to the topic of homework in teacher education.

Resources (Files, Websites, etc.):

- Website Link: [Homework Research](#)
- 

Title: **Use a spreadsheet application to chart homework speed and accuracy**

Grade Level(s): All

Curricular Area(s): All

Description: Learn how to gather and then analyze real-world data from different sources, including text files, databases, and the Web.

Resources (Files, Websites, etc.):

- Website Link: [Analyzing Data Using Excel 2002 Tutorial](#)
- 

Title: **Use PDAs to beam homework assignments**

Grade Level(s): All

Curricular Area(s): All

Description: The following tutorial movies at Atomic Learning will give you a good introduction to basic operations and skills in using a palmOne handheld and help you get started with many of the built-in applications. Click item 12 to discover how to beam information.

Resources (Files, Websites, etc.):

- Website Link: [Introduction to Palm OS](#)
- 

Title: **Post homework assignments on teacher webpage or other student information management system**

Grade Level(s): All

Curricular Area(s): All

Description:

Resources (Files, Websites, etc.): Assign-a-Day <http://assignaday.4teachers.org/>

---

Title: **Use assistive technology devices**

Grade Level(s): All

Curricular Area(s): All

Description:

Resources (Files, Websites, etc.):

- Website Link: [Leap Frog](#)
- Website Link: [Attainment](#)
- Website Link: [Learning Advantage](#)
- Website Link: [Creative Teacher](#)

---

Title: **Weekly Homework Chart**

Grade Level(s): All

Curricular Area(s): All

Description:

Resources (Files, Websites, etc.): [http://pbskids.org/itsmylife/school/time/print\\_homework\\_chart.html](http://pbskids.org/itsmylife/school/time/print_homework_chart.html)

---

Title: **Multiplication Practice**

Grade Level(s): 3-4

Curricular Area(s): Math

Description:

Resources (Files, Websites, etc.): <http://www.teachingtables.co.uk/timetable/tgame1.html>

---

Title: **Study Buddy**

Grade Level(s): K-12

Curricular Area(s): all

Description: Get homework help faster and easier - try StudyBuddy.com

Resources (Files, Websites, etc.): <http://homework-help.aol.com/>

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## Nonlinguistic Representations

[About](#)

Please note: ASCD has the chapter about [Nonlinguistic Representations](#) in full-text on their web site.

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Summary from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

### Summary of Research on Nonlinguistic Representations

- A variety of activities produce nonlinguistic representations.
  - Creating graphic representations.
  - Generating mental pictures.
  - Drawing pictures and pictographs.
  - Engaging in kinesthetic activity.
- Nonlinguistic representations should elaborate on knowledge.  
To download a powerpoint presentation on this strategy click this link: [Powerpoint](#)

---

### Classroom Practice in Nonlinguistic Representation

- Graphical organizers are the most common way to help students generate nonlinguistic representations.
- Other nonlinguistic representations include physical models, generating mental pictures, drawing pictures and pictographs, and engaging in kinesthetic activity.

---

### Technology Resources

Title: **4-Dimensional Vocabulary Model**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Template: [4-Dimensional Vocabulary](#) (describes what belongs in each section of the template)- 29K - Microsoft Word
  - Blank Template: [4-DBlank](#) - 28 K - Microsoft Word
  - Example: 4-Dimensional template using the word [ban](#) - 28K - Microsoft Word
-

Title: **Online Dictionaries**

Grade Level(s):

Curricular Area(s): All

Description:

Resources (Files, Websites, etc.):

- Website Link: [Webster Dictionary](#)
  - Website Link: [Student Dictionary](#)
- 

Title: **Laura Ingalls Wilder WebQuest**

Grade Level(s):

Curricular Area(s):

Description: Laura Ingalls Wilder - A WebQuest making use of Non-linguistic Representations

Resources (Files, Websites, etc.):

- Website Link: [Laura Ingalls Wilder WebQuest](#)
- 

Title: **Planets**

Grade Level(s):

Curricular Area(s):

Description: Graphic organizer to help with the planets.

Resources (Files, Websites, etc.):

- [Inner and Outer Planets](#) - 26K - Microsoft Word Document
  - [Planets](#) - 192K - Inspiration Document
- 

Title: **Creating Posters**

Grade Level(s):

Curricular Area(s):

Description: Handout on Creating Posters with Appleworks 6 and Excel shows how to enlarge graphic organizers for classroom display.

Resources (Files, Websites, etc.):

- Instructions: [Creating Posters with Appleworks 6](#) - 104 K - PDF Document

- Instructions: [Creating Posters with Excel](#) - 28 K - PDF Document
- 

Title: **Graphic Organizers**

Grade Level(s):

Curricular Area(s):

Description: Web sites with electronic templates.

Resources (Files, Websites, etc.):

- Web Link: [edhelper.com - Graphic Organizers](#)
  - Web Link: <http://edweb.tusd.k12.az.us/Templates/nonlinguisticrepresentations.htm>
  - Web Link: <http://www.sdcoe.k12.ca.us/score/actbank/torganiz.htm>
  - Web Link: eduPlace graphic organizers  
<http://www.eduplace.com/graphicorganizer/>
- 

### Software Applications

Title: **Microsoft PowerPoint**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Website Link: [Microsoft PowerPoint](#)
- 

Title: **Inspiration Software Inc.**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Website Link: [Inspiration](#)
  - Website Link: [Kidspiration](#)
-

Title: **IMHC Concept Mapping**

Grade Level(s):

Curricular Area(s):

Description: IMHC Concept Mapping is a tool created by the Institute for Human and Machine Cognition at the University of West Florida Licenses are free to educational institutions.

Resources (Files, Websites, etc.):

- Website Link: [IMHC Concept Mapping](#)
- 

Title: **Movie Editing**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Website Link: [Apple iMovie](#)
  - Website Link: [Microsoft MovieMaker](#)
  - Website Link: [Adobe Premiere Elements](#)
- 

Title: **Graphics Applications**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Website Link: [Appleworks](#)
  - Website Link: [Macromedia Fireworks](#)
  - Website Link: [Adobe Illustrator](#)
  - Website Link: [Adobe Photoshop Elements](#)
- 
-

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## Questions, Cues, and Advance Organizers

[About](#)

from [Classroom Instruction that Works](#) Robert J. Marzano, Debra, J. Pickering, JaneE. Pollock, MCREL, 2001.

---

### Summary of Research on Cues and Questions

- Cues and questions should focus on what is important as opposed to what is unusual.
- "Higher level" questions produce deeper learning than lower level questions.
- "Waiting" briefly before accepting responses from students increases the depth of student answers.
- Questions are effective learning tools even when asked before a learning experience.

---

### Classroom Practice in Cues and Questions

- Explicit cues provide students with a preview of what they are about to experience.
- Questions that elicit inferences help students "fill-in" missing information.
- Analytic questions help students critique information. The types of analysis are analyzing errors, constructing support, and analyzing perspectives.

---

### Summary of Research on Advance Organizers

- Advance Organizers should focus on what is important as opposed to what is unusual.
- "Higher level" advance organizers produce deeper learning than the "lower level" advance organizers.
- Advance Organizers are most useful with information that is not well organized.
- Different types of advanced organizers produce different results.

---

### Classroom Practice in Advance Organizers

- Expository advance organizers describe new content.
  - Narrative advance organizers present information in story format.
  - Graphic advance organizers provide nonlinguistic representations.
  - Skimming before reading is a form of advance organizer.
-

## Technology Resources

Title: **Use Inspiration to create a graphic advance organizer**

Grade Level(s):

CurricularArea(s): All

Description: Learn to use Inspiration software to create a graphic advance organizer.

Resources (Files,Websites, etc.):

- Website Link: [Inspiration](#)
  - Website Link: [Kidspiration](#)
- 

Title: **PowerPoint or AppleWorks slide show**

Grade Level(s):

CurricularArea(s): All

Description: Learn to use a PowerPoint or Appleworks slideshow as an advance organizer.

Distribute the slideshow to students in advance to help them prepare for the topic. Let students use the Notes screen in PowerPoint to type responses to questions posed in the slideshow. The notes pages can then be printed, or the slideshow could be sent back to the teacher with the notes attached.

Resources (Files,Websites, etc.):

- Website Link: [Appleworks](#)
  - Website Link: [Microsoft PowerPoint](#)
- 

Title: **Microsoft Word Tables**

Grade Level(s):

CurricularArea(s): All

Description: Learn to use Microsoft Word Tables to create a KWL (Know, Wonder, Learned) chart.

Resources (Files,Websites, etc.):

- PDF file instructions: [KWL\\_chart\\_Word](#)
- 

Title: **Highlighters**

Grade Level(s):

CurricularArea(s): All

Description: Learn to use a highlighter tool in Microsoft Word to point out important topics.

Resources (Files,Websites, etc.):

---

Title: **Partial outlines or fill-in-the-blank guides for note taking**

Grade Level(s):

CurricularArea(s): All

Description: Create a partial outline in a word processor, so that learners can fill in remaining topics as they are learned. Use a fill-in-the-blank guide to help learners take notes.

Resources (Files,Websites, etc.):

---

Title: **Web Quests**

Grade Level(s):

CurricularArea(s): All

Description: Use a Web Quest to help introduce a new topic.

Resources (Files,Websites, etc.):

- Web site: [WebQuest](#)
- 

### Web sites

Title: **Graphic Organizers**, *from the Teaching Resources File Cabinet of Laura Candler*

Grade Level(s): All

CurricularArea(s): All

Description: Downloadable PDF files of Blank Venn Diagram, Know-Wonder-Learned (KWL) chart, Writing Web Idea Organizer

Resources (Files,Websites, etc.): [Laura Chandler's Teaching Resources - Graphic Organizers](#)

---

Title: **Advance & Graphical Organizers: Proven Strategies Enhanced through Technology**, *by John Hendron, Goochland County Public Schools*

Grade Level(s): All

CurricularArea(s): All

Description: Good explanation of Advance Organizers and examples in the form of templates for AppleWorks and Inspiration.

Resources (Files,Websites, etc.): [Advance & Graphical Organizers](#)

---

Title: **KWLH (Know, Wonder, Learned, How to learn more) Chart** *technique by NCREL*

Grade Level(s): All

CurricularArea(s): All

Description: Explanation and example of KWLH chart.

Resources (Files,Websites, etc.): [KWLH chart](#)

---

Title: **Digital Edge Learning Interchange, Teaching Methods—Advance Organizers**, *from the Apple Learning Interchange site*

Grade Level(s): All

CurricularArea(s): All

Description: More information (including movies of how to use) on these tools:

- KWL (Know, Want to Know, Learn) charts
- Four quadrants
- Sort and predict
- Venn diagrams
- Brainstorm and categorize
- Going for the big ideas
- Concept mapping

Resources (Files,Websites, etc.): [Advance Organizers](#)

---

Title: **The Big 6**

Grade Level(s): All

CurricularArea(s): All

Description: The Big6 is an information literacy model. Some people call it a metacognitive scaffold, or an information problem solving strategy. Developed by Mike Eisenberg and Bob Berkowitz, the Big6 is the most widely-known and widely-used approach to teaching information and technology skills in the world. When you apply the Big6 steps, you have an essential framework to approach any information-based question.

Resources (Files,Websites, etc.): [The Big 6 website](#)

---

Title: **Searching Strategies**

Grade Level(s): All

CurricularArea(s): All

Description: Internet search skills need to be taught; they are not intuitive to students. Internet searching is an essential skill for many *Questions, Cues and Advance Organizer* strategies.

Resources (Files,Websites, etc.):

[Searching the Internet](#) website

[Search Strategies](#) website

[Venn Diagram for Boolean Logic](#) website

[Search Strategies: Tips for working with databases](#) website

[Teaching Search Strategies Using Yahoooligans](#) website

---

Title: **Questioning**, *from Jamie McKenzie's "From Now On" page*

Grade Level(s): All

CurricularArea(s): All

Description: Learn all the different types of questions, and strategies on how to pursue all types of questions. Technology resources and tools can help the process.

Resources (Files,Websites, etc.):

From Now On [Questioning](#) website

[Module maker](#)

[Research Cycle](#)

[Questioning Toolkit](#)

---

Title: **Graphic Organizers** *from eduplace.com - The Education Place*

Grade Level(s): All

CurricularArea(s): All

Description: Downloadable PDF files of dozens of different charts to use as graphic organizers.

Resources (Files,Websites, etc.):\_

[The Education Place website on graphic organizers](#)

---

Title: **Anticipation Guides**

Grade Level(s): All

CurricularArea(s): All

Description: An anticipation guide helps to establish prior knowledge of a topic before reading and helps to set a purpose for the reading.

Resources (Files,Websites, etc.):\_

[Description, purpose and examples of anticipation guides](#)

---

Title: **Kagan Smart Cards**

Grade Level(s): All

CurricularArea(s): All

Description: These colorful, glossy, quick reference cards are terrific resources you'll want to keep within arm's reach; you'll turn to these SmartCards time and time again! These 8.5" x 11" SmartCards unfold to 11" x 17". Each card is loaded with ideas, activities, strategies, theory, and rationale to keep your classroom and your teaching on the cutting edge. Look for Graphic Organizer, Questioning, Memory and other cards related to Instructional Strategies.

Resources (Files,Websites, etc.):

[Kagan Online Catalog](#)

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## Reinforcing Effort and Providing Recognition

[About](#)

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

---

### Summary of Research on Reinforcing Effort

- People generally attribute success at any given task to one of four causes: ability, effort, other people and luck.
- Not all students realize the importance of believing in effort.
- Students can learn to change their beliefs to an emphasis on effort.

---

### Classroom Practice in Reinforcing Effort

- Teach and exemplify the connection between effort and achievement.
- Students can see the connection between effort and achievement by periodically keeping track of their effort and its relationship to achievement,

---

### Summary of Research on Providing Recognition

- Rewards do not necessarily have a negative effect on intrinsic motivation.
- Reward is most effective when it is contingent on the attainment of some standard of performance.
- Abstract symbolic recognition is more effective than tangible rewards.

---

### Classroom Practice in Providing Recognition

- Make the recognition as personal to the student as possible.
- The Pause, Prompt and Praise strategy of providing recognition is best used when students are engaged in a particularly demanding task.
- Concrete, symbolic tokens of recognition should be given for accomplishing specific performance goals.

---

### Technology Resources

Title: Extra Effort  
Grade Level(s):  
Curricular Area(s):

Description: Websites of heroes, admired athletes, politicians, musicians or others who became successful with extra effort.

Resources (Files, Websites, etc.): - [Famous people who had dyslexia](#) (Thomas Edison, Albert Einstein, Cher, George Burns and others).

---

Title: Kids Bookshelf

Grade Level(s):

Curricular Area(s):

Description: KidsBookshelf publishes original book reviews, poems, and short stories of no more than 1,000 words.

Resources (Files, Websites, etc.): [Kids Bookshelf](#)

---

Title: Rubrics

Grade Level(s):

Curricular Area(s):

Description: Use a rubric to help assess effort or achievement.

Resources (Files, Websites, etc.):

Create a rubric:

- Use a table in word processing
- Use a spreadsheet
- [RubiStar \(http://hprtec.org\)](http://hprtec.org)
- [Rubric Builder \(http://landmark-project.com\)](http://landmark-project.com)

Rubric Collections:

- [a href="http://school.discovery.com/schrockguide/assess.html#rubrics" target="\\_blank">School Discovery Collection \(http://school.discovery.com/schrockguide/assess.html#rubrics\)](http://school.discovery.com/schrockguide/assess.html#rubrics)
- [Collectionhttp://www.okaloosa.k12.fl.us/technology/training/tools/rubrics.htm](http://www.okaloosa.k12.fl.us/technology/training/tools/rubrics.htm)

## [Effort Rubric Examples](#)

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Title: Award certificates

Grade Level(s):

Curricular Area(s):

Description: Create award certificates.

Resources: Microsoft Word, AppleWorks or iWorks templates, <http://www.microsoft.com/education/MonthCertArchive.msp>,

Article on creating certificates: <http://www.computercompanion.com/LPMArticle.asp?ID=226>

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Title: Charts

Grade Level(s):

Curricular Area(s):

Description: Chart personal progress by tracking effort and/or achievement

Resources (Files, Websites, etc.):

Use personal data to create a spreadsheet with Excel, AppleWorks or iWorks.

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Title: Recognition on classroom or district website or newsletter

Grade Level(s):

Curricular Area(s):

Description: Provide students' recognition in newsletters or on websites (use caution with photos on the web used with student names).

Resources (Files, Websites, etc.):

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Title: Recognition by e-mail

Grade Level(s):

Curricular Area(s):

Description: Give students' recognition by e-mailing their parent(s)/guardian(s).

Resources: e-mail programs

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

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# Instructional Strategies

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## Setting Objectives and Providing Feedback

[About](#)

from [Classroom Instruction that Works](#) Robert J. Marzano, Debra, J. Pickering, Jane E. Pollock, MCREL, 2001.

### Summary of Research on Setting Objectives

- Instructional goals/objectives narrow what students focus on.
- Instructional goals/objectives should not be too specific.
- Students should be encouraged to personalize the teacher's goals.

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### Classroom Practice in Setting Objectives

- Goals should be general enough to provide students some flexibility.
- Contracts with students provide them with a great deal of control over their learning.

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### Summary of Research on Providing Feedback

- Feedback should be "corrective" in nature by explaining to students what they are doing correctly and incorrectly.
- Feedback should be specific to a criterion.
- Feedback should be timely.
- Students can effectively provide some of their own feedback.

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### Classroom Practice in Providing Feedback

- Criterion-reference feedback is superior to norm-referenced feedback.
- Focus feedback on specific types of knowledge and skill.
- Student-led feedback has many desirable effects.

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### Technology Resources

- Setting goals and objectives
  - Rubrics software
    - RubiStar- <http://rubistar.4teachers.org/index.php>

- Rubricator - <http://www.rubrics.com/>
- Microsoft Office (Especially Word tables or Excel worksheets)
- iWorks
- Feedback
  - Rubrics software
    - RubiStar- <http://rubistar.4teachers.org/index.php>
    - Rubricator - <http://www.rubrics.com/>
    - Microsoft Office (Word tables or Excel worksheets)
    - iWorks
  - Online Assessments
    - Quia - <http://www.quia.com/>
    - QuizStar - <http://quizstar.4teachers.org/>
    - myelearning.org (course management software in general)
    - Illuminations - <http://illuminations.nctm.org/>
  - Excel files (data validation, project based learning activities, etc)
  - Microsoft Word & Acrobat 6.0 or higher (insert comments)
  - [Enhancing Education @ Carnegie Mellon](#)
  - In Time - <http://www.intime.uni.edu>
  - Quicktionary Reading Pen - <http://www.wizcomtech.com>
  - Franklin Spell Checker - <http://www.franklin.com>
  - Palms
    - HiCe - <http://palm.hice-dev.org/>, <http://www.goknow.com>
    - ImagiWorks - <http://www.imagiworks.com/index6.html>
  - Inspiration/Kidspiration - <http://www.inspiration.com/home.cfm>
  - Word processing to create KWL template
- Clickers, User Response Systems
  - [Quizdom](#)
  - [eInstruction](#)
  - [Promethean](#)

# Instructional Strategies

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## Identifying Similarities and Differences

[About](#)

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, JaneE. Pollock, MCREL, 2001.

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### Summary of Research on Identifying Similarities and Differences

- Guidance in identifying similarities and differences enhances students' understanding of and ability to use knowledge.
- Independently identifying similarities and differences enhances students' understanding of and the ability to use knowledge.
- Representing similarities and differences in graphic or symbolic form enhances students' understanding of and ability to use knowledge.
- Identifying similarities and differences can be accomplished in a variety of ways: comparing, classifying, creating metaphors, and creating analogies.

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### Classroom Practice in Identifying Similarities and Differences

- The key to effective comparison is the identification of important characteristics.
- Organizing elements into groups based on their similarities is the basis of classifying.
- The key to constructing a metaphor is to realize that the two items in the metaphor are connected by an abstract or nonliteral relationship.
- Analogies help us see how seemingly dissimilar things are similar, increasing our understanding of new information. The typical use a "blank is to blank" as "blank is to blank" type of comparison but can also be diagramed.

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### Technology Resources

Title: **Graphic Organizers**

Grade Level(s): K-12

Curricular Area(s): All

Description: Web sites with electronic templates.

Resources (Files, Websites, etc.):

- Website Link: [edhelper.com](http://edhelper.com)- [Graphic Organizers](#)

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### Software Applications

Title: **Microsoft PowerPoint**

Grade Level(s): 3-12  
Curricular Area(s): All  
Description:  
Resources (Files, Websites,etc.):

- Website Link: [MicrosoftPowerPoint](#)
- 

Title: **Inspiration Software Inc.**

Grade Level(s): k-12  
CurricularArea(s): All

Description: Inspiration K-12 and Kidspiration support visual thinking techniques, enabling students to easily create and update graphic organizers, concept maps and idea maps.

Resources (Files, Websites,etc.):

- Website Link: [Inspiration](#)
  - Website Link: [Kidspiration](#)
- 

Title: **Movie Editing**

Grade Level(s): Jr-Sr High

Curricular Area(s): Language Arts, Science, Art

Description:

Resources (Files, Websites,etc.):

- Website Link: [Apple iMovie](#)
  - Website Link: [Microsoft MovieMaker2](#)
  - Website Link: [Adobe Premiere Elements](#)
- 

Title: **Graphics Applications**

Grade Level(s): k-12

Curricular Area(s): Language Arts, Science, Art

Description:

Resources (Files, Websites,etc.):

- Website Link: [Appleworks](#)
- Website Link: [iWorks](#)
- Website Link: [Macromedia Fireworks](#)
- Website Link: [Adobe Illustrator](#)
- Website Link: [Adobe Photoshop Elements](#)

## Downloads

- [Using Word to Create Tables](#) guide
- [Comparison Matrix](#) sample (MS Word file)

- [Comparison Matrix - 2 items sample](#) (MS Word file)
  - [Creating Venn Diagram with Word](#) (MS Word file)
  - Handout on [Creating Posters with Excel](#) shows how to enlarge Venn Diagram for classroom display (pdf file)
  - [Creating Venn Diagram with Appleworks](#) (pdf file)
  - Handout on [Creating Posters with Appleworks 6](#) shows how to enlarge Venn Diagram for classroom display (pdf file)
  - [Venn Diagram 2 Circles](#) (MS Word file)
  - [Another Way to Say It](#) table (MS Word file)
  - [Graphic Organizer for Analogies](#) sample (MS Word file)
  - [First Ladies](#) example of similarities and differences. Obtain information for this activity from the [First Ladies of USA](#) web site.
  - Inspiration - download a free trial at [Inspiration.com](#)
  - [Objects](#) Classifying objects - an Inspiration file. To download this file right-click (Windows computer) or [ctrl]-click (Macintosh computer) on [Objects](#), save file to your computer, then open with Inspiration.
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### **Multiples of 2 and 3**

- Illuminations - [Product Game](#)
  - Venn diagram for [multiples of 2 and 3](#)
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### **Online Tools for Similarities and Differences:**

- Marco Polo's Read-Write-Think: [Venn Diagram, 2-circle](#)  
Click on "Interactive Tool" to get the online venn diagram creator. This site lists many examples for using similarities and differences in the classroom.
- Marco Polo's Read-Write-Think: [Venn Diagram, 3-circle](#)  
Click on "Interactive Tool" to get the online venn diagram creator. This site lists examples for using similarities and differences in the classroom.
- Marco Polo's Read-Write-Think: [Compare and Contrast Guide](#)
- [Graphic Organizers](#)--Web English site lists provides a list of web sites housing sample graphic organizers. Many are in pdf format and make the organizers easy to utilize.

### **Research on Graphic Organizers**

**Scientifically based research cited in the literature review demonstrates that a research base exists to support the use of graphic organizers for improving student learning and performance in the following areas:**

- Reading comprehension

- Student achievement across grade levels, diverse student populations and content areas
- Thinking and learning skills such as organizing and communicating ideas; seeing patterns and relationships; and categorizing ideas
- Retention

## Why Gizmos Work

Executive Summary of the Research Synthesis on Effective Teaching Principles and the Design of Quality Tools for Educators - Dr. Edwin Ellis  
<http://idea.uoregon.edu/~ncite/documents/techrep/tech06.html>

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# Instructional Strategies

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## Summarizing and Note Taking

[About](#)

from **Classroom Instruction that Works** Robert J. Marzano, Debra, J . Pickering, Jane E. Pollock, MCREL, 2001.

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### Summary of Research on Summarizing

Sometimes summarizing and notetaking are referred to as mere "study skills". However, they are two of the most powerful skills students can acquire. Summarizing and note taking provide students with tools for identifying and understanding the most important aspects of what they are learning.

- To effectively summarize, students must delete some information, substitute some information and keep some information.
- To effectively delete, substitute, and keep information, students must analyze the information at a fairly deep level.
- Being aware of the explicit structure of information is an aid to summarizing information.

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### Classroom Practice in Summarizing

- Rule-Based Strategy follows a set of rules or steps to develop a summary.
- Summary Frames use a series of questions designed to highlight the critical elements for specific types of information.
- Reciprocal Teaching involves summarizing, questioning, classifying and predicting.

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### Summary of Research on Note Taking

- Verbatim is the least effective way to take notes.
- Notes should be considered a work in progress.
- Notes should be used as study guides for tests.
- The more notes that are taken, the better.

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### Classroom Practice in Note Taking

- Teacher-Prepared Notes are one of the most straight forward uses of notes.
- Variety of formats: Informational Outlines, Webbing and Combination Notes.

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### Technology Resources

Title: **Summary Frames**

Grade Level(s):

Curricular Area(s):

Description: A series of questions designed to highlight the critical elements for specific types of information.

Resources (Files, Websites, etc.):

Microsoft Word Files:

- [Narrative Frame Questions](#)- commonly found in fiction
  - [T-R-I Frame Questions](#) - commonly found in expository materials
  - [Definition Frame Questions](#) - describes a particular concept
  - [Argumentation Frame Questions](#) - contains information designed to support a claim
  - [Problem Solution Frame Questions](#) - introduces a problem and a solution
  - [Conversation Frame Questions](#) - a verbal interchange between two or more people
- 

Title: **Cornell Notes**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Template: [Cornell Notes](#)
  - Website Link: [Simple directions and visuals to create Cornell Notes](#)
- 

Title: **Visual Representation Clues for Notetaking**

Grade Level(s):

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- Website Link: [Clues for notetaking](#)
- 

Title: **NoteStar**

Grade Level(s): 4-12

Curricular Area(s): All

Description: NoteStar assists in taking notes from online sources. Using the NoteStar NoteCards tool, students can take notes from online sources as they browse the Internet. Source information (i.e. title, url, etc.) is automatically captured in order to assist in work citation. Once their notes are gathered, students may then organize their notes to suit their project's goals. NoteStar benefits teachers as well. Once a teacher has assigned a NoteStar project to their students, they may return to monitor their student's progress at any time.

Based on a student or group's progress, the teacher may provide feedback.  
Resources (Files, Websites, etc.):

- Website Link: [NoteStar](#)

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Title: **Notetaking Resources**

Grade Level(s): K-12

Curricular Area(s):

Description:

Resources (Files, Websites, etc.):

- [Combination Notes](#) - Microsoft Word file
- [Note taking Rubric](#) - PDF document
- Website Link: [The Trash-N-Treasure Method of Note-Taking](#)
- [Data Chart for Note Taking](#) - Microsoft Word file
- [Lotus Notes](#)--Excel spreadsheet file that is very good for taking notes and/or summarizing what has been discussed. Note: to access this excel file right-click (Windows) or ctrl-click (Macintosh) on the file name and save, then open the file in Excel.
- [Coded Note Taking](#)--this pdf file is shared by Pam Krambeck. This file explains a method for taking notes.

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## Software Applications

Title: **Inspiration/Kidspiration**

Grade Level(s): K-12

Curricular Area(s): All

Description: Creates webbing and outline formats. Use the link below to download a free trial.

Resources (Files, Websites, etc.):

- Website Link: [Inspiration™](#)

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Title: **Notebook™**

Grade Level(s): K-12

Curricular Area(s): All

Description: NoteBook helps you keep track of notes, clip content, and share information.

Resources (Files, Websites, etc.):

- Website Link: [Circus Ponies](#) (Mac OS only)
- 

Title: **Pico-Map**

Grade Level(s): K-12

Curricular Area(s):

Description: Handheld resource tool. Use the link below to download a free trial.

Resources (Files, Websites, etc.):

- Website Link: [Pico-Map](#)
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### Other Resources

Title: **Quantum Note Taking**

Grade Level(s): K-12

Curricular Area(s): All

Description: This booklet series provides skills for all ages that can be applied to every area of learning and interest.

Resources (Files, Websites, etc.):

- WebSite Link: [QuantumNote Taking](#) - Books and other resources to purchase.
  - [FlipBook](#)--from Read Write and Think--allows you to personalize a flipbook for note taking. Excellent resource!
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