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THE GRAPHIC ORGANIZER
www.graphic.  rg™

News

NEW

Inspiration 6.0

Inspiration Version 6.0 will release January 3. New features include direct Internet hyperlinks, enhanced symbol libraries, more templates, and is even easier to use. The hyperlink feature and templates are worth the upgrade. Upgrades are available. The biggest feature by far is one installation CD for both Windows and Mac that features all from the old Higher Ed and K-12 5.0 versions. One CD does it all!!! The newly released training CD and Standards Planning Book are valued additions as well. To learn more about the features in Inspiration 6.0 [click here](#).

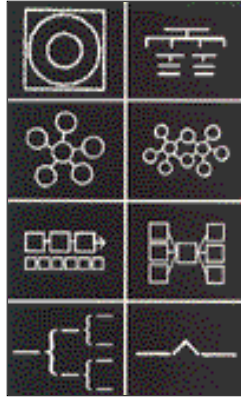
Visual Tools: From Graphic Organizers to Thinking Maps

David Hyerle has been working closely with Video Journal over the past year in the production of a two volume video package called "Visual Tools: From Graphic Organizers to Thinking Maps".... the elementary set (2 videos) and the secondary set (2 videos) will be out in late November or early December. Please contact David at designs.thinking@valley.net for more information. Video Journal took over 150 hours of classroom taping time from all over the country to bring us this high quality look at Thinking Maps as they are practiced in schools.

Review

Visual Tools and Technology Video

David's first video is a *must* see for anyone who is thinking about working with Graphic Organizers or for the GO pro looking for ways to incorporate GOs into the curriculum or for use in workshops designed to teach others about GOs. Topics include: about Graphic Organizers, how to use GOs in

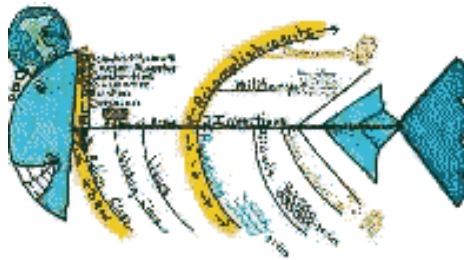


the classroom, examples, implications for the classroom and software reviews just to name a few. It is packed with information.

The sequence of concepts, applications and resources presented in the video is based on the chapter sequence from his book *Visual Tools for Constructing Knowledge* (1996). David has done a super job so get your pens and markers ready. The video and book can be purchased from Designs for Thinking Ph/Fax: 603-795-2757 or e-mail David directly at designs.thinking@valley.net

Some resources you might find useful for writing and the use of Graphic Organizers.

- [Graphic Organizers](#) - Many types are presented as teacher directions.
- [How to Effectively Organize a Paper using a Graphic Organizer](#) - A seven step approach.
- [Organization Patterns](#) - A basic guide for the 5 paragraph essay
- [General Procedures for Writing an Assigned Essay](#) - A strategy that might be useful.
- [Index - Check out the - double click on the html files.](#)
- [Three kinda cool graphic organizers](#)



[Visit Mrs. Dobbs' Classes](#)

Really great stuff - check it out!

In The Beginning..

Is a picture worth a thousand words? A graphic organizer forms a powerful visual picture of information and allows the mind 'to see' undiscovered patterns and relationships.

We use them everyday in our lives. The most common example is the calendar. How can graphic organizers help you and your students?



[Continued.](#)

Use a [cluster diagram](#) for mapping your research!

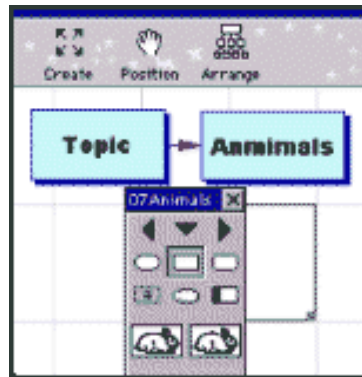


[Students and teachers share your GOs.](#)



Feature

Electronic Graphic Organizers: Are they for you?



Until now, we were bound by typewriter mentality and cumbersome paper, pencil and eraser. Newly developed software programs ease designing and rearranging. They allow us to cut, clip, paste and move information at will. [Continued.](#)

What's New!

Guideline for Designing and Assisting Students

This site has some 'quickie' [Guidelines for Designing Graphic Organizers](#) and [Guidelines for Assisting Students in the Creation of Graphic Organizers](#). They are adapted from a presentation by Martha Larkin at the 1996 R/CT Symposium. [Click Here for Guidelines.](#)

Early Childhood and Primary Types of Graphic Organizers and Their Usage Great Early Childhood examples of input graphs such as a "T" Graph and Venn Diagrams. Nicely Done!

Classroom Presentation? [GO Power Point Presentation](#) This might be useful for a classroom presentation for students, staff or for teacher ed.?

Inside This Issue

Contributor: Jennifer Keiser

What does school, old, and moldy have in common?

Students generate examples of similes in speech and writing using the topic of school. Use the same strategy for teaching metaphors? [Click to view.](#)

Do squirrels like people?

A class of children brainstorm questions on the topic of squirrels for descriptive writing and explore future [project work](#). [Click to view.](#)

What do sixth graders think about money?

Teacher collects information in an initial discussion on "what they know" about money. [Click to view.](#)



[The Educational Technology Journal](#)

A Picture is Worth . . . a Thousand Words: Graphical Organizers as Thinking Technology By Jamie McKenzie

[Grids organize thinking for decision making.](#)







Most of the graphic organizers displayed were constructed using [Inspiration](#), a visual thinking and learning software program.

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Graphic Organizers

	Describing	Comparing Contrasting	Classifying	Sequencing	Causal	Decision Making
 Webbing	Brainstorming Web Money Web	Double Cell Diagram	Hierarchy Diagram Research Cycle Cluster Diagram Desktop Folder System		Squirrels Web	
 Concept Mapping	Concept Map	Similie - School is..				
 Matrix		Venn Venn Expanded Comparison Matrix			KWHL	Thinking grids war leaders social problems vacation college stocks
 Flow Chart			Desktop Folder System	Linear String Expanded Linear String Dominoe Effect		



Most of the graphic organizers displayed were constructed using [Inspiration](#), a visual thinking and learning software program.

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● [Add, Modify
or Delete a
Link](#)

Books NEW

[Helpful Books About Graphic Organizers - Click Here](#)

References and HotLinks

General Information

[Graphic Organizers in Elementary Schools](#) - bibliography - ERIC Clearinghouse

[Graphic Organizers in Secondary Schools](#) - bibliography - ERIC Clearinghouse.

[Jan W.A. Lanzing Concept Mapping Homepage](#).- examples, basic references and excellent [bibliography](#).

[Graphic Organizers](#) - San Diego School Library Services.

More Examples

[Children's work](#) - Spider, Fishbone, Flow Chart - Suzanne Dobbs.

[Motion](#) - Concept Map - Louis Odom.

[Rocks](#) - Concept Map - Louis Odom.

[Concept Mapping](#) - Concept Map - Louis Odom.

[Geological Processes](#) - Concept Map - Louis Odom.

[Cell Division](#) - Concept Map - Louis Odom.

[Neurochemical Communication](#) - Concept Map - Louis Odom.

[Chain of Events / Clustering / Compare / Contrast / Family Tree / Fishbone / Spider Map](#)- SCORE (Language Arts) CyberGuide Project. Good example of a Fishbone Diagram.

[Character Development in Novels](#) - Assorted Teacher designed GOs - Could be used with pictures and/or text.

[Team Development](#) - Combination Concept Map and Mind Map - MindMan.

[Venn Diagrams](#) - Content area in language literacy.

[KWHL Chart](#) - Debbie Blaskowski - North Central Regional Educational Laboratory.

[Spider Map, Continuum Scale, Human Interaction Outline, Fishbone](#) - North Central Regional Educational Laboratory.

[Using Concept Mapping in a Sensation Perception Course](#) - Tom Vilberg.

[Short Story](#) - San Juan School District.

[Vocabulary Matrix](#) - Colonial Williamsburg Foundation.

On-Line Articles

[Combining Concept Mapping and Adaptive Advice to Teach Reading Comprehension](#) - Patricia A. Carlson - Journal Article.

[Concept Mapping: Soft Science or Hard Art?](#) - William M.K. Trochim - Journal Article.

[The Reliability of Concept Mapping](#) - William M.K. Trochim - Journal Article.
[Embedded Interactive Concept Maps in Web Documents](#) - Rob Kremer and Brian R. Gaines - Presentation paper on concept maps as an enhancement to web navigation, a new live annotation form, and as a group interaction tool.

[Concept Maps as Hypermedia Components](#) - Brian R. Gaines and Mildred L. G. Shaw - Journal article that proposes concept maps be regarded as basic components of any hypermedia system.

[JAVA Concept Maps for the Learning Web](#) - Roberto A. Flores-Méndez --

Knowledge Science Institute -- University of Calgary

[Collaboration through Concept Maps](#) -- Brian R. Gaines & Mildred L. G. Shaw

[Access to Learning Web Materials](#) -- Complete listing of the works of Brian R. Gaines with links.

[SuperKids Educational Software Review on Inspiration Software](#), 1997.

Articles by Joseph Novak

The concept mapping technique was developed by Dr. Joseph D. Novak, Cornell University, in the 1960s. His work was based on the theories of David Ausubel and the importance of prior knowledge as the key to learning new concepts.

Novak, J. (1991). Clarify with concept maps: A tool for students and teachers alike. *The Science Teacher*, 58(7), 45-49.

Novak, J. D. (1990). Concept mapping: A useful tool for science education. *Journal of Research in Science Teaching*, 27(10), 937-949.

Novak, J. D. (1993). How do we learn our lesson? : Taking students through the process. *The Science Teacher*, 60(3), 50-55.

Novak, J. D. (1993). Meaningful learning: The essential factor for conceptual change in limited or inappropriate propositional hierarchies (LIPs) leading to empowerment of learners. Paper presented at the Third international Seminar on Misconceptions and Educational Strategies in Science and Mathematics, NY.

Brainstorming Strategies

[Brainstorming](#)- Saskatchewan Education Curriculum and Instruction Branch.

[Steps in the Brainstorming Procedure](#)- John Suler.

[Brainstorming Guidelines](#) - Jane M. Fritz.

[Mind Tools - Brainstorming](#) - Minds Tools.

Mind Mapping

[MindTools](#) - Note taking and examples - Mind Tools.

[Mind Mapping FAQ](#) - Excellent reference about Mind Mapping - Mind Tools.

[Notes](#) from Tony Buzan's book "Use Both Sides of your Brain".

[Notes](#) from Tony Buzan's book "The Mind Map Book".

[Mind Maps by Tony Buzan](#) - The 3D Power of Mind Maps/Welcoming speech/Megatrends 2000.

Electronic Software

[Axon Idea Processor](#)

[Decision Explorer](#)

[Inspiration](#)

[Mind Mapper 1.0, by EGLE Magic](#) - Located at bottom of FAQ page.

[VisiMap and InfoMap](#)

Books **NEW**

[Helpful Books About Graphic Organizers - Click Here](#)

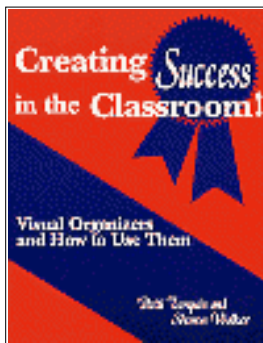
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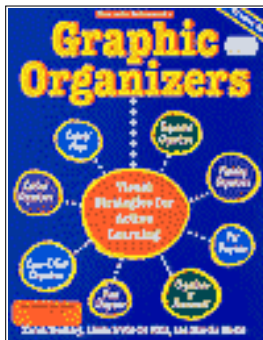
Helpful Books about Graphic Organizers

Which books can be useful for learning and using about graphic organizers? I have listed those I feel can be most helpful.



Creating Success in the Classroom! : Visual Organizers and How to Use Them by Patti Tarquin & Sharon Walker
Libraries Unlimited - November 1996
ISBN: 1563084376

[Order from Amazon](#)



Graphic Organizers: Visual Strategies for Active Learning by Karen Bromley, Linda Irwin-Devitis, Marcia Modlo, Drew Hires (Illustrator)
Scholastic Trade - June 1996
ISBN: 0590489283

[Order from Amazon](#)

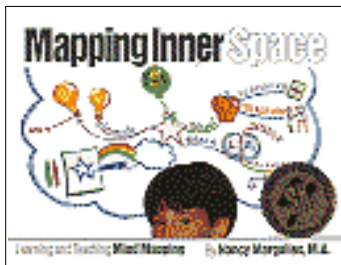
Webbing With Literature: Creating Story Maps With Children's Books by Karen D'Angelo Bromley
Allyn & Bacon - January 1996
ISBN: 0205169759

[Order from Amazon](#)



***Visual Tools for Constructing Knowledge* by David Hyerle**
Assn for Supervision & Curriculum Development - June 1996
ISBN: 0871202662

[Order from Amazon](#)



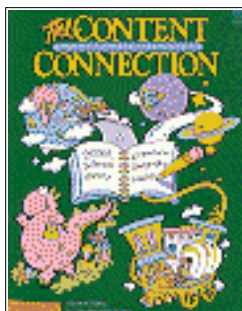
***Mapping Inner Space: Learning and Teaching Mind Mapping* by Nancy Margulies**
Zephyr Press - May 1991
ISBN: 091370556X

[Order from Amazon](#)



***Organizing Thinking : Graphic Organizers (Book II)* by Howard Black, Sandra Black**
Critical Thinking Books and Software - June 1990
ISBN: 0894553550

[Order from Amazon](#)



***Content Connection : How to Integrate Thinking & Writing in the Content Area* by Hilarie N. Staton**
Scott Foresman - May 1991
ISBN: 0673460835

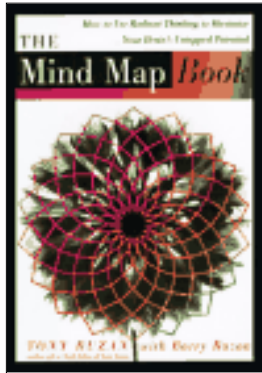
[Order from Amazon](#)

***Great Graphic Organizers to Use With Any Book! : 50 Fun Reproducibles & Activities to Explore Literature & Develop Kids' Writing* by Michelle O'Brien-Palmer, Heidi Stephens (Illustrator)**
Scholastic Trade - November 1997
ISBN: 0590769901

[Order from Amazon](#)

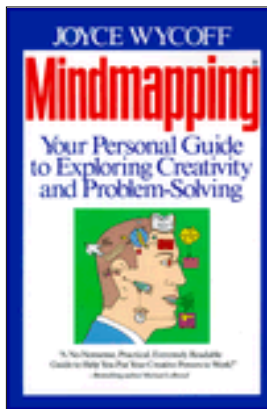
***Organizing Thinking: Book One: Graphic Organizers* by G. Parks**
Critical Thinking Books and Software - June 1992
ISBN: 0894553542

[Order from Amazon](#)



***The Mind Map Book: How to Use Radiant Thinking to Maximize Your Brain's Untapped Potential* by Tony Buzan, Buzan Barry, Barry Buzan**
E P Dutton - September 1994
ISBN: 0525939040

[Order from Amazon](#)



***Mindmapping : Your Personal Guide to Exploring Creativity and Problem-Solving* by Joyce Wycoff**
Berkley Pub Group - June 1991
ISBN: 042512780X

[Order from Amazon](#)

***Transformation Thinking: Tools and Techniques That Open the Door to Powerful New Thinking for Every Member of Your Organization* by Joyce Wycoff & Tim Richardson**
Berkley Pub Group - May 1995
ISBN: 0425143740

[Order from Amazon](#)

***Learning, Creating and Using Knowledge : Concept Maps As Tools to Understand and Facilitate the Process in Schools and Corporations* by Joseph D. Novak**
Hardcover

This book is not yet available but can be ordered and will be shipped when released by the publisher. This could be "a classic".

The concept mapping technique was developed by Dr. Joseph D. Novak, Cornell University, in the 1960s. His work was based on the theories of David Ausubel and the importance of prior knowledge as the key to learning new new concepts.

I will review and keep folks posted about content and quality. [Click here for a list of prior articles.](#)

Lawrence Erlbaum Assoc - February 1998
ISBN: 0805826254

[Order from Amazon](#)

***Learning, Creating and Using Knowledge: Concept Maps As Tools to Understand and Facilitate the Process in Schools and Corporations* by Joseph D. Novak**
Paperback

This book is not yet available but can be ordered and will be shipped when released by the publisher. This could be "a classic".

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Lawrence Erlbaum Assoc - February 1998
ISBN: 0805826262

[Order from Amazon](#)

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Power Tools



Consultant Services

- [Technology Integration & Planning](#)
- [Web Site Development](#)
- [Project Approach](#)
- [The Graphic Organizer](#)



Greg Freeman has worked collaboratively with prominent leaders in the areas of technology and strategic planning in a nationally recognized school district. He is currently on leave from the Bellingham School District and has moved to Bend, Oregon to expand his staff development and consultant services. A former principal, teacher, presenter and trainer, he brings with him an extensive background and demonstrated ability to develop and manage

dynamic systems change with a strong emphasis on communication and technology integration.

Consultant Services

- Technology Integration
- Graphic Organizers & Visual Software Tools
- Investigative Learning Strategies



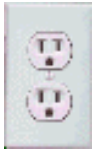
For more information on services:

Tel: 541.318.5277

[E-mail: enminds@az.com](mailto:enminds@az.com)

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Power Tools



Technology Integration and Planning

- [Consultant Services](#)

- [Web Site Production](#)

- [Project Approach](#)

- [The Graphic Organizer](#)



Technology Integration and Strategic Planning

Facilitation and support with any or all phases of the planning and implementation process:

- designing and conducting needs assessment surveys
- developing critical questions
- building vision and mission statements
- developing supporting strategies and activities
- crafting Internet and Intranet connectedness
- forming effective teams
- assessing staff skills
- planning and providing staff development
- developing student assessments (education)
- facilitating site and building level implementation

"Develop a technology plan that is tailor made to fit your needs."

For more information about training opportunities:

[Greg Freeman](#)

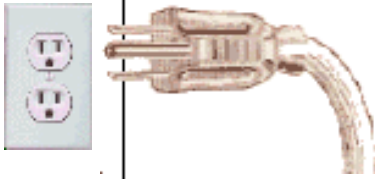
Tel: 541.318.5277

[E-mail: enminds@az.com](mailto:enminds@az.com)

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- [Integration
& Planning](#)

- [Web Site](#)

- [Development](#)

- [The Graphic](#)

- [Organizer](#)



The Project Approach

Students need strategies..

- that engage and challenge them to use and apply the skills they have learned in meaningful, real life contexts with understanding.
- to research questions, investigate and solve problems inside and outside the classroom.

[The Project Approach](#) is a powerful instructional strategy designed to meet these needs.

[The Project Approach](#) provides a framework for teaching an in-depth study of a topic or theme that parallels real world problem solving inside and outside the classroom. A project can be short-term or can enliven any classroom or school for months. Teachers guide student's learning by means of a flexible three phase planning framework.



During **Phase 1** prior information and experiences are accessed. Children acquire a shared understanding and questions for investigation are developed and crafted.



Phase 2 involves field investigation and gathering information from a variety of primary and secondary resources while exploring, observing, predicting, experimenting and inventing.



In **Phase 3** the information gathered is reviewed, synthesized and shared and project work is evaluated.

The Project Approach creates opportunities to use teaming skills, can increase the quality of student work and develops higher order thinking skills. This approach has significant advantages for integrating the curriculum, collaborative learning and continuous and mixed-age organizational plans.

At the workshops you will learn how to..

- implement The Project Approach in your classroom,
- select a topic or critical question and plan a short-term and long-term project,
- adapt the framework and structure of The Project Approach to fit strategies you are currently using, and
- effectively involve families and the community.

Workshop participants are involved in a 'hands-on' learning experiences--wear comfortable clothes.

Presenters

Our team of trainers are practicing master teachers. They know what will and will not work with younger and older children. Through classroom experiences, workshops, publications and courses they have guided teachers to be highly successful using Project Approach strategies.

They are outstanding trainers and excellent workshop and conference presenters, widely recognized for their enthusiastic and hands-on presentations, rapport with teachers and practical ideas.

Workshop Design

Workshops are custom designed from 1-3 days. They are intensive 'hands-on' experiences with optional follow-up support. College credits and state clock hours are available upon request.

For more information about training opportunities:

[Greg Freeman](#)

Tel: 541.318.5277

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Layering

Layering is a new concept in graphic organizers I discovered while using electronic graphic organizer software and working with students. Layering different types of information in a graphic organizer provides new insights. Layering appears to be particularly effective in the sharing of information. The impact of layering is to evoke more associations and relationships. It works much like a graphic program such as Adobe Photoshop, each layer adding a new dimension of information.

An illustration of this would be a shopping mall information directory. Consider layer one a list of names of the various shops and the category the shop is in, e.g. The Fountain - Restaurants. Using this information we can generate the name of a shop to purchase prepared food.

Add an another layer to the directory, a floor map of the mall. Now a mall visitor can build a shopping route, calculate approximate distances and plan a shopping itinerary to include The Fountain to dine.

Add a third layer such as a picture of a product sold in The Fountain. For example add a picture of an ice cream cone next to the shop name, The Fountain. The picture identifies The Fountain is associated with ice cream cones. This, in turn, creates new and more thoughtful insights about The Fountain. A visual picture of what might be sold in The Fountain is created, plus some memories of ice cream are elicited. What would happen if an audio layer was added?

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Primary & Secondary Sources

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Primary and Secondary Sources of Information

Primary sources of information allow the learner to access original and unedited information. A primary source requires the learner to interact with the source and extract information. Secondary sources are edited primary sources, second-hand versions. They represent someone else's thinking.

Primary Sources

- Person
- Interview
- E-Mail contact
- Event
- Discussion
- Debate
- Community Meeting
- Survey
- Artifact
- Observation of object (animate and inanimate)

Secondary Sources

- Reference Material
- Book
- CD Rom
- Encyclopedia
- Magazine
- Newspaper

- **Video Tape**
- **Audio Tape**
- **TV**

Primary or Secondary

- **Internet Web Site**
- **Graph, chart, diagram, table**

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Representations

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Representations

Representations are vehicles for communicating and sharing information. Representations are visual, verbal, symbolic or a combination.

Prior to the construction of a representation consideration should be given as to what mode the representation will be presented in. This can be dependent upon the assignment, project or investigation. Will the representation be descriptive, narrative, persuasive?

This page can be copied and used for planning, observations or portfolio inclusion.

Writing

- Advertisement
- Banner
- Bibliography
- Biography
- Book
- Bulletin Board
- Character Sketch
- Construction of an Apparatus
- Crossword Puzzle
- Dictated Story
- Dictionary
- Editorial
- Greeting Card
- Instructions

- **Interview**
- **Invitation**
- **Lesson**
- **Letter**
- **Log, Journal, Diary**
- **Magazine**
- **Newspaper**
- **Newspaper Article**
- **Outline**
- **Plan**
- **Plan for a Trip**
- **Poetry**
- **Questionnaire**
- **Report**
- **School Bulletin**
- **Speech Writing**
- **Story**
- **Student Publication**
- **Technical Writing**
- **Test**
- **Travel Brochure**
- **Word Search**

Verbal

- **Audio Tape**
- **Debate**
- **Illustrating Written Text with Music or Sound**
- **Interview**
- **Jokes**
- **Oral Report**
- **Panel Discussion**
- **Pantomime**
- **Play**
- **Puppet Show**
- **Radio Production**
- **Role Playing**

- **Round Table Discussion**
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- **Speech**
- **Storytelling**
- **TV Program**

Constructions - Large to Miniature

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- **Bulletin Board**
- **Cartoon**
- **Collage**
- **Diorama**
- **Illustrations of Writing**
- **Legos**
- **Mask**
- **Mind Map**
- **Miniature**
- **Mobile**
- **Model**
- **Model with Clay**
- **Mural**
- **Musical Instrument Construction**
- **Overhead transparency**
- **Paper-mache Model**
- **Photographs**
- **Plaster Model**
- **Poster**
- **Rubbings**
- **Sandbox Display**
- **Scrapbook**
- **Sculpture**
- **Sewing**

Kinesthetic

- **Physical Demonstration**
- **Charades**
- **Dance**
- **Drama**
- **Mime**
- **Playing Music**

Mathematical

- **Bar Graph**
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- **Data Collection Sheet**
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- **Number Line**
- **Part-Whole Diagram**
- **Pattern Chart**
- **Pie Chart**
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- **Scale**
- **Survey**
- **Venn Diagram**

Social Studies and Science

- **Cross Section Diagram**
- **Cycle Chart**
- **Experiment**
- **Investigation**
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- **Concept Map**
- **Matrices**
- **Mind Map**
- **Sequence Chart**

- **Time Line**
- **Tree Diagram**
- **Web**

Technology Integration

- **Digital Gallery**
- **Graphic Design**
- **Illustration**
- **Multimedia Presentation**
- **Publication (eg. trifold, greeting card, banner using word processing or a publishing software.)**
- **Spread Sheet**
- **Data Base**
- **TV Program**
- **Video Tape**
- **[Web Virtual Museum](#)**
- **[Web Site or Web Page](#)**

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**Power
Tools**



AERO

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AERO - Ways To Gather Information

Student generated questions should be recorded so all students can view them. Questions can be recorded using different strategies.

One strategy is to record questions on butcher paper. Another strategy is to record the questions on sentence strips and then insert the question into a pocket chart. An advantage in using a pocket chart is that questions can be added, rearranged, grouped and used for other purposes during subsequent stages of an investigation. Using a pocket chart can be particularly effective with younger learners.

Using electronic graphic organizer software and a projector or scan converter can be a highly effective strategy for gathering, sorting and sharing information during the life of an investigation.

As questions are formulated, added and refined an activity takes place in which students learn about ways to research a question.

A mnemonic technique to teach learners different ways to research a question is AERO. ➡ A E R O defines the different ways to gather

information about a question. An A, E, R, O or combination is placed after the question indicating how the learner might research the question. Further dialog with learners and teams reflect which ways will be selected and how to access, collect and record the information that will be gathered.

A learner can gather information by..

- **ASKING an expert on the topic.**

■ **EXPERIMENTING** and developing a design for an experiment.

■ **READING OR VIEWING** reference materials such as an atlas, encyclopedia, World Book CD ROM, video etc.

■ **OBSERVING** using their senses (sight, taste, hearing, touch) and then drawing, writing, counting, measuring and/or sharing.

[*Link for a complete list of potential primary and secondary resources that could be used during the investigation.*](#)

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Power Tools

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Bend Community School Self Assessment Technology Skills

Name (First and Last):

Today's Date:

Grade:

Teacher:

1. Responsible Use

Level 1 - I have read the Bend Community School Responsible Use Policy and understand my responsibilities.

Level 2 - I take care of the equipment and leave it ready for the next user. I log on and off the network system.

Level 3 - I understand and follow BCS rules concerning harassment, language, passwords, copyright, and privacy. I do not use copyrighted materials.

Level 4 - I model responsible use and teach others.

2. Basic Computer Use

Level 1 - I use a computer a little for entertainment.

Level 2 - I can select, open, use and close a program on my own.

Level 3 - I use more than one program at the same time. I can move between several windows.

Level 4 - I can learn new programs on my own.

3. File Management

Level 1 - I can not save any files I create using the computer.

Level 2 - I can select, open, save and delete files on different drives.

Level 3 - I create my own directories and folders to keep files organized.

Level 4 - I move files between folders, directories and drives.

4. Word Processing Program

Level 1 - I do not use WORD, a word processing program.

Level 2 - I use WORD to compose some pieces of writing and know how to change fonts and use the tool bar.

Level 3 - I use WORD to revise my writing and also use such tools as spell check and help menus.

Level 4 - I use WORD for publication of all my final writing pieces.

5. Printing

Level 1 - I do not know how to use the HP Color Printer or Lazer Jet Printer.

Level 2 - I print files directly from the computer screen and can use both printers.

Level 3 - I use print setup to select a remote networked printer and print my files.

Level 4 - I can use the print setup menu. I am able to troubleshoot minor printer problems.

6. E-mail

Level 1 - I do not use e-mail or First Class Client.

Level 2 - I use e-mail to compose, send and receive e-mail messages within the school and community.

Level 3 - I organize my mail folders and directories to save messages.

Level 4 - I use e-mail to request and send information globally concerning research I'm doing.

7. Graphics

Level 1 - I do not use graphics with my word processing projects.

Level 2 - I can open and create pictures with a draw program such as Paint, Correl Draw or Adobe Photoshop.

Level 3 - I can edit pictures and move pictures from one program to another.

Level 4 - I create, select and use graphics in my projects.

8. Digital Camera

Level 1 - I do not use the digital camera.

Level 2 - I can take pictures with the digital camera, use the camera software and save pictures to a file.

Level 3 - Using Paint, LView or Paint Shop Pro I can change the size of the picture and use the picture in a word processing or multimedia program.

Level 4 - I can edit the picture and create text on the picture and use the finished picture to support my research projects.

9. Scanner

Level 1 - I do not use the scanner.

Level 2 - I can use the HP scanner and scan program to save scanned pictures or drawings to a file.

Level 3 - Using Paint or LView I can modify the size of the scanned pictures.

Level 4 - I can edit the picture and create text on the picture.

10. Internet (Netscape)

Level 1 - I do not use Netscape or Explorer to cruise the Internet.

Level 2 - I visit Internet sites selected by my teacher and successfully use 'Back' and 'Home' buttons.

Level 3 - I use search engines and bookmarks to find and save information for my search.

Level 4 - I can download programs and graphics to a file on the network.

11. Spreadsheet Program

Level 1 - I do not use a spreadsheet program.

Level 2 - I enter data in a spreadsheet and can create charts.

Level 3 - I create and format spreadsheets.

Level 4 - I use formulas to help analyze data in a spreadsheet.

12. Database Programs

Level 1 - I do not use a database program.

Level 2 - I locate information from a pre-made database and add or delete information.

Level 3 - I can create and format databases.

Level 4 - I generate reports from a database in order to answer questions.

13. Information-Searching

Level 1 - I do not use technology to find information.

Level 2 - I can find information from electronic sources such as CD ROMs..

Level 3 - I can select, gather, and save information from electronic sources into a word processor or spreadsheet.

Level 4 - I can analyze and evaluate the information I've gathered.

14. Multimedia

Level 1 - I do not know much about multimedia.

Level 2 - I use multimedia products such as Power Point, Persuasion or HyperStudio.

Level 3 - I combine text with graphics to create my presentations.

Level 4 - I design quality multimedia projects with use motion, sound and still graphics to share ideas.

15. Video Production

Level 1 - I have never operated a video camera.

Level 2 - I occasionally use a video camera for home or school projects.

Level 3 - I have created an original video tape using editing equipment.

Level 4 - I use computer programs to edit video tape presentations.

16. Technology Presentation

Level 1 - I do not use technology for presentations.

Level 2 - I use a variety of sources (Paintbrush, InfoFinder, CDs) to import pictures into Microsoft Publisher or PowerPoint for a presentation.

Level 3 - I combine two or more tools (for example, Digital Camera, scanner, CD ROM) in a presentation.

Level 4 - I can present quality multimedia projects with motion, sound and still graphics to share ideas.

17. Web Site Production

Level 1 - I do not know how to make a web page.

Level 2 - I can use Netscape Composer or HTML generator to make a page which includes text and graphics.

Level 3 - I can modify my pages using HTML coding.

Level 4 - I can use animation, HTML codes, and Java Script or applets in my pages. I have produced a form.

This form was developed by Greg Freeman, Consultant, who based it upon the work of the Bellingham Public Schools and the Mankato Scale. The Mankato Scale was first developed by the Mankato (Minnesota) Public Schools to measure the growth of staff technology skills.

Greg Freeman [E-Mail: enminds@az.com](mailto:enminds@az.com) <http://www.graphic.org>

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Welcome to the Graphic Organizer Home Page

A graphic organizer forms a powerful visual picture of information and allows the mind 'to see' patterns and relationships.

We use them everyday in our lives. The most common example is the calendar. Although we don't refer to the calendar as a graphic organizer it is. The calendar is a descriptive matrix. It helps us to gather, sift, sort and share information. Using a calendar, patterns and relationships emerge from the information as if by magic. Emerging patterns and relationships create opportunities for decision making and sharing information.



The graphic organizer is a powerful yet under utilized tool. When used by adults and children they marvel at how they can help. Why are they so under utilized?

Until now, we were bound by typewriter mentality and cumbersome paper, pencil and eraser. Newly developed software programs ease designing and rearranging. They allow us to cut, clip, paste and move information at will.

Graphic organizers can help you and your students. There seems to be no end to the uses and variety of graphic organizers that have been created. This is a significant factor. Graphic organizers are highly personalized and reflect individual thinking.

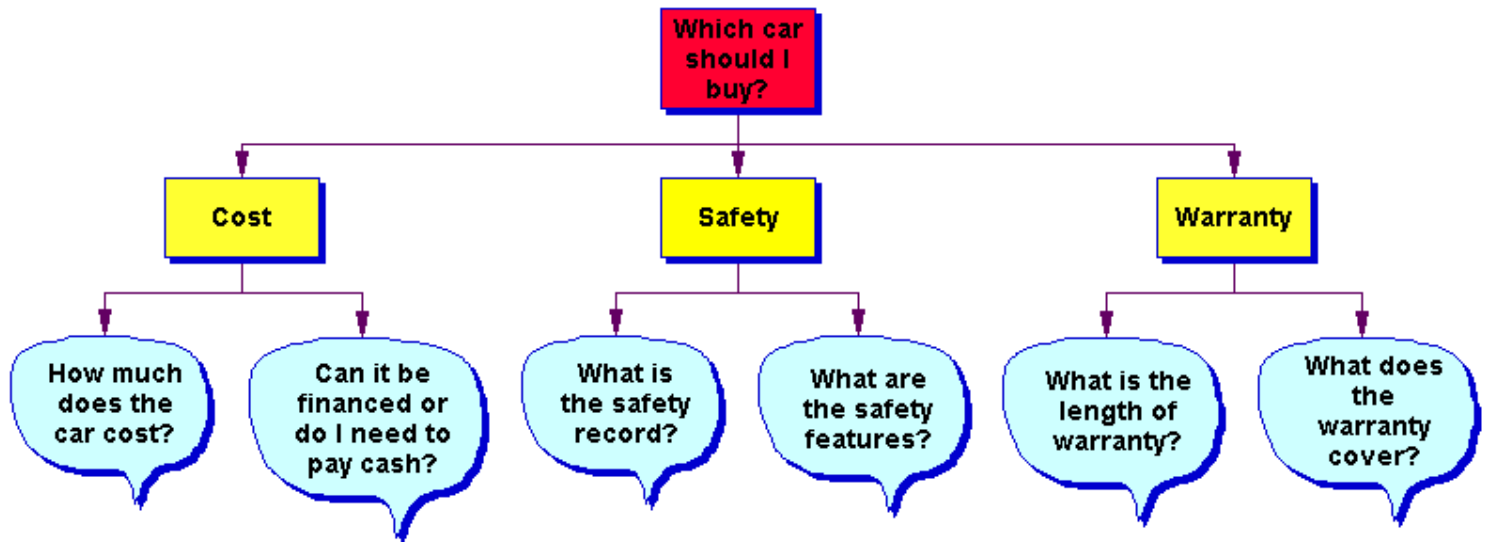


I invite you to explore different forms of graphic organizers, their uses and development.

Name: Cluster Diagram -- Research Cycle

Description: Research question is linked by criterion and telling questions.

Uses: Develop criterion and telling questions for investigations.



Critical Questions:

- What is the research question or problem?
- What are the criterion against which I will weigh the decision?
- What are the [telling questions](#) that will focus the search for information?
- How will I gather the information?

Suggestions: [The Research Cycle](#), developed by [Dr. Jamie McKenzie](#), is a powerful tool for developing student investigations. His web site, [From Now On \[on line\]](#), an electronic journal, is an excellent resource for learning more about creating researchable questions, The Research Cycle and integrating technology in schools.

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Electronic Graphic Organizers

A graphic organizer is a visual representation of concepts, knowledge or information that can incorporate both text and pictures. Their true value is in the mind seeing visual patterns and relationships and deriving new insights from the patterning of the information. The pieces of a graphic organizer are much like the pieces of a jigsaw puzzle. When the strange pieces are put together they form a familiar picture. The individual pieces have no meaning while the constructed puzzle does.

They have been used for many years as a visual tool for gathering, sifting, sorting and sharing information in many disciplines. Early childhood teachers use [Venn Diagrams](#) to teach comparing and contrasting objects while engineers use complex organizers to develop new processes and simulations. They are easier for humans to understand than other representations such as pure text. They allowed the mind 'to see' and construct meaningful patterns to create new insights.

The research and power of graphic organizers is well documented in education. However they were difficult to develop and very time consuming to produce and edit. Most were templates, workbook generated versions, more often than not, teacher generated.

Until now, graphic organizers such as [concept maps](#), radial diagrams and note taking matrices required careful planning and editing to avoid being cluttered, confusing and consequently -- unusable. They became unwieldy and not very user friendly. When a new idea was generated or an unanticipated change was made this required a complete remake of the map, diagram or matrix. Furthermore, the map was often limited to the size of the paper and time allocated to generate the organizer. Think about your personal calendar! :>) Consequently the organizer and the developer lost their creative power to collect and generate ideas and information -- bogged down by erasers, space limitations and capabilities to edit. Graphic organizers were bound by typewriter mentality and cumbersome paper, pencil and eraser. These problems kept the applications limited in scope and use to all but the most sophisticated user.

Recent development of [software](#) to produce and edit graphic organizers has opened up new vistas for uses in gathering, sifting, sorting and sharing information in visual forms, yet unexplored. Barriers have been removed.

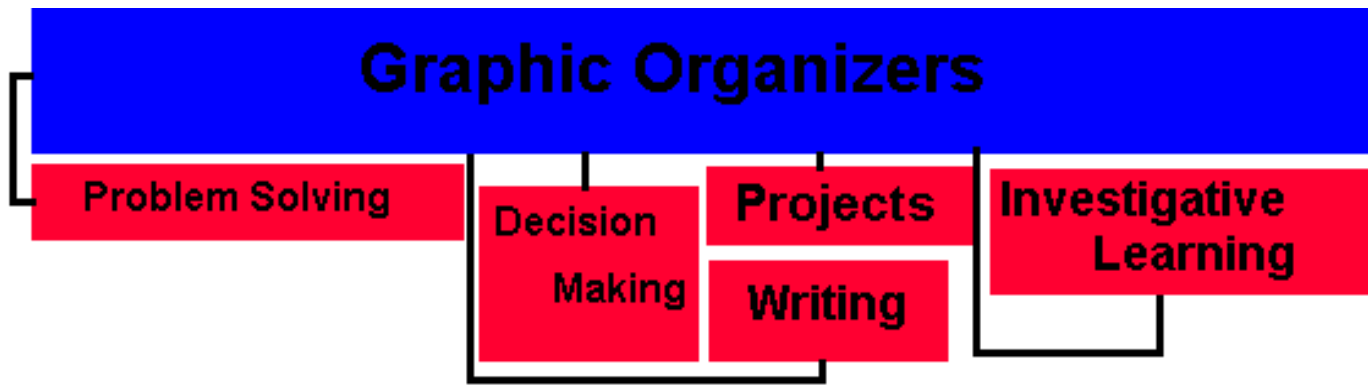
Newly developed electronic organizers and multiple windows ease designing, gathering and rearranging information. They allow the developer to cut, clip, paste, move and rearrange information at will. Not having to preplan, draft and remake brings into being the free flow of creativity and information in a natural manner.

In view of the wealth of information (info glut?) and continued development of the Internet, a new and powerful tool, the electronic graphic organizer can help plan, gather, sift and sort the vast amount of information generated in cyberspace.

The use of hierarchical graphic organizers as a web site navigation tool is appearing more frequently in web site development. Internet search engines are incorporating graphic organizers as a tool to lead info seekers in their quests for information.

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Name: **Venn Diagram Basic**

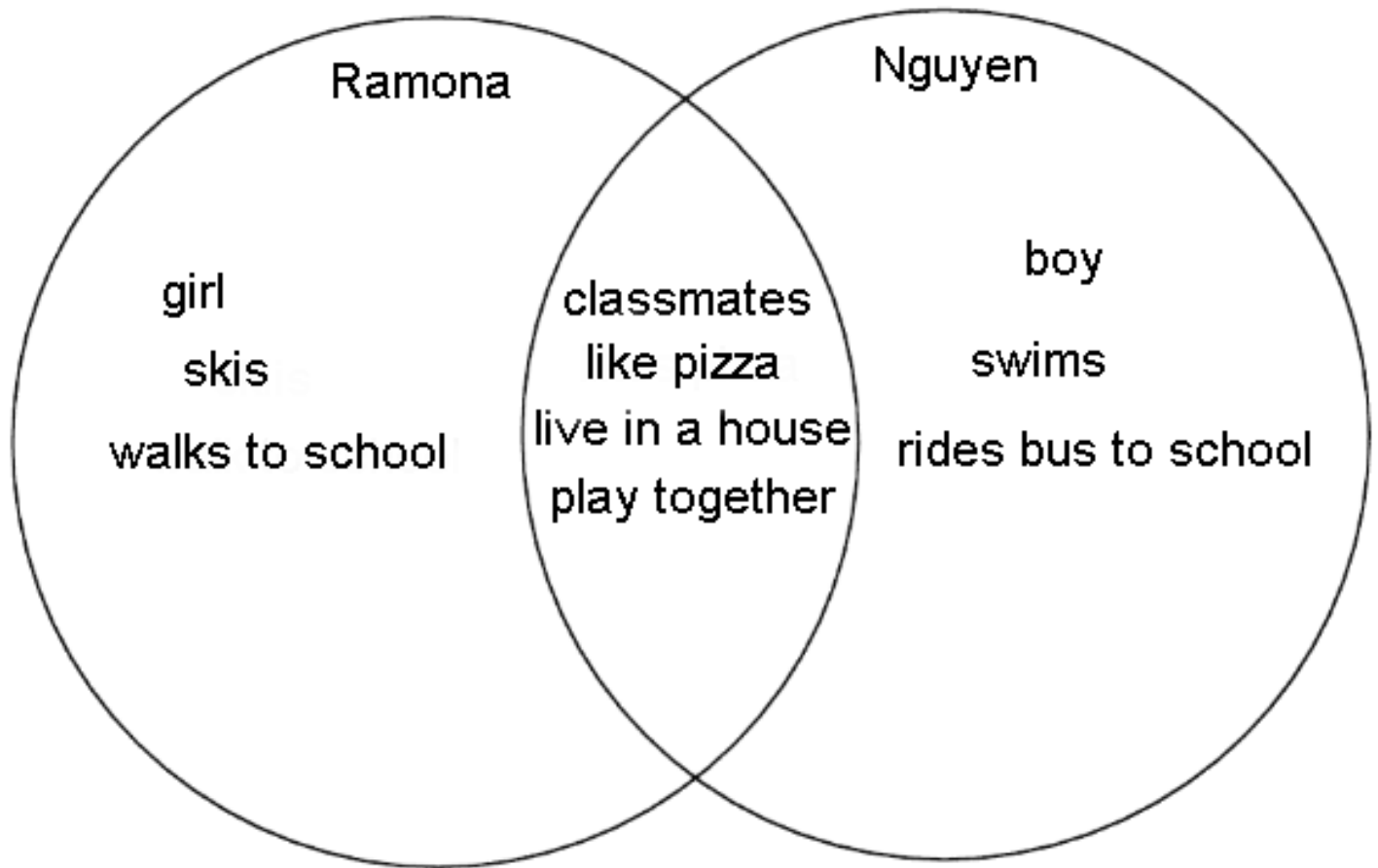
Description: Two items linked by characteristics or attributes.

Uses: Describe and compare attributes and characteristics of items (things, people, places, events, ideas, etc.)

Critical Questions:

- What items do you want to compare?
- What characteristics do the items have in common (intersecting portion)?
- How are the items similar (the same) and different (non intersecting portion) based on the characteristics?

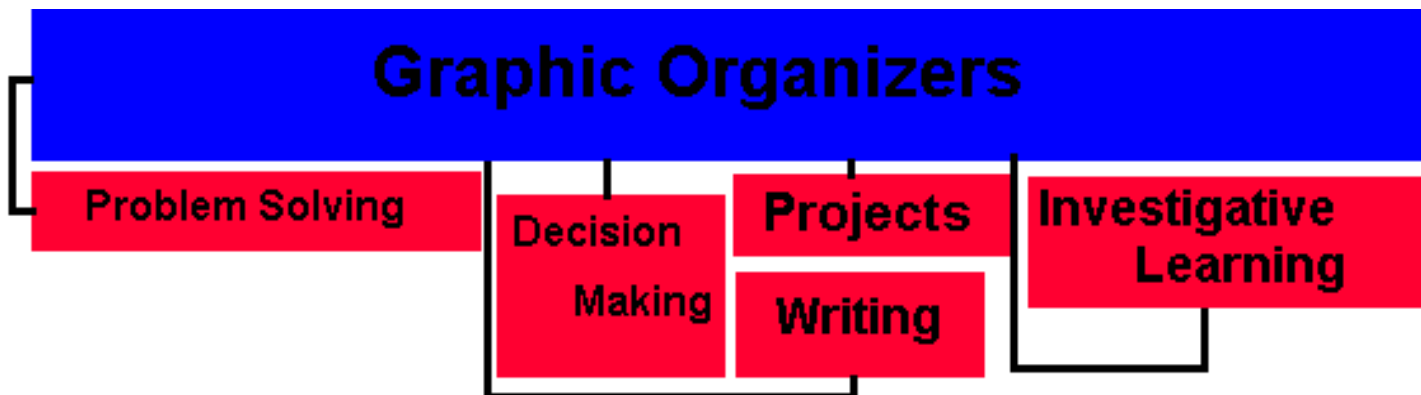
Suggestions: Venn diagrams are useful when comparing two things and for use with younger children. String or colored yarn can be used to make circles on the floor and manipulatives and pictures are strongly encouraged. A useful tool to launch writing about what is similar and what is not. A better tool to use is the [Double Cell Diagram](#). See also [Venn Diagram Expanded](#) for comparing three items.



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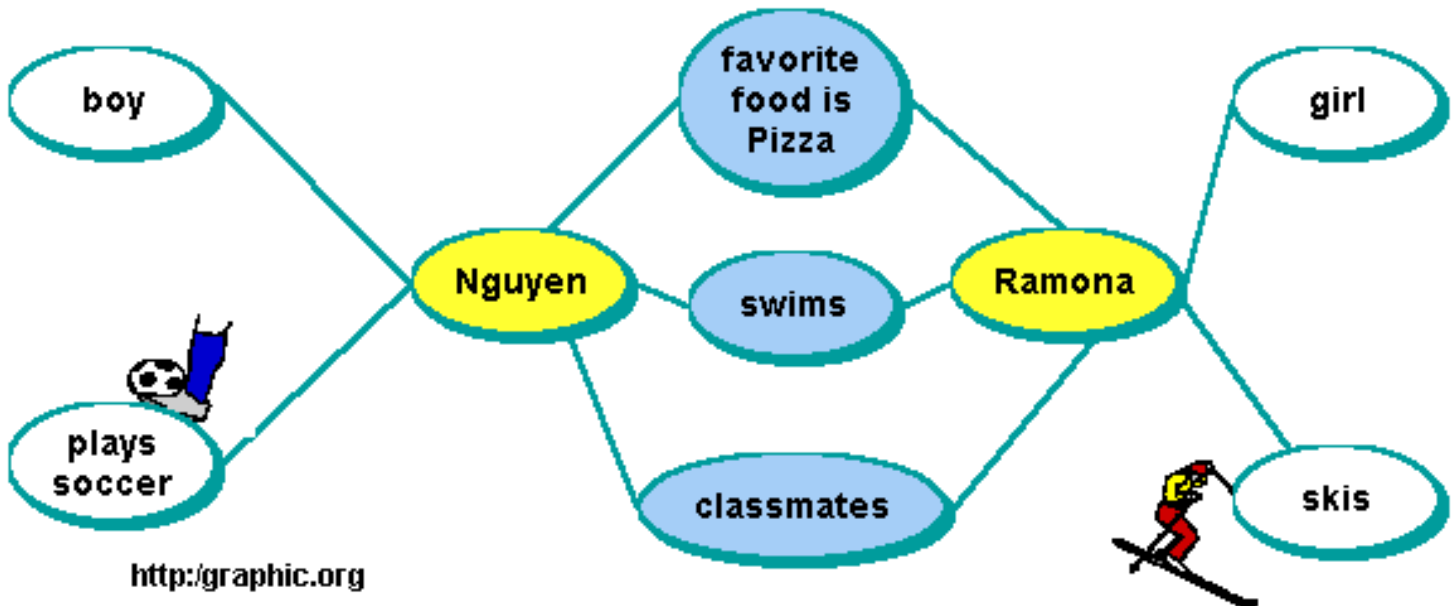
Name: **Double Cell Diagram**

Description: Two items linked by characteristics or attributes.

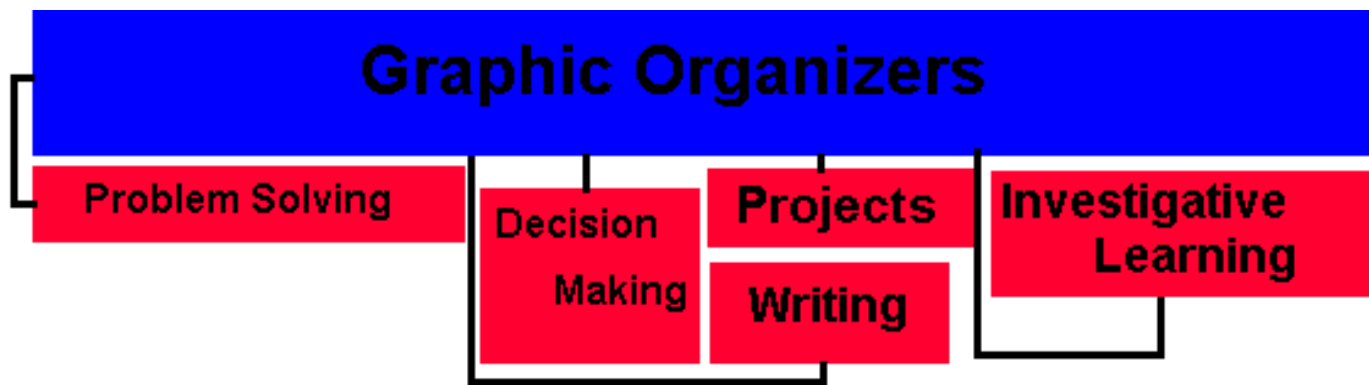
Uses: Describe and compare attributes and characteristics of two items, things, people, places, events or ideas.

Critical Questions:

- What items do you want to compare?
- What characteristics do the items have in common? What are not in common?
- How are the items similar and different?



Suggestions: A Double Cell Diagram is an excellent substitute for a Venn Diagram for comparing likenesses and differences. Good for use with younger children. Use cells and links with younger children to help them create more complex webs and maps in the future. String, hula hoops, colored yarn, colored paper, colored pens all can be useful to make cells on the floor or wall for younger children. A good tool to launch writing about what is similar and what is not.



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Name: **Venn Diagram Expanded**

Description: Three items linked by characteristics or attributes.

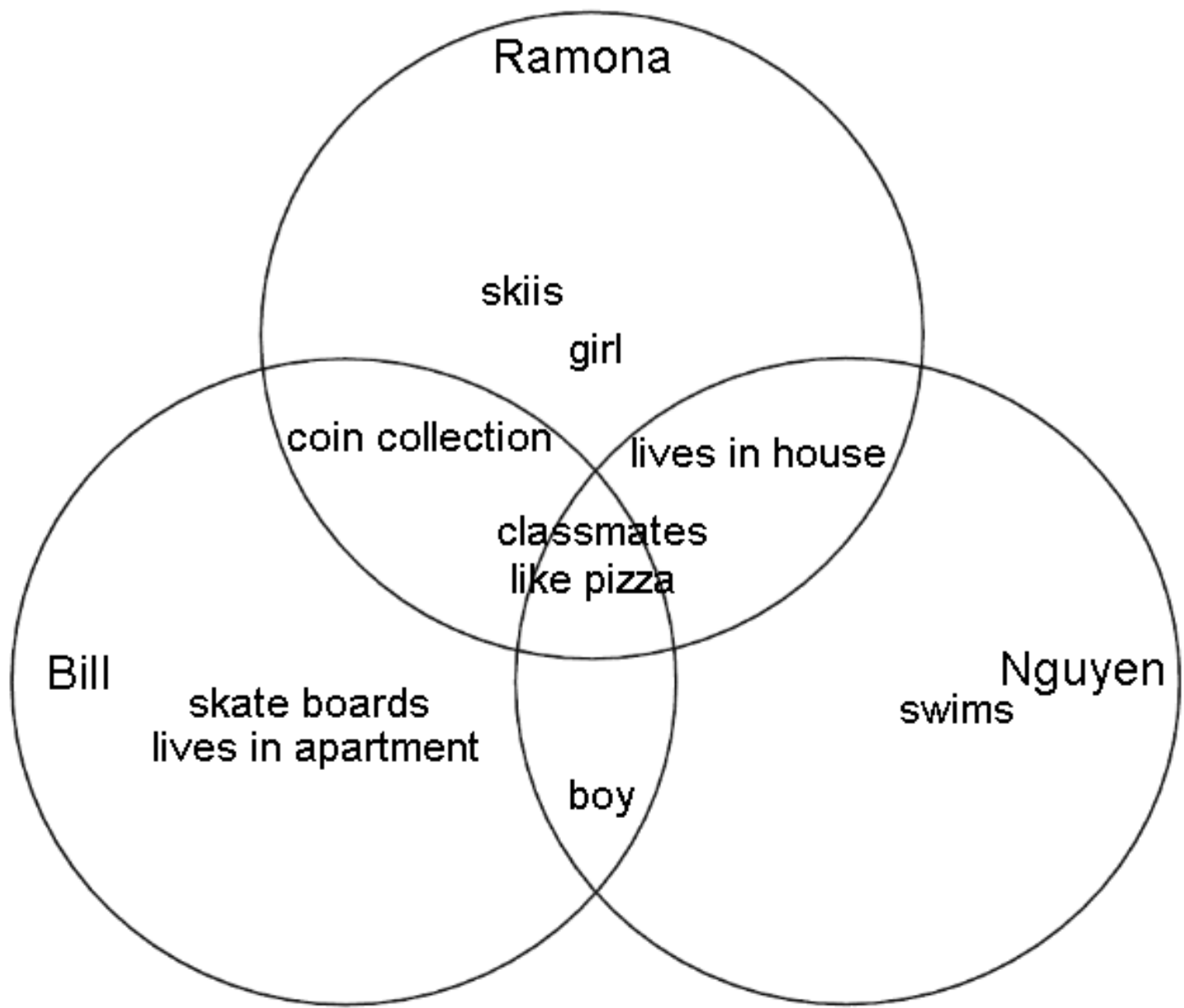
Uses: Describe and compare and attributes and characteristics of items (things, people, places, events, ideas, etc.)

Critical Questions:

- What items do you want to compare?
- What characteristics do the items have in common (intersecting portions)?
- How are the items similar and different (nonintersecting portion) based on the characteristics?

Suggestions: Use when comparing three items. Can be used with younger and older children.

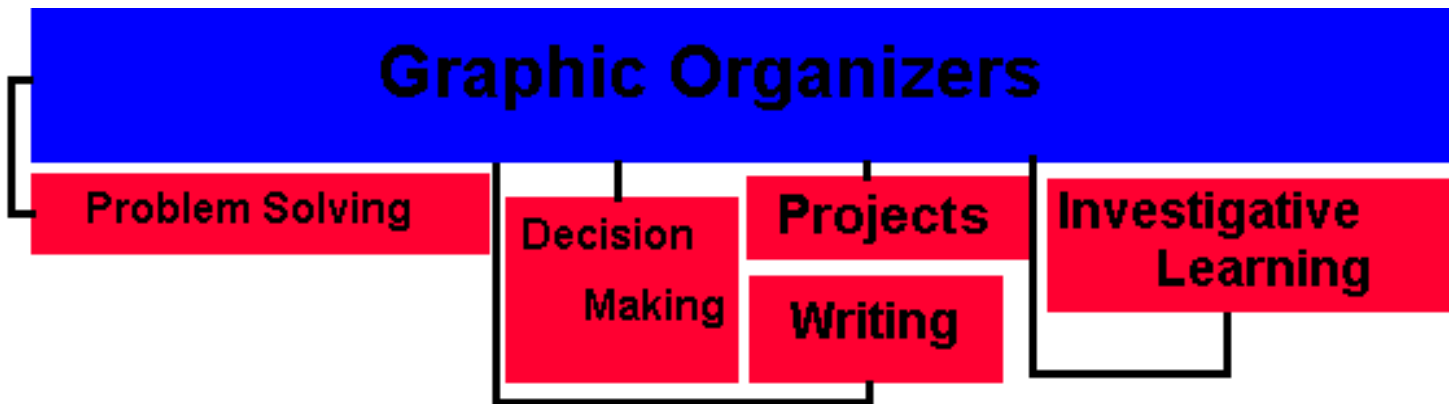
When using more than two items consider using a [Comparison Matrix](#). See [Venn Diagram Basic](#) and [Double Cell Diagram](#) for comparing two items.



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Name: **Comparison Matrix**

Description: Linked by characteristics or attributes.

Uses: Describe and compare attributes and characteristics of items (things, people, places, events, ideas, etc.), brainstorming.

Critical Questions:

- What items do you want to compare?
- What characteristics do you want to compare?
- How are the items similar and different based on the characteristics?

Suggestions: Place a 'X' in the box to indicate if an item possesses that characteristic. Make sure the student is clear and agrees on the definition of the specific characteristic.

How are they alike? How are they different?

		Characteristics			
		walk	talk	swim	read
Items To Be Compared	person	X	X	X	X
	dog	X		X	
	cat	X		X	
	fish			X	

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Graphic Organizers

Problem Solving

Decision
Making

Projects

Writing

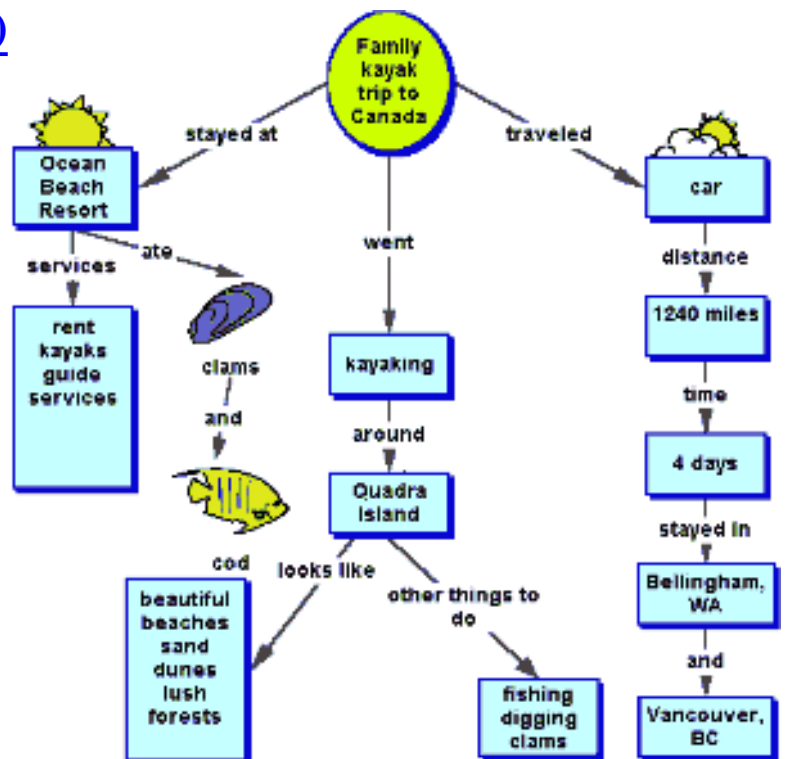
Investigative
Learning

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Name: **Concept Map**

Description: A concept map is a special form of a web diagram for exploring knowledge and gathering and sharing information. Concept mapping is the strategy employed to develop a concept map. A concept map consists of nodes or cells that contain a concept, item or question and links. The links are labeled and denote direction with an arrow symbol. The labeled links explain the relationship between the nodes. The arrow describes the direction of the relationship and reads like a sentence.

Descriptive Concept Map (133K)



Research Cycle Concept Map (227K)



- ### Critical Questions:

- ## Suggestions:

- ## Useful Links:

<http://www.graphic.org/concept.html> (2 of 3) [3/17/2000 12:13:56 AM]

http://www.edc.org/FSC/NCIP/OT_CBFCM.html, 1996.

Carlson, P. [Combining Concept Mapping and Adaptive Advice to Teach Reading Comprehension \[on line\]](#) Journal of Information Processing and Computer Supported New Media. This is an in depth paper on teaching reading using concept maps. Excellent references.

http://www.iicm.edu/jucs_1_3/combining_concept_mapping_and/html/paper.html, 1995.

Exploring the Environment [Steps to Constructing a Concept Map \[on line\]](#) Examples are provided and a free association approach is presented using note cards. The approach has been adapted from White and Gunstone, 1992. <http://cotf.edu/ETE/concept.html>, 1997.

Gaines, B. and Shaw, M. [Concept Maps as Hypermedia Components \[on line\]](#) Authors provide visual and written descriptions of using concept maps in hypermedia systems. A proposal that concept maps be regarded as a basic component of any hypermedia system. A concept map can complement text and images with formal and semi-formal active diagrams.

<http://ksi.cpsc.ucalgary.ca/articles/ConceptMaps/CM.html#Section1>, 1996.

Kremer, R. and Gaines, B. [Embedded Interactive Concept Maps in Web Documents \[on line\]](#) (1996) Knowledge Science Institute. Authors discuss the uses of concept maps as an enhancement to web sites, web navigation and the idea of live concept mapping on the net. Excellent references and a must reading if you are thinking about using image maps, concept maps or some graphic organizer in your web site.

http://www.cpsc.ucalgary.ca/~kremer/webnet96/webnet_kremer.html, 1996.

Another super source for using concept maps as a navigation tool in web sites is David Busch's article in *Internet World*, September 1997, [I-Way Maps/Graphical links can make your site look better](#).

Lanxing, J. [The Concept Mapping Homepage \[on line\]](#) This is a good reference with an example of a concept map, history and additional published references. Links are provided for concept mapping and mind mapping, a related strategy developed by [Tony Buzan](#).

http://www.to.utwente.nl/user/ism/lanxing/cm_home.htm

Trochim, W. [Concept Mapping: Soft Science or Hard Art? \[on line\]](#) Twenty projects are presented and the role of concept mapping is discussed for different disciplines. The article may be useful for in depth research of concept mapping.

<http://trochim.human.cornell.edu/research/epp2/epp2.htm#Table2>

Vilberg, T. [Using Concept Mapping in a Sensation & Perception Course \[on line\]](#) Good example of a complex concept map used in a college course.

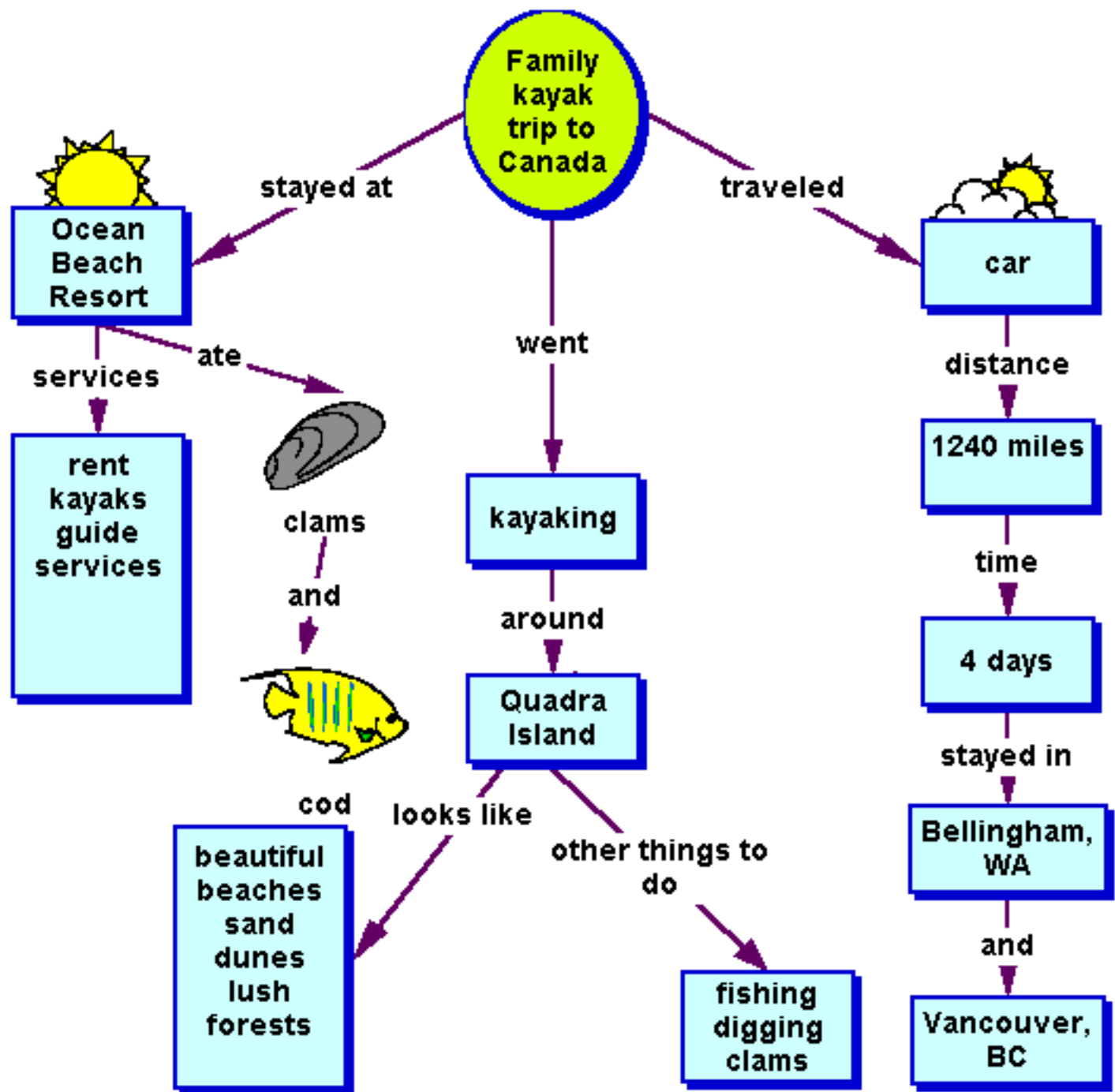
<http://river.clarion.edu/TRVILBERG/conceptmap.html>, 1996.

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Descriptive Concept Map

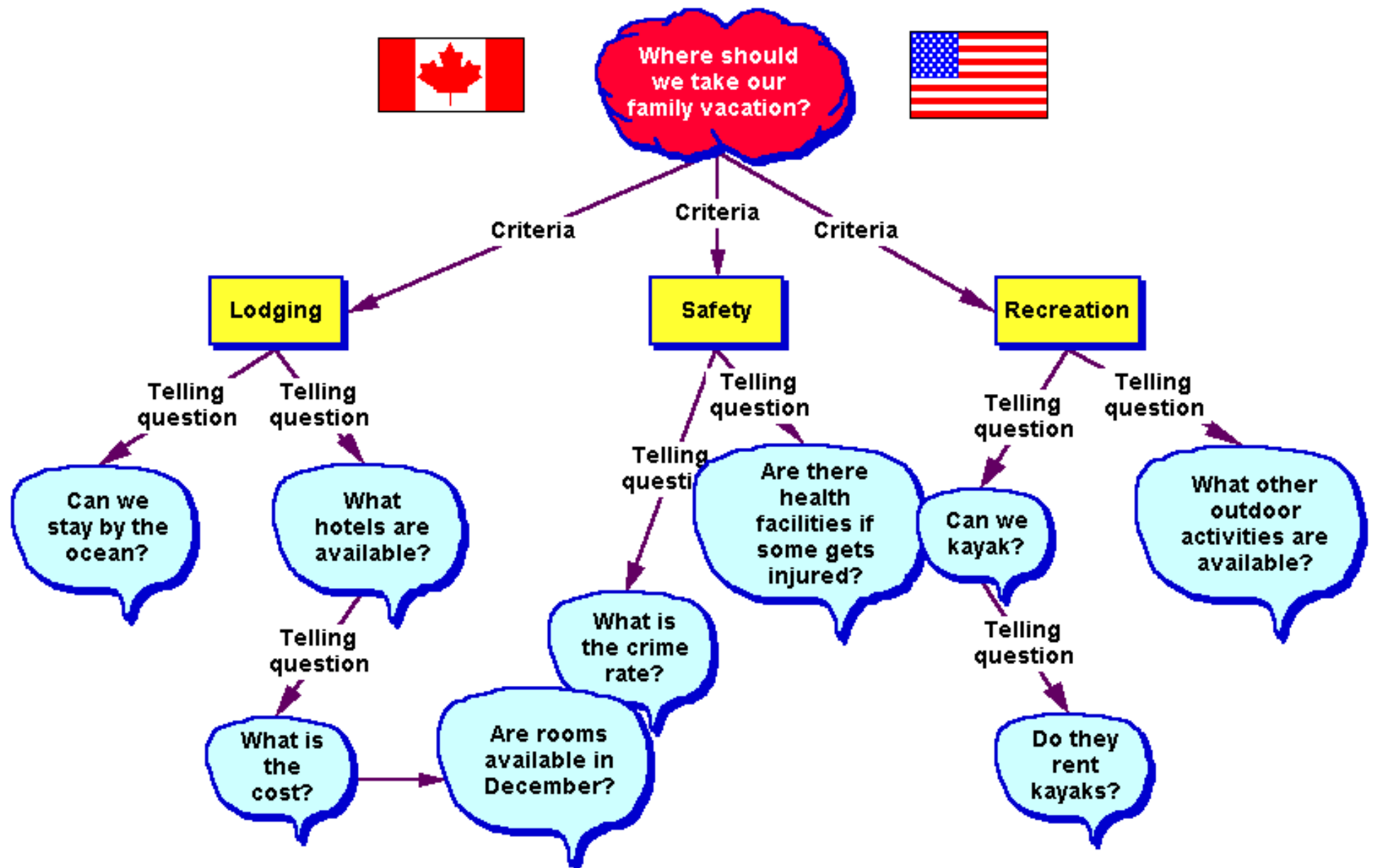
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Research Cycle Concept Map



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Share your graphic organizer!!!

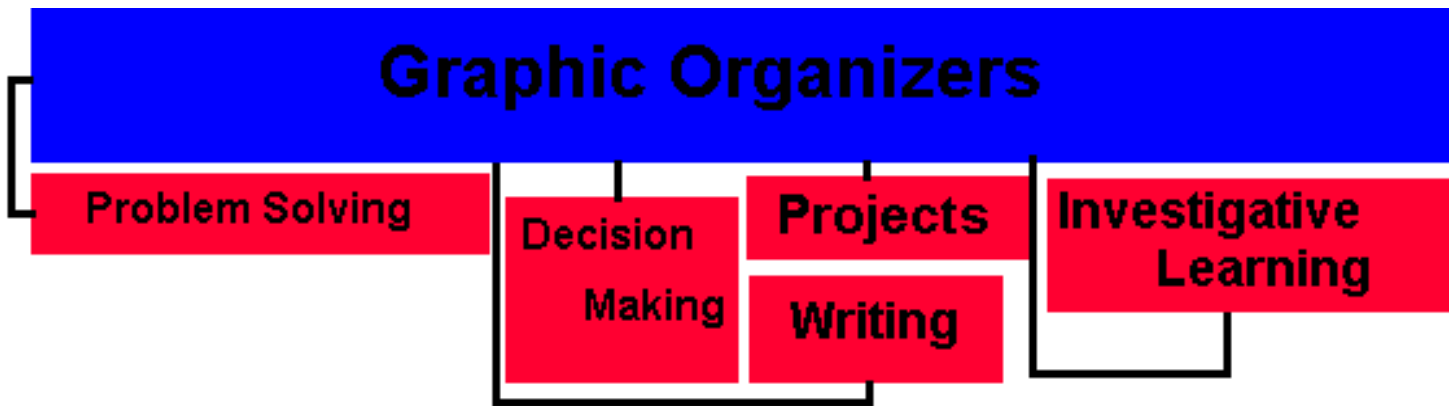
Put your graphic organizer on the web so others can benefit from your experiences. All ages are encouraged to participate.

Your graphic organizer will be added to the [index of graphic organizers](#) with an optional link to your home page or e-mail address.

For more information e-mail your request to: enminds@az.com.

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Name: **Web -- Similie -- What school is..?**

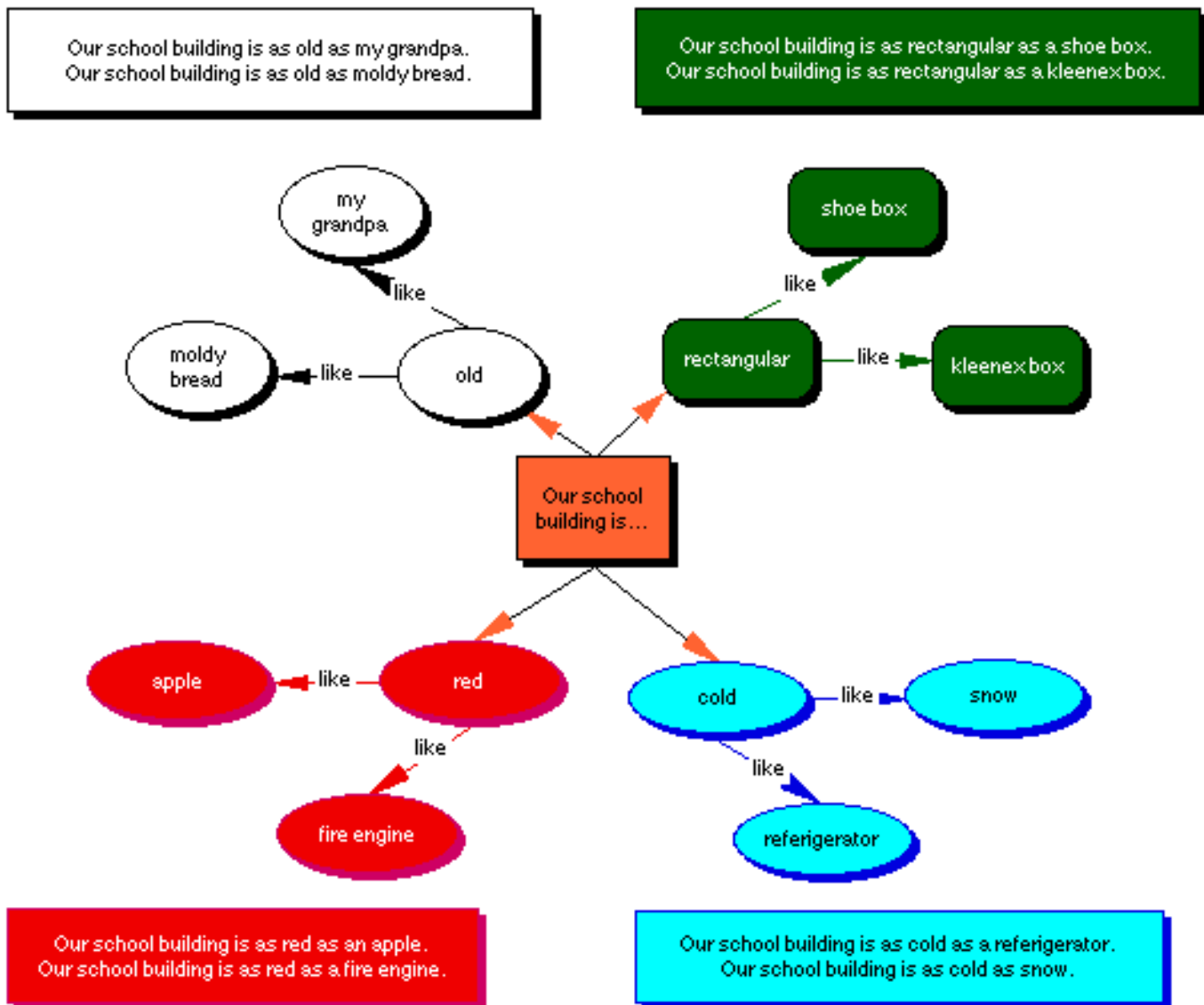
Contributor: Jennifer Keiser

Jennifer is the webmaster at Inspiration Software. You can reach her by [e-mail: inspirat@earthlink.net](mailto:inspirat@earthlink.net) for more information.

Uses:

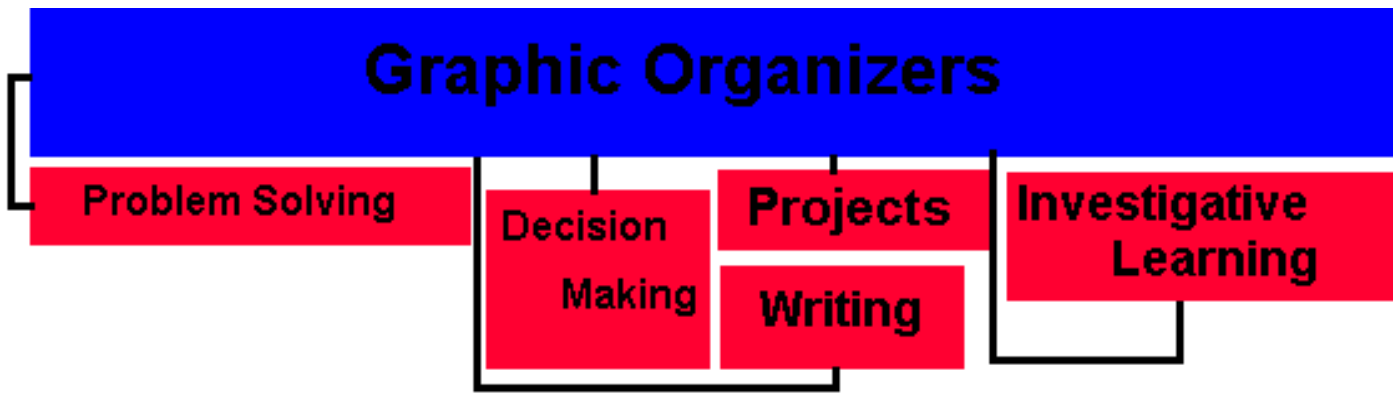
What does school, old, and moldy have in common?

Students generate examples of similes in speech and writing using the topic of school. Use the same strategy for teaching metaphors?



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Name: **Web -- Project Work -- Writing -- Squirrels**

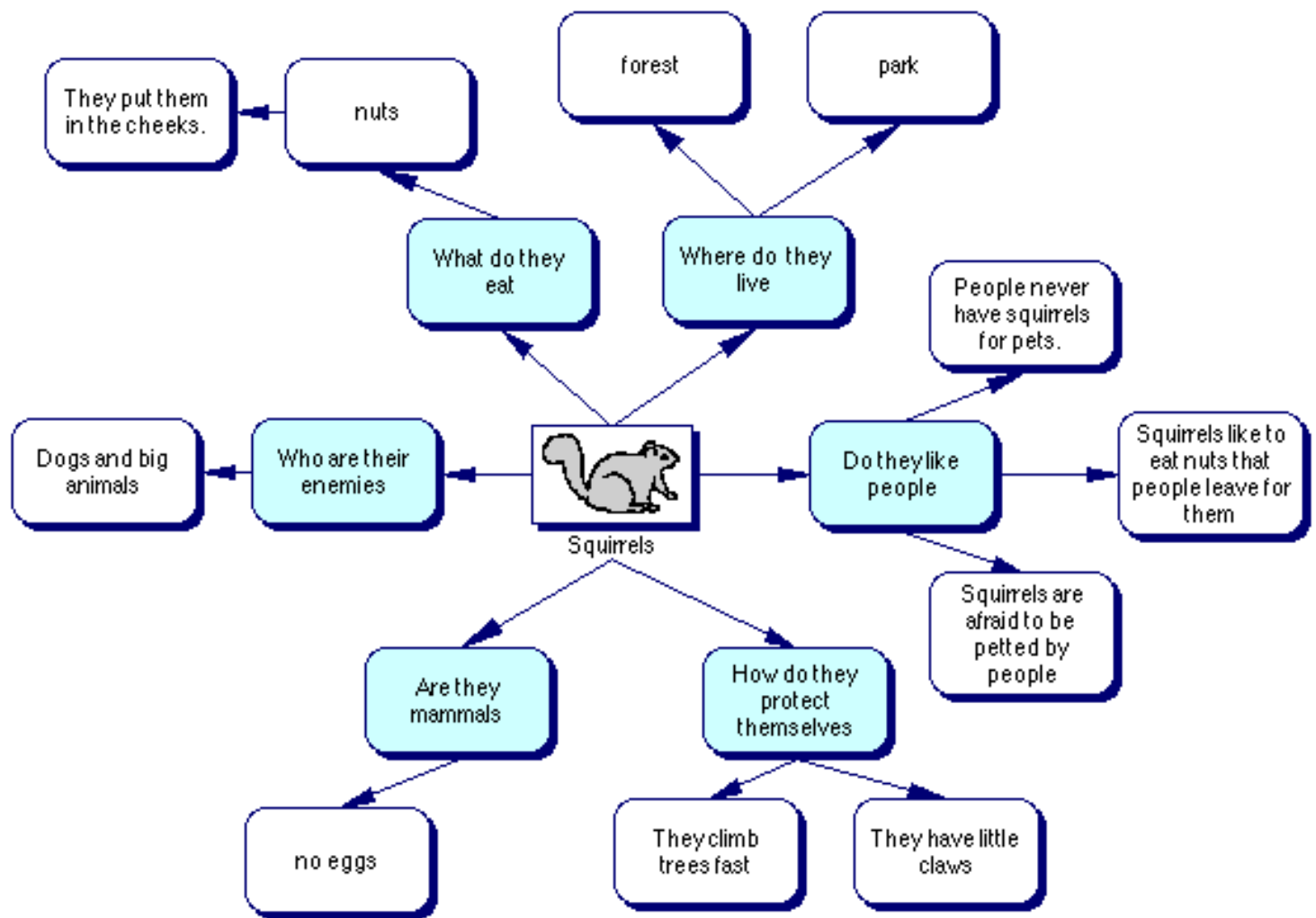
Contributor: Jennifer Keiser

Jennifer is the webmaster at Inspiration Software. You can reach her by [e-mail: inspirat@earthlink.net](mailto:inspirat@earthlink.net) for more information.

Uses:

Do squirrels like people?

Group of children brainstorm questions on the topic of squirrels for descriptive writing and exploration around future project work. This is an excellent way to begin and track project work. For more information on [Project Approach click here](#).



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Name: **Web -- Money -- Initial Brainstorming**

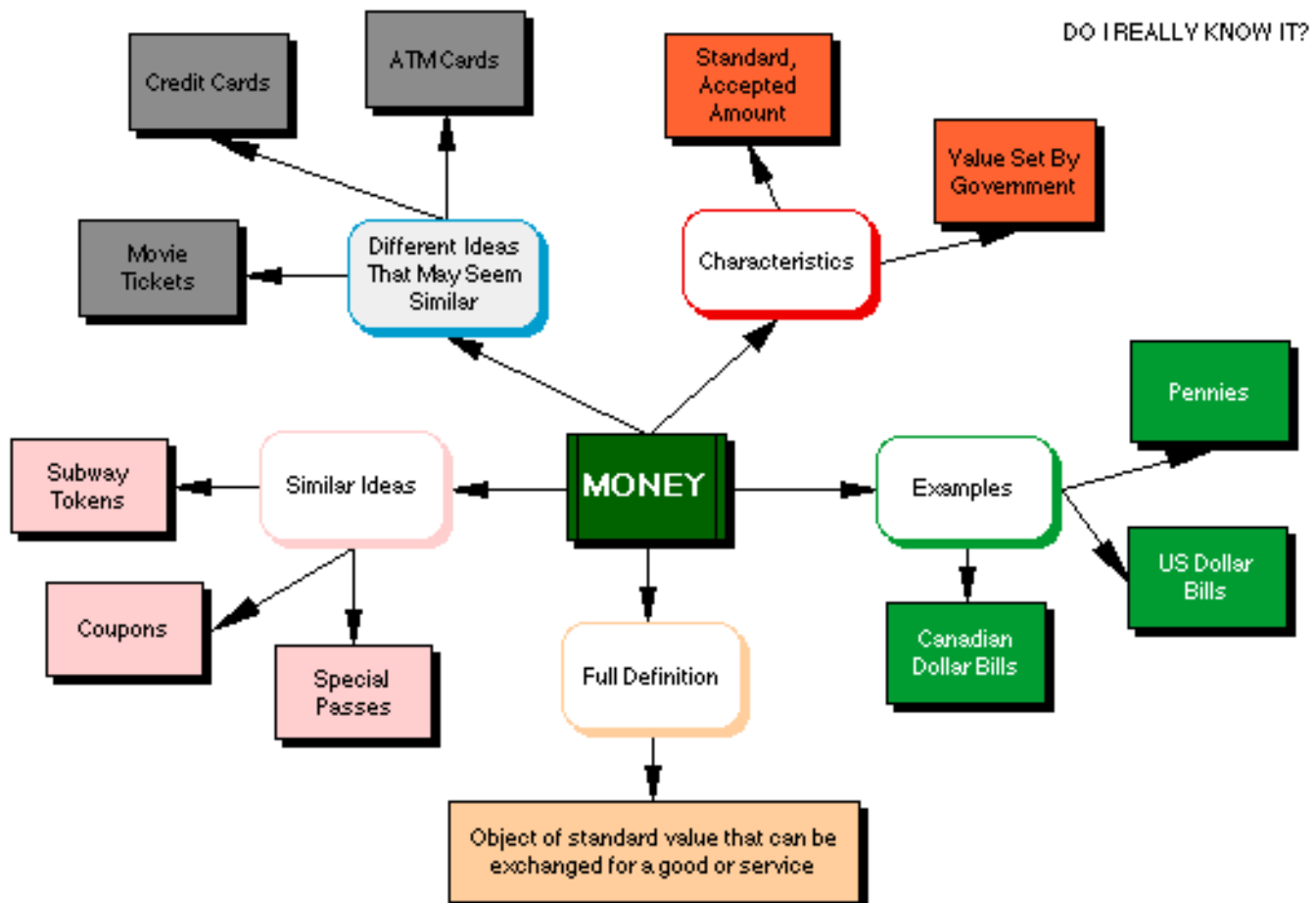
Contributor: Jennifer Keiser

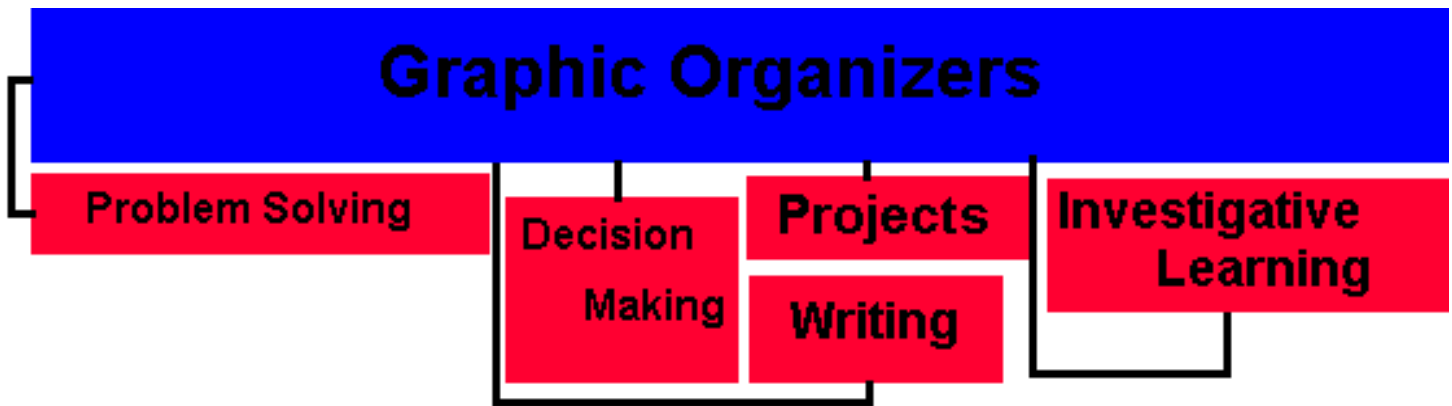
Jennifer is the webmaster at Inspiration Software. You can reach her by [e-mail: inspirat@earthlink.net](mailto:inspirat@earthlink.net) for more information.

Uses:

What do sixth graders think about money?

Teacher collects information in an initial discussion on "what they know" about money.





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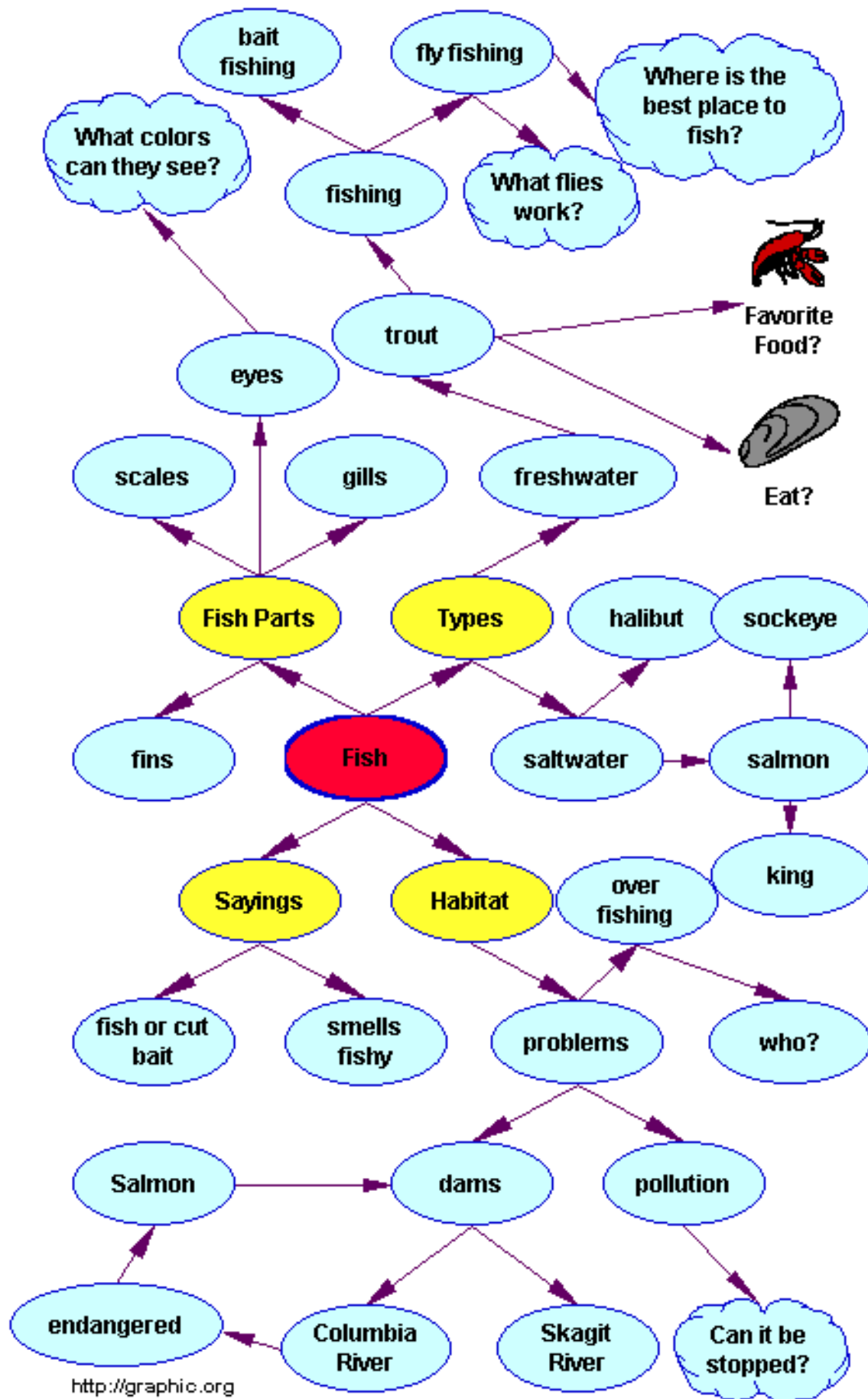
Name: **Brainstorming Web**

Description: Ideas and questions are linked.

Uses: Generate ideas and questions, access prior knowledge, assess interests and knowledge, develop probing questions and problems.

Critical Questions:

- What is the topic or question to brainstormed?
- Is the process clear for brainstorming?



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Suggestions:

- Relax. Play some creative music.
- Spelling or style doesn't count.:>)
- Don't worry about organization.
- Free-associate ideas. Keep them simple.
- Write or sketch as quickly as you can.
- Write or sketch in any order.
- Develop all ideas.
- Keep working.

Webbing Strategies:

- Work from a central idea, concept, topic or question, gathering and linking thoughts in text and/or pictures. Expand thoughts from the center like branches on a web. Weave the web. When one branch stops or an idea doesn't fit create a new branch.
- An alternative is to free associate a random list then sift, sort and develop relational links and design the web. Expand web branches and links. Explore any associations that strike your fancy.
- Use paper and pencil, text or free sketch. Connect thoughts with relational links. Use sticky notes as an effective alternative. Free associate a different idea on each note, regroup the sticky notes into categories, then construct a web on butcher paper. Use different colored sticky notes to denote headings or categories that emerge from the brainstorm. Develop links on the paper -- text or sketches can be added at any time.
- By far the most effective and efficient method is to use a commercial software program such as Inspirations.
- Software programs have significant advantages over paper and pencil. They encourage building, creating and inventing -- yet keep the web legible. Webs become unwieldy as they grow. Software program manage growth. Select the look -- cluster, branching, right to left etc. Try different looks and nudge the cells to for style. An emerging new thought? Click on another cell or start a new branch. Change of mind? New insight? Revise, move, delete and paste. Save, print, or export the map into various formats. Some programs produce a nice neat linear text outline. Cool!
- Group guidelines are a must when for maximum effectiveness. Use a strategy called 'Think, Pair, Share'. Work from individual association to sharing with a partner then collaborating as a group to develop the web.

Useful links:

Creative Education Foundation at SUNY [\[online\] Steps in the Brainstorming Procedure](http://www1.rider.edu/~suler/brainstorm.html)
<http://www1.rider.edu/~suler/brainstorm.html>, 1996.

United States Junior Chamber of Commerce [\[online\] How To Use Brainstorming](http://dfsistemas.com/thebook/brain.html)
<http://dfsistemas.com/thebook/brain.html>, 1997.

Jane Fritz [\[online\] Brainstorming Guidelines](#)

<http://wwwos2.cs.unb.ca/profs/fritz/cs3503/storm35.htm>, 1997.

Saskatchewan Education Curriculum and Instruction Branch -- The Evergreen Curriculum [\[online\] Purpose, Procedures, Assessment](#) http://www.sasked.gov.sk.ca/docs/ela/ela_brai.html, 1997.

Mind Tools [online] [How to Brainstorm Individual vs. group brainstorming](#)

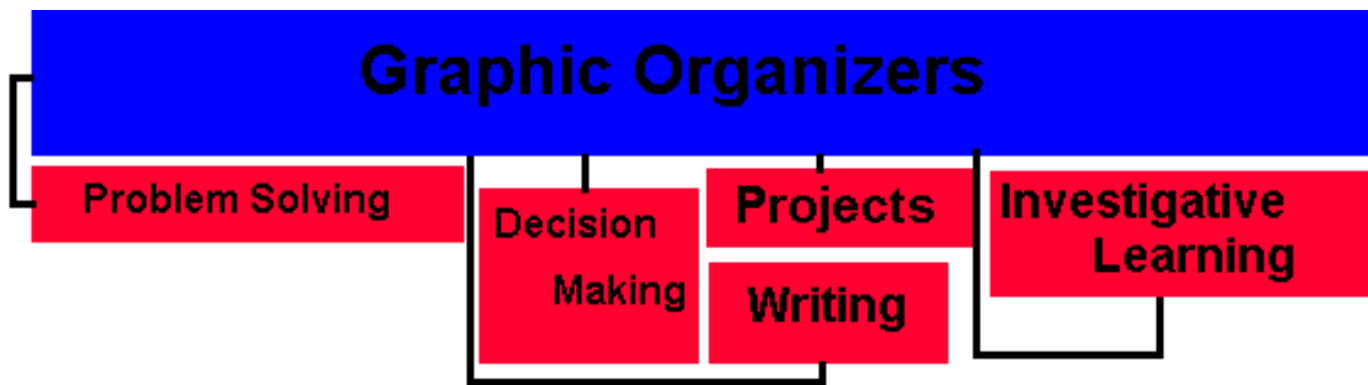
<http://www.mindtools.com/brainstm.html>, 1996.

Chris Jarvis [\[online\] Rules: Suggestions for Brain-storming Process](#)

Advantages/Disadvantages <http://wwwbs.wlihe.ac.uk/~jarvis/bola/quality/brain.html>,1996.

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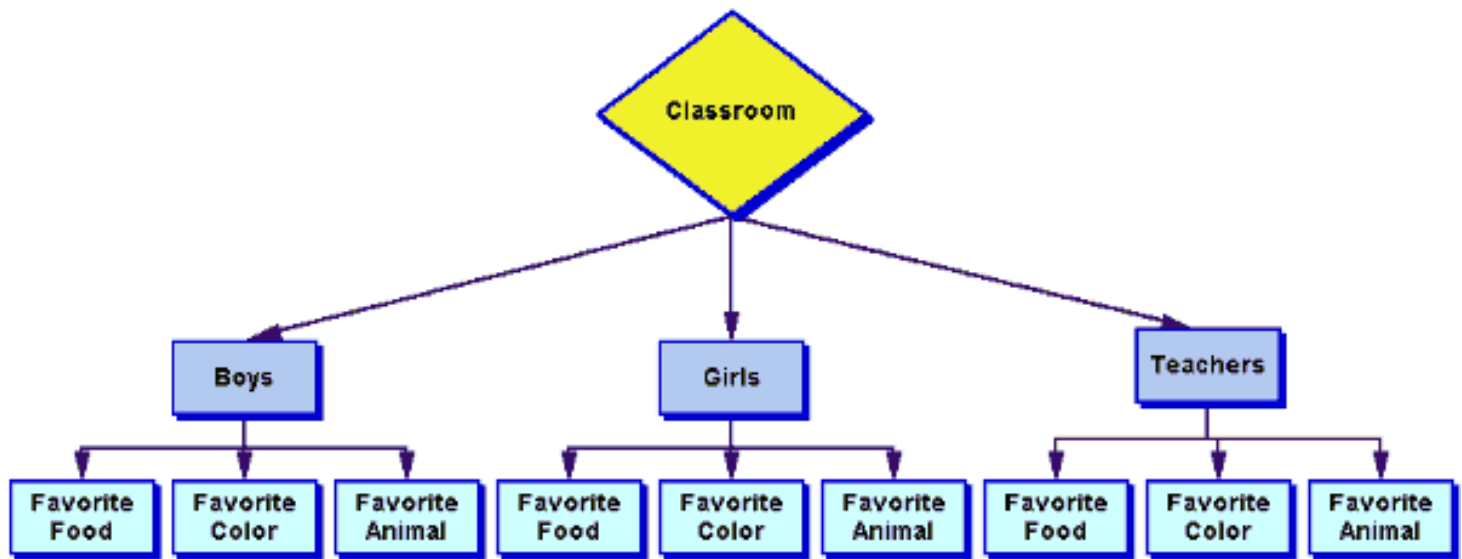


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Name: **Hierarchy Diagram**

Description: Topics and attributes are linked by subordinate relationships.

Uses: Group items (things, people, places, events, ideas, etc.) into categories.



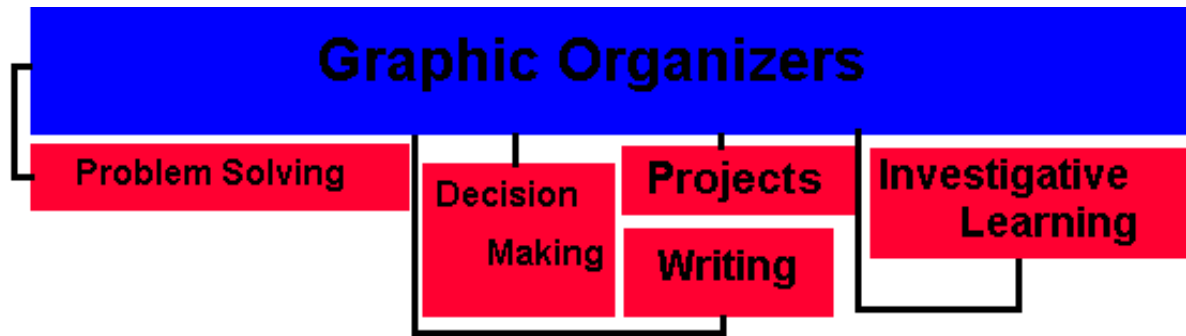
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Critical Questions:

- What items do we want to put together or classify? Top tier.
- How can we put them into groups that are alike? Second tier. Develop a rule to describe the group as to why they are alike.
- Are there any items that do not belong? If so create another group. (third tier)
- Repeat process until all items are classified.

Suggestions: Initially students can either free associate items then begin to group or start with one major item and add links. Using tiers or rows helps the student to visualize classifying and breaking items into categories.

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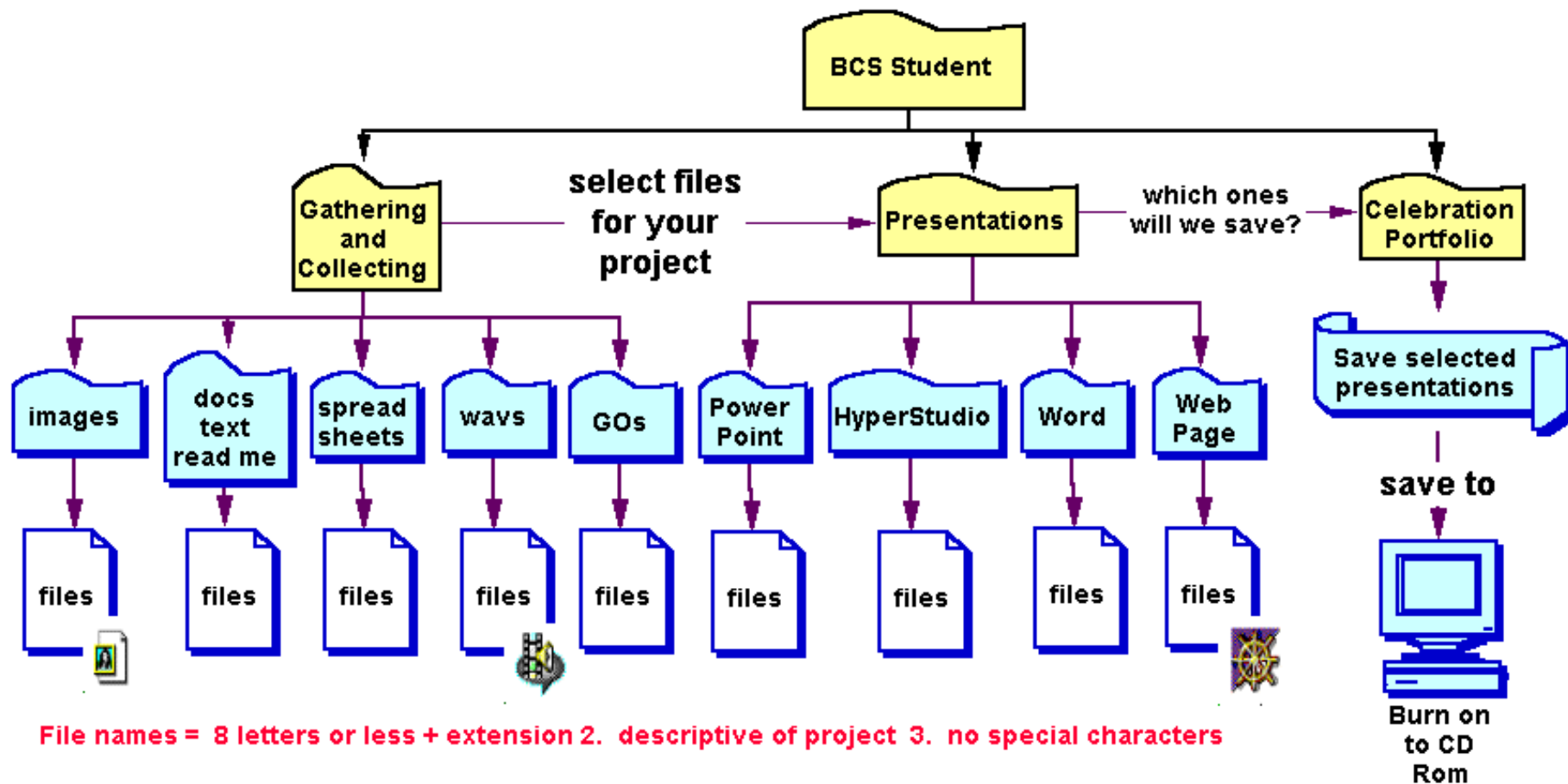
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Name: File System -- Desktop Management -- Hierarchy Diagram

Description: Folders and Files are linked by subordinate relationships. Flow of information gathering to portfolio collection moves from left to right.

The diagram was created by students to organize collection and distribution of information. The structure and flow is designed to accommodate collecting small fragments of information, developing projects and CD ROM portfolio.

Uses: Develop a student filing system to organize their classroom NT desktop.



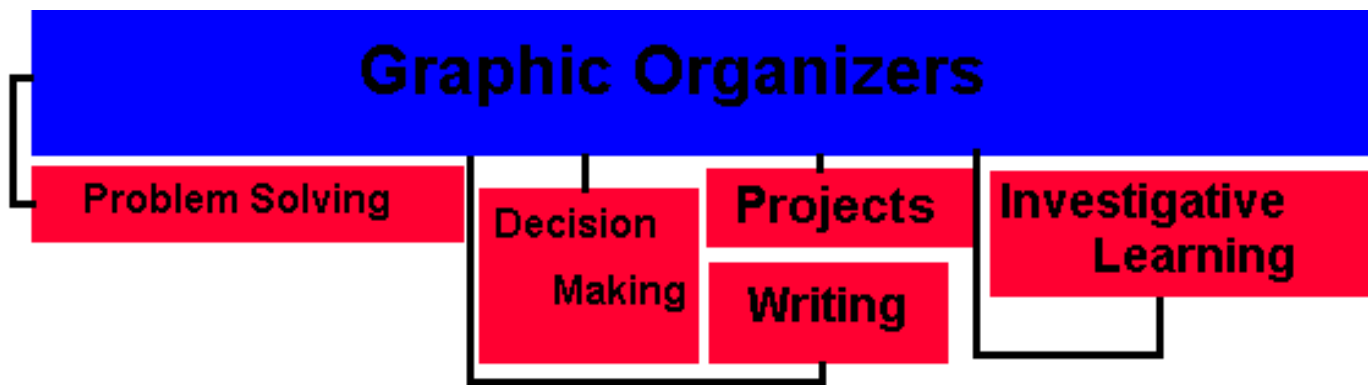
Critical Questions:

- What folders do we want to create? Why?
- What types of files do we want to keep in each folder?
- Are there any files that do not belong?

Suggestions: Initially students can either free associate names of folders and files they want to create and save; in turn, select files to save in which folders. Using tiers or rows helps the student to visualize classifying and placement.

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Name: **KWHL Chart**

Description: Matrix for planning and gathering initial information.

Uses: Accessing prior information on a topic or theme, identifying primary and secondary resources to access, developing a plan for accessing resources, identifying attributes and characteristics to research.

Critical Questions:

- What do we already know?
- What do we want to find out?
- How are we going to find out? What primary and secondary resources can we access?
- What attributes or characteristic should we focus on?

Suggestions: Excellent tool to access prior information and to develop a plan for investigation. See [AERO](#) for details and options for types of primary and secondary resources tht could be accessed. Other graphic organizers can be linked as an extension of the KWHL Chart. A similar [version](#) can be used for active thinking during reading.

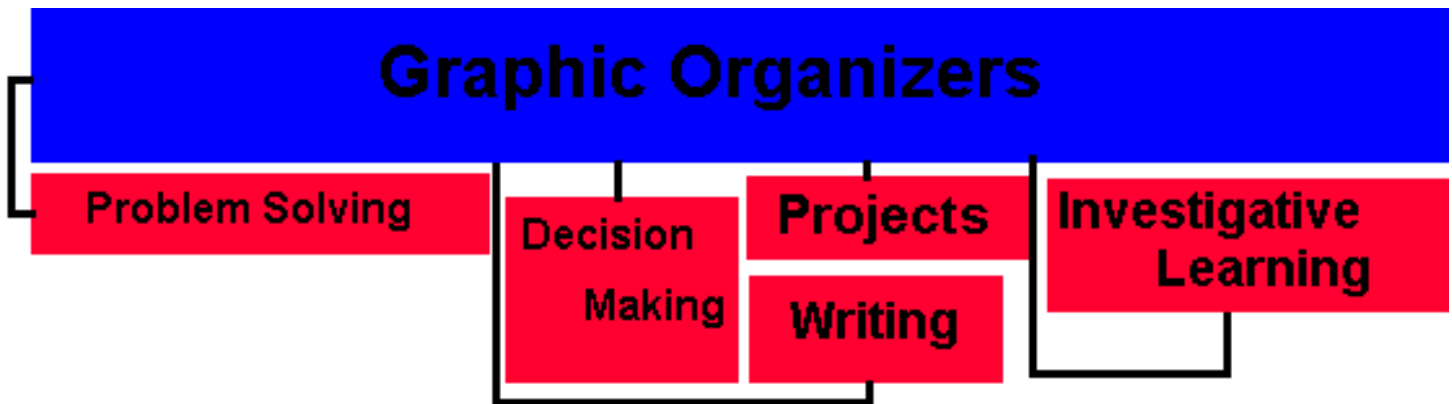
K	W	H	L
What do we <u>k</u>now?	<u>W</u>hat do we want to find out?	<u>H</u>ow can we find out what we want to learn?	What did we <u>l</u>earn?

Attributes or Characteristics we expect to use:

<http://www.graphic.org> exminda@az.com

Related Links: [NCREL K-W-L-H Technique for Reading](#)-- This is a different version of the KWL Chart and can be used to create active thinking during reading.

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Name: **Linear String**

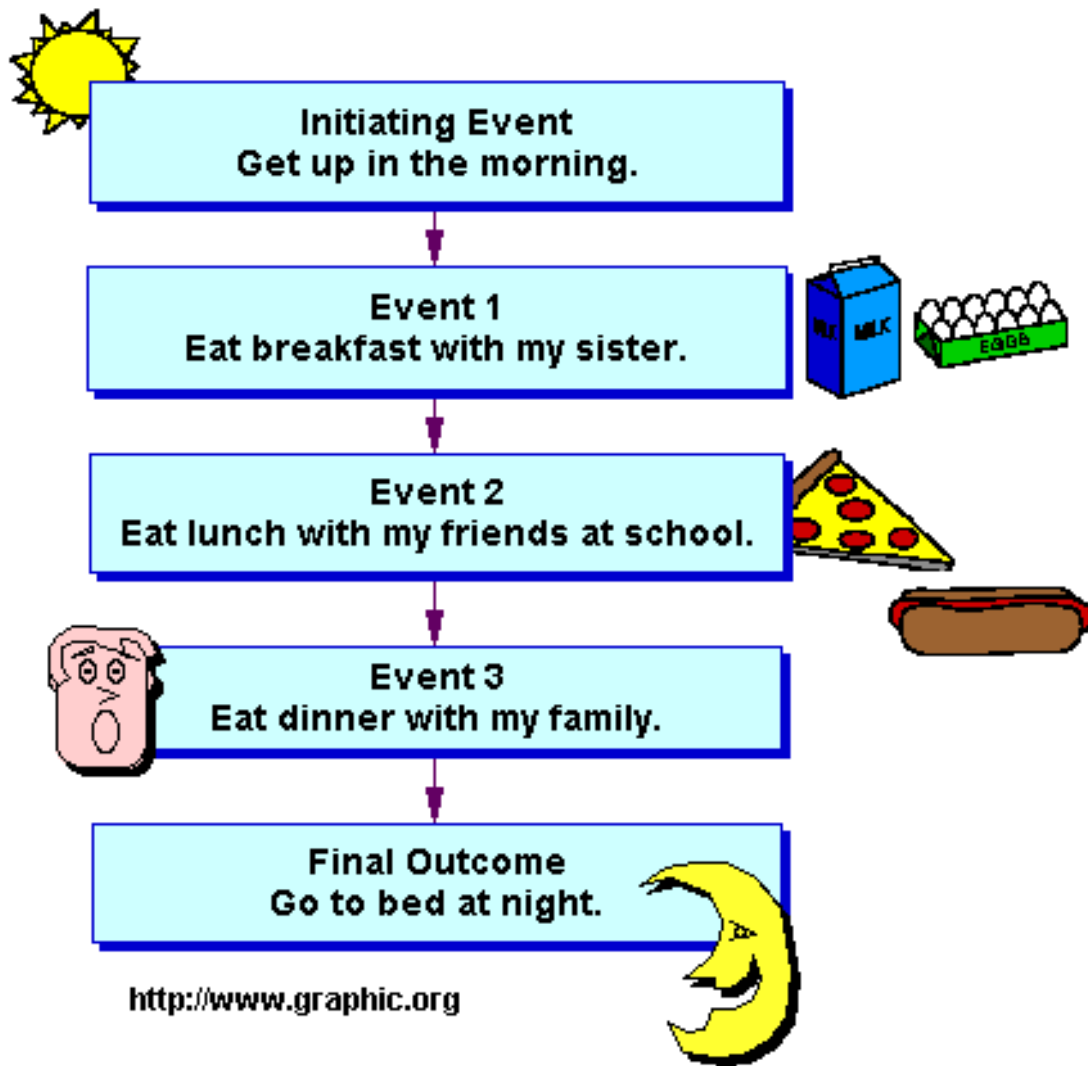
Description: Events are linked by time.

Uses: Describe a sequence of events, stages, phases, actions and outcomes.

Critical Questions:

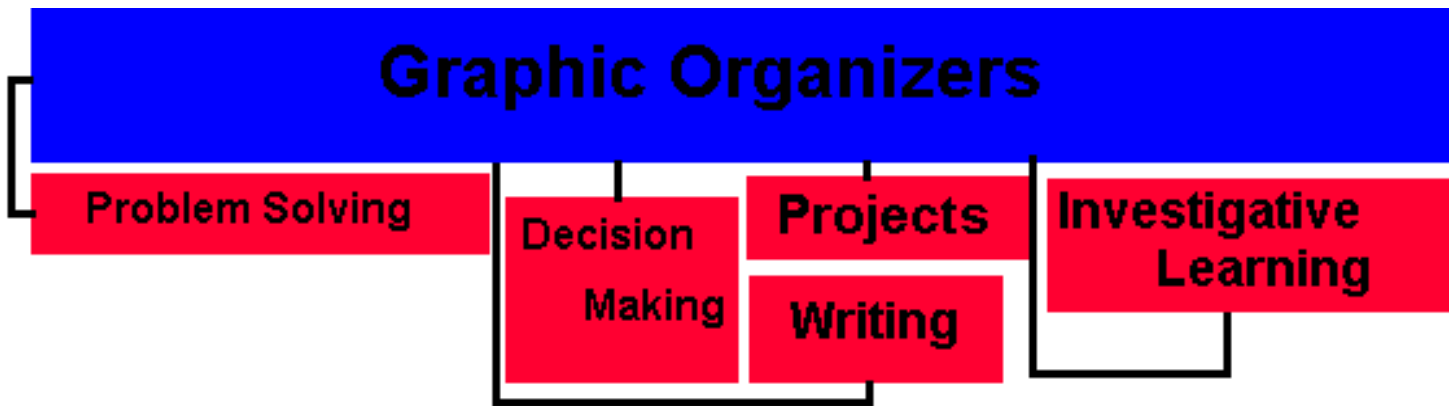
- What is the name of the event, procedure or human figure that will be described?
- What are the stages, steps, phases or events?
- How do the stages, steps, phases or events relate to one another?
- What is the final outcome?

Remarks: This version is good for use with young children and as a first step in developing linear relationships. A more complex [expanded version](#) of Linear String is available.



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Name: **Expanded Linear String**

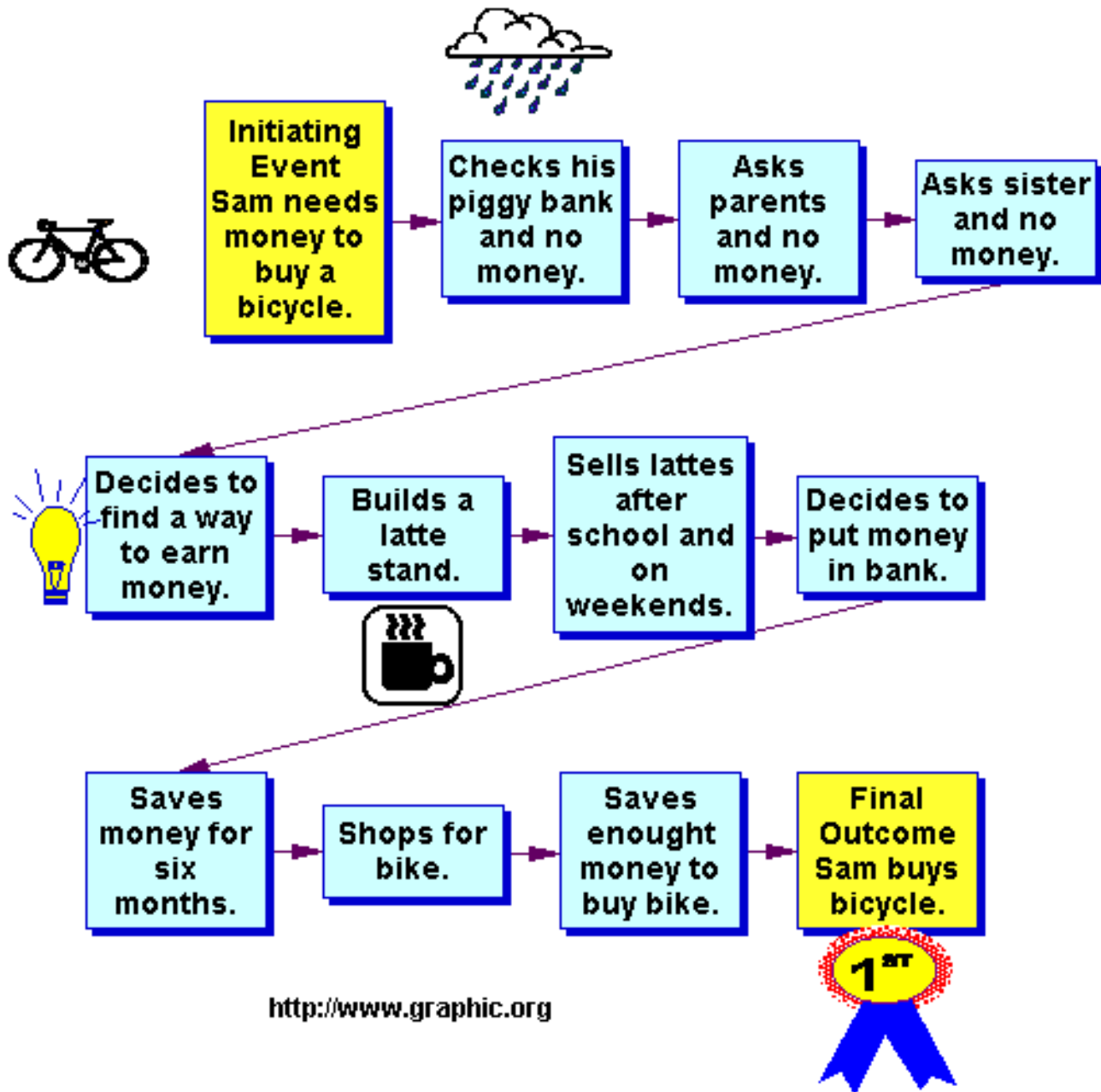
Description: Events are linked by time.

Uses: Describe a sequence of events, stages, phases, life cycles, actions and outcomes.

Critical Questions:

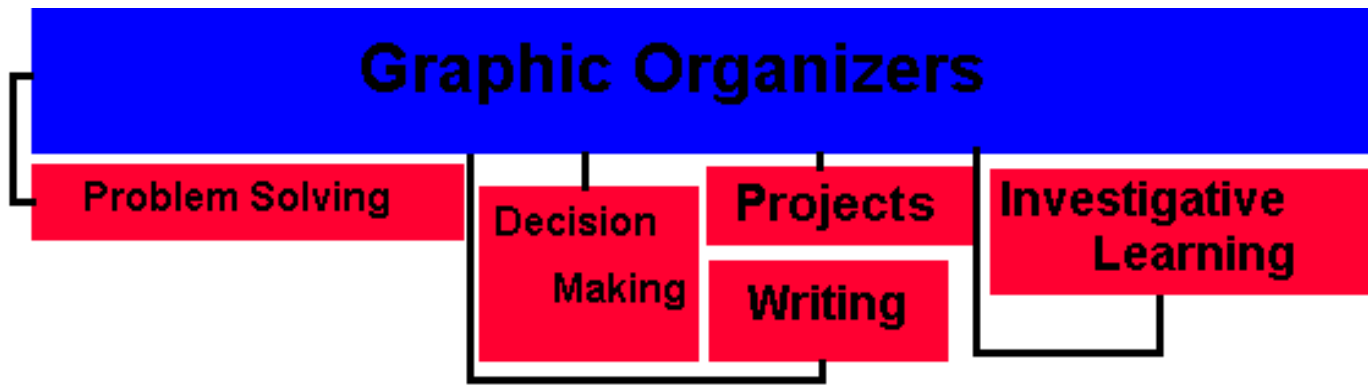
- What is the name of the event, procedure or human figure that will be described?
- What are the stages, steps, phases or events?
- How do the stages, steps, phases or events relate to one another?
- What is the final outcome?

Remarks: A [basic version](#) of the Linear String Chart is linked.



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Name: Dominoe Effect String

Description: Events are linked by time. A subsequent event requires a preceeding event to happen.

Uses: Describe a sequence of events, stages, phases, life cycles, actions and outcomes that require a preceeding event to happen.

Critical Questions:

- What is the name of the event, procedure or human figure that will be described?
- What are the stages, steps, phases or events?
- How do the stages, steps, phases or events relate to one another?
- What happens if an event does not take place?
- What is the final outcome?

Remarks:The [Linear String](#) can serve the same purpose as the Dominoe Chart to describe events that require a preceeding event to happen. Add the critical question: What happens if an event does not take place?