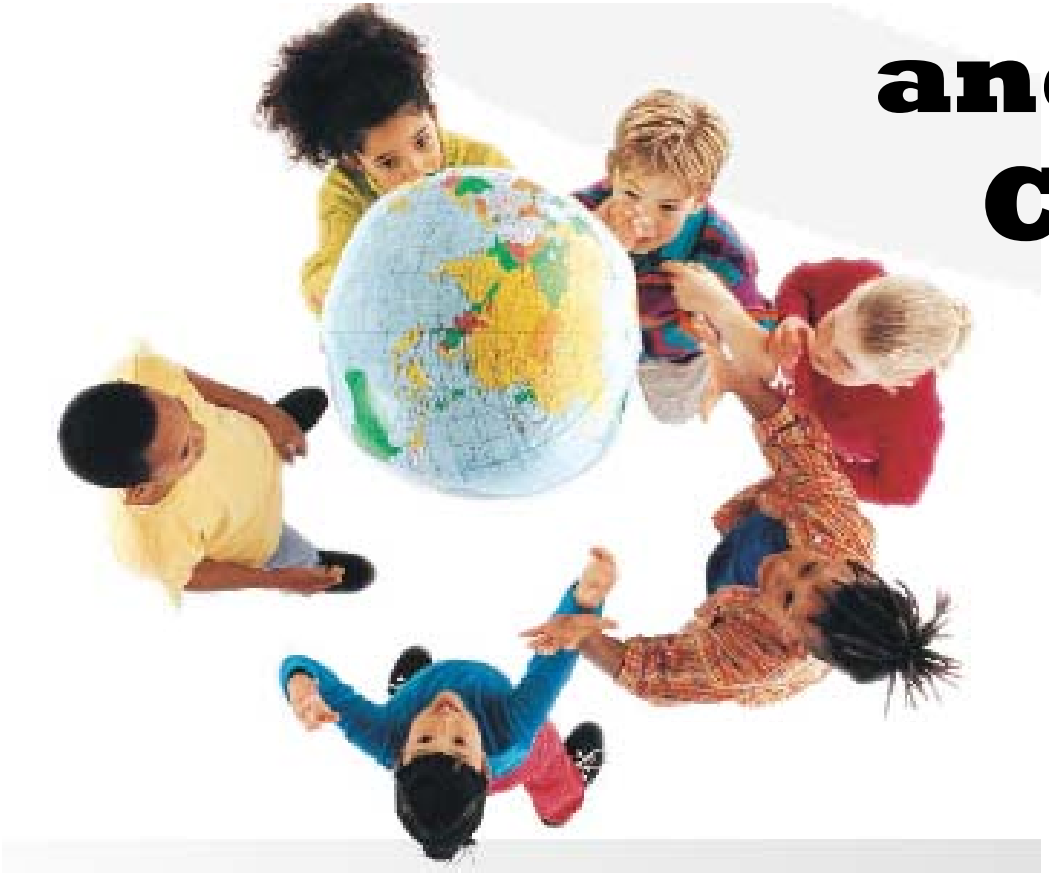
Project Based Learning for College and Career Readiness



Presented by
La Villa ISD
December 2, 2010

Presentation Agenda

- What is Project Based Learning?
- TX College & Career Readiness Standards
- Training Resources (Folder Content)
- Culminating Project Ideas
- La Villa's PBL Calendar of Events
- La Villa's College & Career Scholars Program

What is Project-Based Learning?

Project Based Learning is an instructional approach built upon *authentic learning activities* that engage student interest and motivation.

Green Handout

What is Project-Based Learning?

These activities are designed to answer a question or solve a problem and generally reflect the types of learning and work people do in the everyday world outside the classroom.

Project Based Learning teaches students 21st century skills as well as content.

These skills include:

*communication and presentation skills,

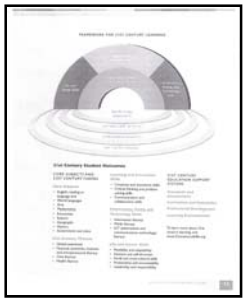
*organization and time management skills,

*research and inquiry skills,

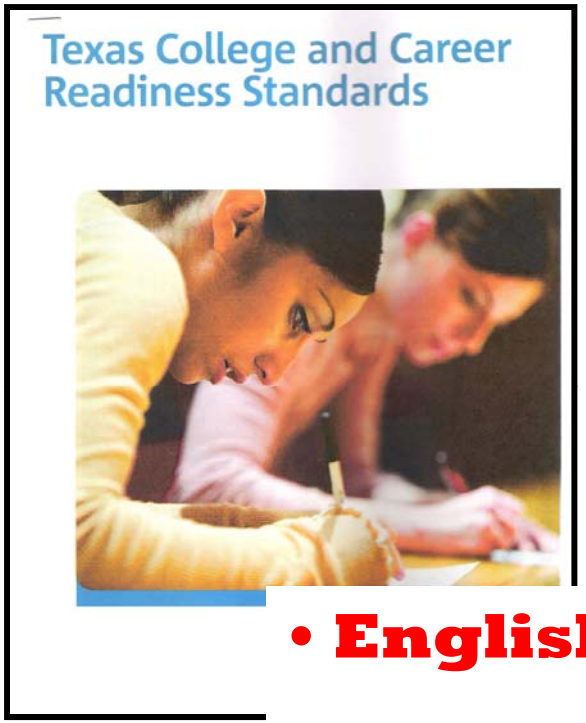
*self-assessment and reflection skills, and

*group participation and leadership skills.

21st Century Learning Handout



Texas College and Career Readiness Standards



"Generally, the more standards a student can demonstrate successfully, the more likely it is that he or she will be college ready."

- **English/Language Arts Standards**
- **Mathematics Standards**
- **Science Standards**
- **Social Studies Standards**
- **Cross-Disciplinary Standards**

Texas College & Career Readiness Standards

Texas College & Career Readiness Standards

ELA	**I. Writing** A. Compose texts that demonstrate clear focus, the logical development of ideas in well-organized paragraphs, and the use of appropriate language that advances the author's purpose.	**II. Reading** A. Locate textual information, draw complex inferences, and analyze and evaluate the information. B. Vocabulary use C. Describe, analyze, & evaluate information in texts	**III. Speaking** A. Elements of communication B. Speaking Styles	**IV. Listening** A. Apply listening skills in lectures, discussions, conversations, team projects, presentations, interviews. B. In informal /formal listening situations.	**V. Research** A. Formulate topic & question. B. Select information from a variety of sources. C. Produce & design a document.
Math	**I. Numeric Reasoning** A. Number representation B. Number Operations C. Number sense & concepts	**II. Algebraic Reasoning** A. Expressions & equations B. Manipulating expressions C. Solving equations, inequalities D. Representations	**III. Geometric Reasoning** A Figures & properties B. Transformations & symmetry C. Connections D. Logic & reasoning	**IV. Measurement Reasoning** A. Physical & natural attributes B. Systems of measurement C. Geometry & algebra D. Statistics & probability	**V. Probabilistic Reasoning** A. Counting principles B. Computations & interpretations of probabilities
	VI. Statistical Reasoning A. Data collection B. Describe data C. Read, analyze, interpret & draw conclusions form data	**VII. Functions** A. Recognition & representation of functions B. analysis of functions C. Model real world situations with functions.	**VIII. Problem Solving & Reasoning** A. Mathematical problem solving B. Logical reasoning C. Real world problem solving	**IX. Communication & Representation** A. Language, terms, & symbols B. Interpretation of math work C. Presentation and representation of math	**X. Connections** A. Connections among the strands of math B. Connections of math to nature, real world situations, and everyday life.
Science	**I. Nature of Science: Scientific Ways of Learning and Thinking** A. Cognitive skills B. Scientific Inquiry C. Collaborative & safe working practices D. Current scientific technology E. Effective communication of scientific information	**II. Foundation Skills: Scientific Application of Mathematics** A. Basic Math conventions B. Mathematics as symbolic language C. Relationships among geometry, algebra, & trigonometry D. Scientific problem solving E. Scientific application of probability & statistics F. Scientific measurement	**III. Foundation Skills: Scientific Application of Communication** A. Scientific writing B. Scientific reading C. Presentation of scientific & technical information D. Research skills/information literacy	**IV. Science, Technology, and Society** A. Interactions between innovation & science B. Social Ethics C. History of Science	**V. Cross-Disciplinary Themes** A. Matter/states of matter B. Energy (thermodynamics, kinetics, potential, energy transfers) C. Change over time/ equilibrium D. Classification E. Measurement and models
	VI. Biology A. Structure & function of cells B. Biochemistry C. Evolution & populations D. Molecular genetics & heredity E. Classification & taxonomy F. Systems & homeostasis G. Ecology	**VII. Chemistry** A. Matter & its properties B. Atomic structure C. Periodic Table D. Chemical bonding E. Chemical reaction F. Chemical nomenclature G. The mole & stoichiometry H. Thermochemistry I. Gases, liquids, & solids J. Molecules proteins, carbo., lipids, nucleic acids K. Nuclear chemistry	**VIII. Physics** A. Matter B. Vectors C. Forces & motion D. Mechanical Energy E. Rotating systems F. Fluids G. Oscillations & waves H. Termodynamics I. Electromagnetism J. Optics	**IX. Earth & Space Sciences** A. Earth systems B. Sun, Earth, & moon system C. Solar system D. Origin & structure of the universe E. Plate tectonics F. Energy transfer within & among systems	**X. Environmental Science** A. Earth systems B. Energy C. Populations D. Economics & politics E. Human practices and their impacts
Social Studies	**I. Interrelated Disciplines & Skills** A. Spatial analysis of physical & cultural processes that shape the human experience B. Periodization & chronological reasoning C. Change & political ideologies, constitutions, & political behavior D. Change & continuity of economic [illegible] E. Change of [illegible] groups, civic organizations, institutions, & their interaction F. Problem solving & decision making skills	**II. Diverse Human Perspectives & Experiences** A. Multicultural societies B. Factors that influence personal & group identities (race, ethnicity, gender, nationality, institutional affiliations, [illegible]economic status)	**III. Interdependence of Global Communities** A. Spatial understanding of global, regional, national, & local communities B. Global Analysis	**IV. Analysis, Synthesis, and Evaluation of Information** A. Critical examination of texts, images, and other sources of information B. Research & methods C. Critical listening D. Reaching conclusions	**V. Effective Communication** A. Clear & coherent oral and written communication B. Academic integrity
Cross Disciplinary	**I. Key Cognitive Skills** A. Intellectual curiosity B. Reasoning C. Problem Solving D. Academic Behavior E. Work habits F. Academic Integrity	**II. Foundational Skills** A. Reading across the curriculum B. Writing across the curriculum C. Research across the curriculum D. Use of data E. Technology			

Cross Disciplinary Standards

Cross-Disciplinary Standards

KEY COGNITIVE SKILLS

- Intellectual Curiosity
- Reasoning
- Problem Solving
- Academic Behavior
- Work Habits
- Academic Integrity

FOUNDATIONAL SKILLS

- Reading across the curriculum
- Writing across the curriculum
- Research across the curriculum
- Use of Data
- Technology

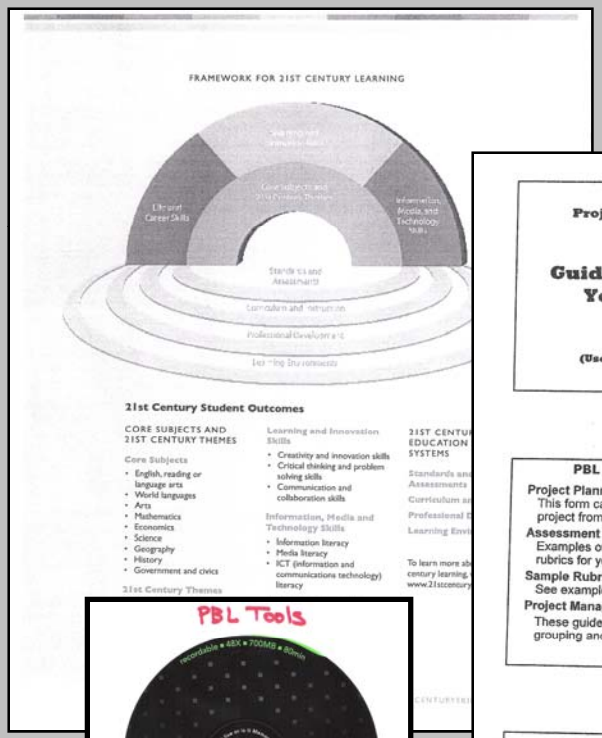
Why Project Based Learning?

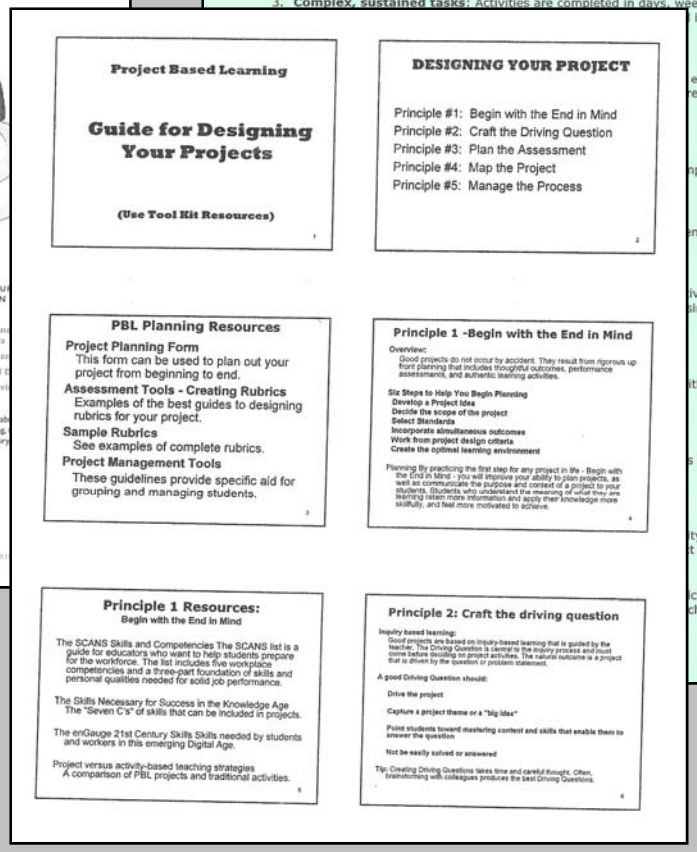
New, Different Skill Demands…21st Century jobs require more educated workers with the ability to respond flexibly to complex problems, communicate effectively, manage information, work in teams, and produce new knowledge.

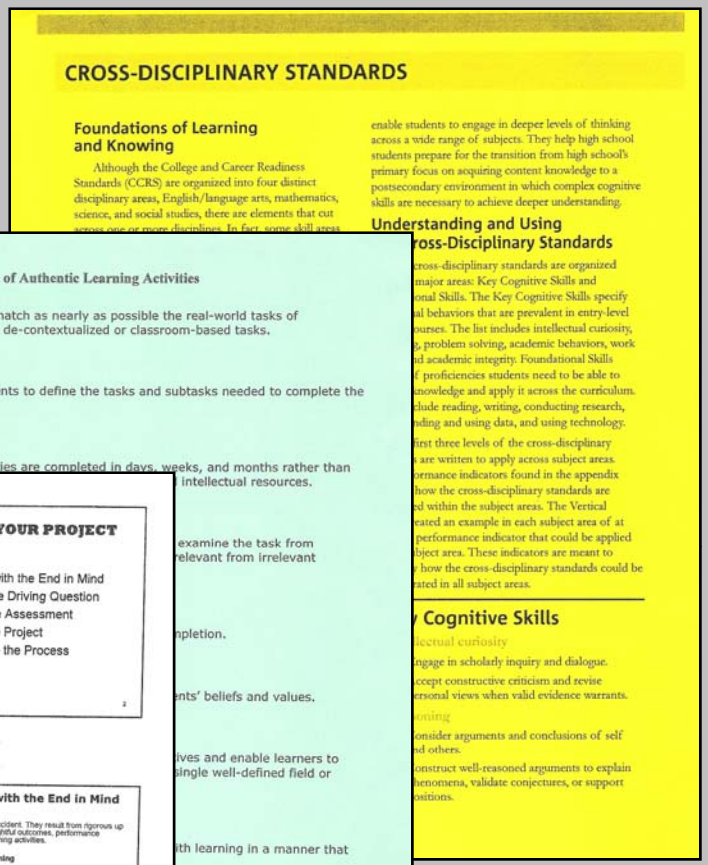
(Partnership for 21st Century Skills, 2008)

Training Material

(Folder Content)







1st critical feature

in successful project-based instruction in K-12 classrooms.

Help students develop a **"driving question"** that is anchored in a real-world problem and ideally uses multiple content areas:

- ELA- writing, grammar use …
- Math-problem solving, applied math …
- Science-scientific method …
- Social Studies-historic, economic, societal …
- Career-interest, survey, research …

2nd critical feature

in successful project-based instruction in K-12 classrooms.

Provide opportunities for students to make active investigations that enable them to:

- learn concepts
- apply information, and
- represent their knowledge in creative ways.

3rd critical feature

in successful project-based instruction in K-12 classrooms.

Encourage collaboration among students, teachers, and others in the community so that knowledge can be shared and distributed between the members of the "learning community" .

- Cooperative work
- Work with mentors
- Interviews
- Display projects
- Presentations on projects

4th critical feature

in successful project-based instruction in K-12 classrooms.

Encourage the use of cognitive tools in learning environments that support students in the representation of their ideas:

- Use of computer-based laboratories, hypermedia, telecommunications
- Researching
- Graphing applications
- Communication skill development

PBL encourages the development of a Culminating Products

A ***culminating product*** is due at the end of the project and often represents a blend of content knowledge and skills that give students an opportunity to demonstrate learning across a variety of topics and skills. Culminating products are often presented during significant, high-stakes occasions involving audiences beyond the classroom, thus encouraging students to go beyond "show-and-tell" and to demonstrate in-depth learning. Examples of culminating products include:

Research Papers: A culminating product can be a traditional essay or research paper.

Reports: Students investigating a major issue in a project may conduct an analysis or do research on an important societal or community question. This can culminate in a report to the community or to the school.

Multimedia Presentations: Using digital media, students can create an electronic presentation that can be included in an on-line portfolio or shown at an exhibition.

Presentations Within the School: Presentations or demonstrations to school-wide assemblies or other classrooms are effective environments for increasing the quality of student performances. If it is possible, you should avoid having students present only to members of their own class.

Exhibitions Outside of School: Presentations to parents and community members can consist of oral presentations or presentation of an art or media project. Learn more about exhibitions here.

Traditional Tri-fold

Paper on Chemical Reactions

By Johnny Garcia

xxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxx
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CHEMICAL REACTIONS

Procedures

Step 1:xxxxxxxxxxxxxxx
Step 2:xxxxxxxxxxxxxxx
Step 3:xxxxxxxxxxxxxxx
Step 4:xxxxxxxxxxxxxxx

Hypothesis

xxxxxxxxxxx
xxxxxxxxxxx
xxxxxxxxxxx
xxxxxxxxxxx
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Chemicals Used

xxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxx
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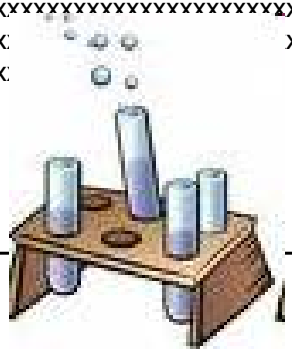
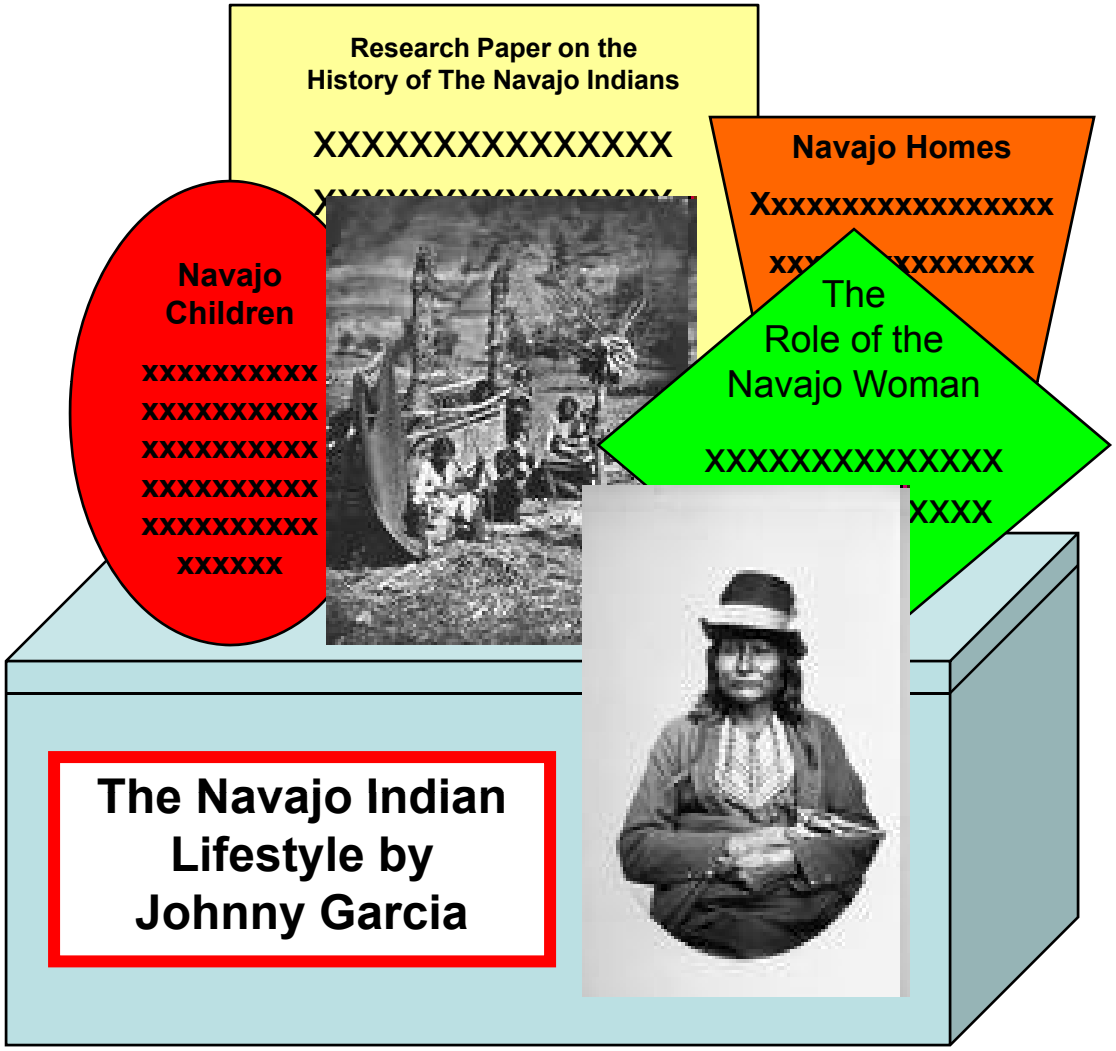
xx

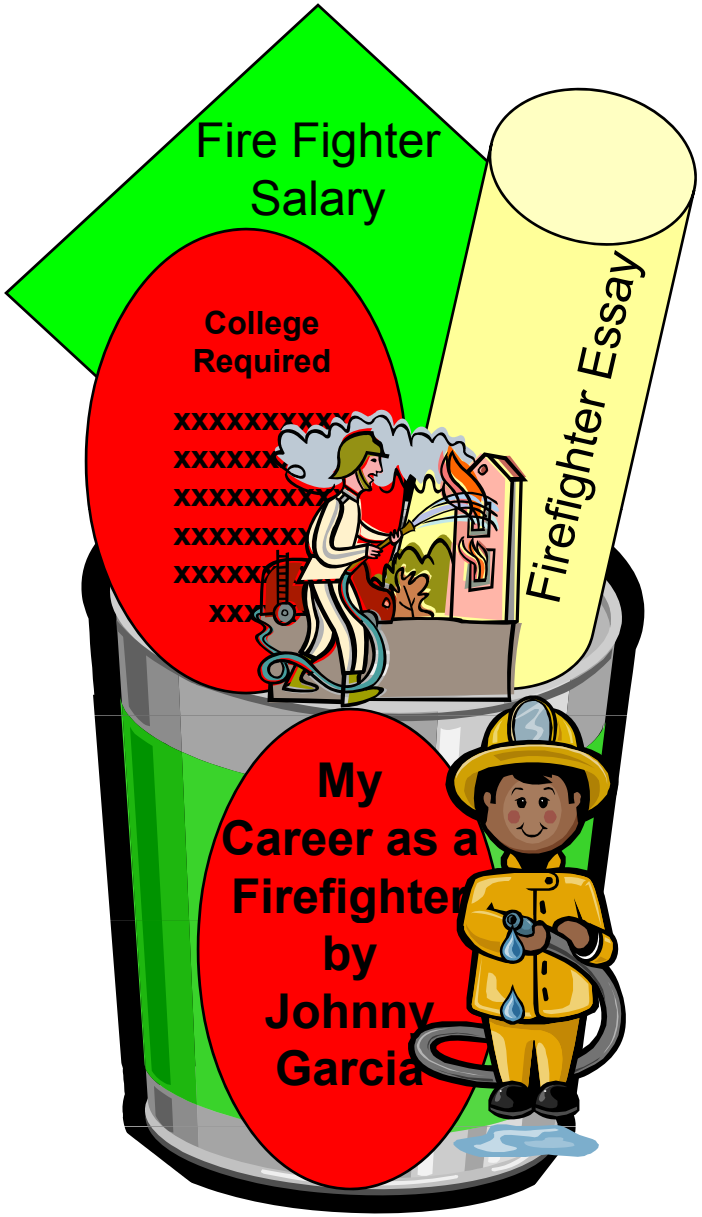


History in A Box Project

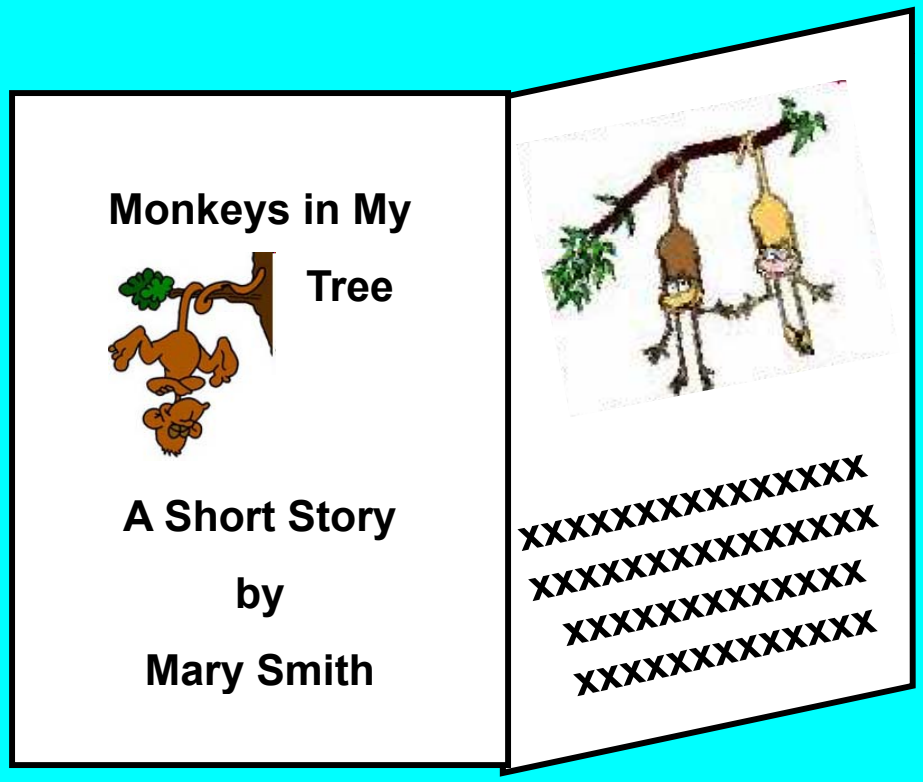
Find a creative way to display the information that is not expensive or takes up a lot of space.



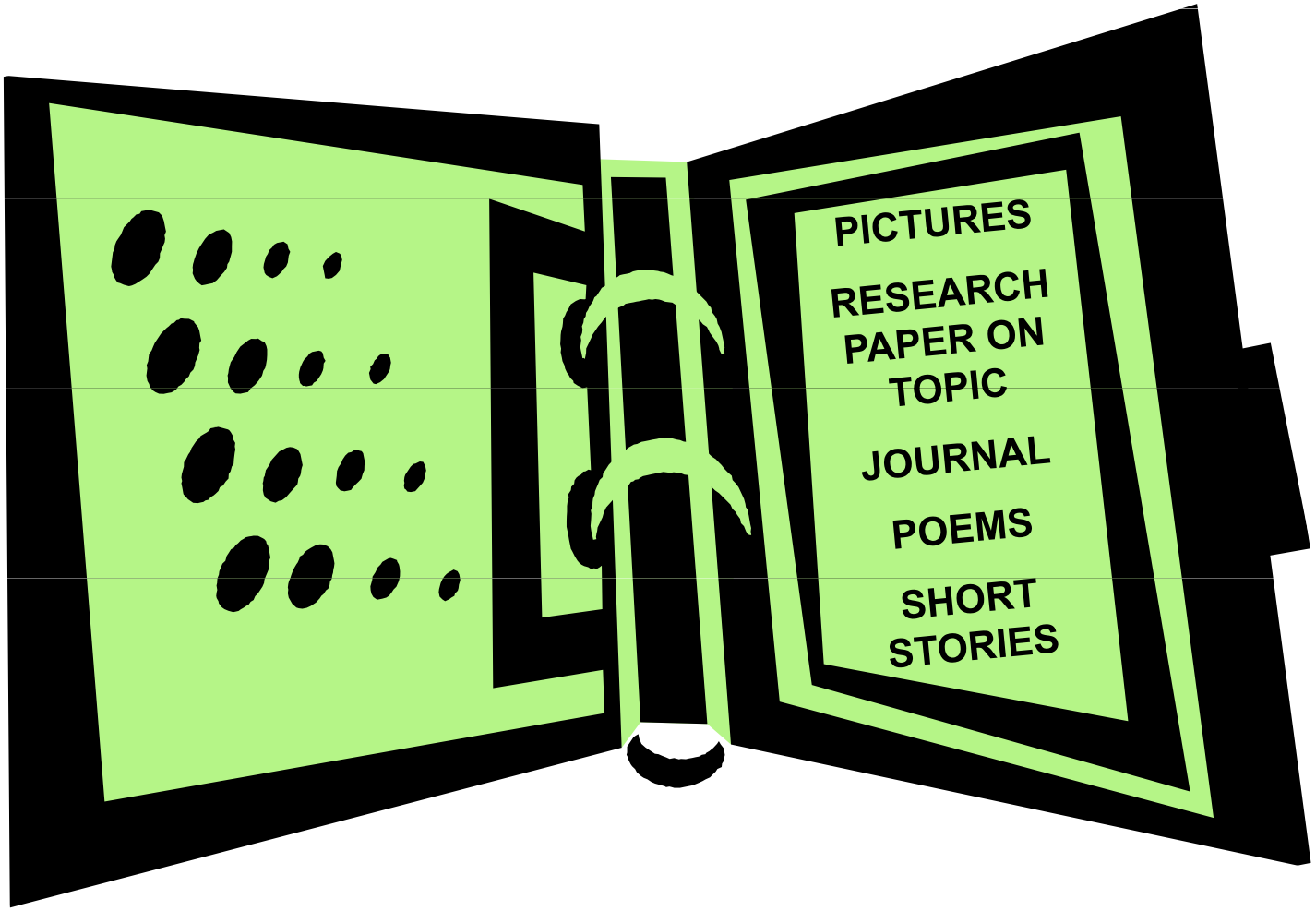
Career in a Can Project



Decorative Thematic Book with Creative Short Story or Poem in Art Covered Frame

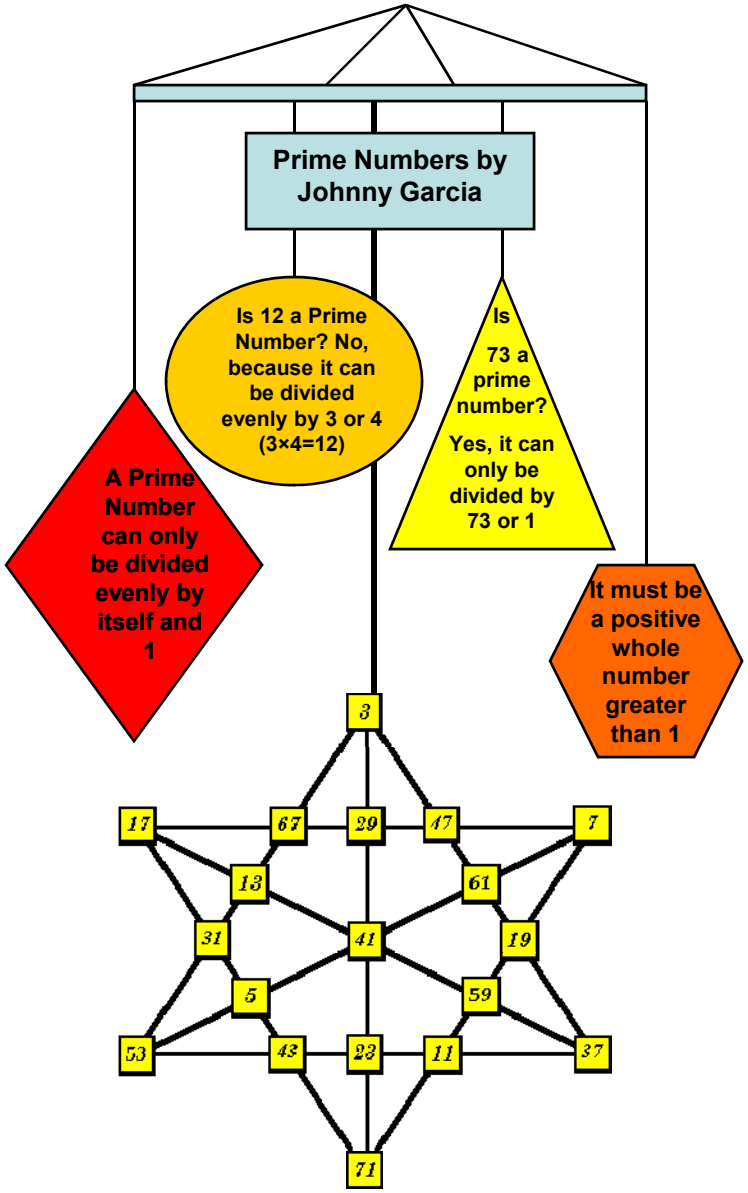


Binder with Information



Binder is decorated to support theme of project

Math Mobile



Prime Numbers by Johnny Garcia

A Prime Number is a positive integer divisible by no integers other than unity and itself.
Example: 2, 3, 5, 7, 11, etc.
Twin Primes

A pair of prime numbers that differ by 2 (successive odd numbers that are both Prime numbers).
Examples: (3,5), (5,7), (11,13), ...

It is not known whether the set of twin prime numbers ends or not.
Co-primes or Relatively prime numbers
A pair of numbers not having any common factors other than 1 or -1. (Or alternatively their greatest common factor is 1 or -1)

Example: 15 and 28 are co-prime, because the factors of 15 (1,3,5,15), and the factors of 28 (1,2,4,7,14,28) are not in common (except for 1).

La Villa ISD

Conducted Best Practice in October and developed a district-wide calendar of events:

- College & Career Project– Nov. 23rd
- Writing Skills w/Artwork Project- Dec. 14th
- Math Project – Jan. 18th
- Social Studies Project– Feb. 15th
- Science Project- April 12th
- Best of Show Academic Fair – May 27th

Raised money for student scholarships that were distributed at the Best of Show Academic Fair.

PBL Scholarships

$1000 total was distributed
to the top winners

1st Place - $100.00
2nd Place - $75.00
3rd Place - $25.00

College & Career Scholars

La Villa ISD
Kinder- 12th Grade
C&C Scholar Guidebook
2010-11

District Initiative

La Villa ISD College and Career Scholars Program

College & Career Readiness
Guidebook

This K-12th grade guidebook identifies all activities and projects students must complete at each grade level to be considered College & Career Scholars.

Cross Disciplinary Activities:
Opportunities for developing reading skills, leadership skills, and college prep skills will be provided at all appropriate grade levels. Resources for student use will be made available and teachers will provide guidance for students to develop the critical skills that will lead to successful transition into college and a career.

Readiness Standard Activities:
Students will have the opportunities to apply career interests, reading, writing, math, science, and social studies concepts in relevant and applicable projects that emphasize the need for this knowledge in future college and career.

Parental Support Activities:
Parents will also have the opportunity to attend educational workshops that focus on their roles and responsibilities in preparing their children for college and future employment.

Special Recognition:
Students that successfully accomplish the grade level standards will be recognized annually as College & Career Scholars.
80 pts = College & Career Scholar
100 pts = College & Career Gold Scholar

Kinder College & Career Readiness

Cross Disciplinary Activities: (30 pts)
___***Accelerated Reading*** (30 AR pts = 10 Scholars pts)

___***Leadership*** – ACE, Club (10 pts)

___***Career/College Day -*** Presentation (10 pts)

Readiness Standard Activities: (50 pts)
Completed project as assigned by teacher

___***Career- Project Based Learning*** (10 pts)

___***ELA Project Base Learning*** (10 pts)

___***Math Project Based Learning*** (10 pts)

___***Science Project Based Learning*** (10 pts)

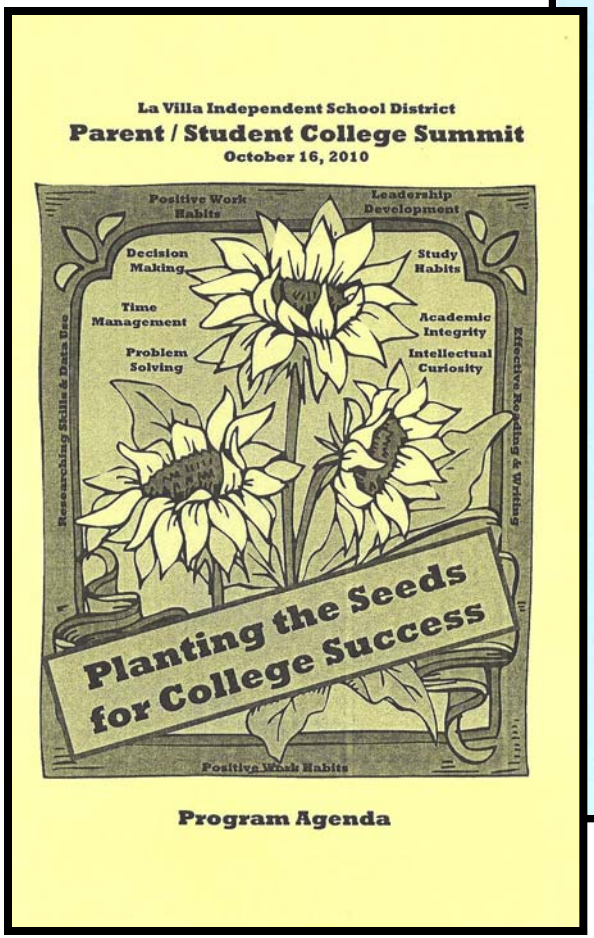
___***Social Studies- Project Based Learning*** (10 pts)

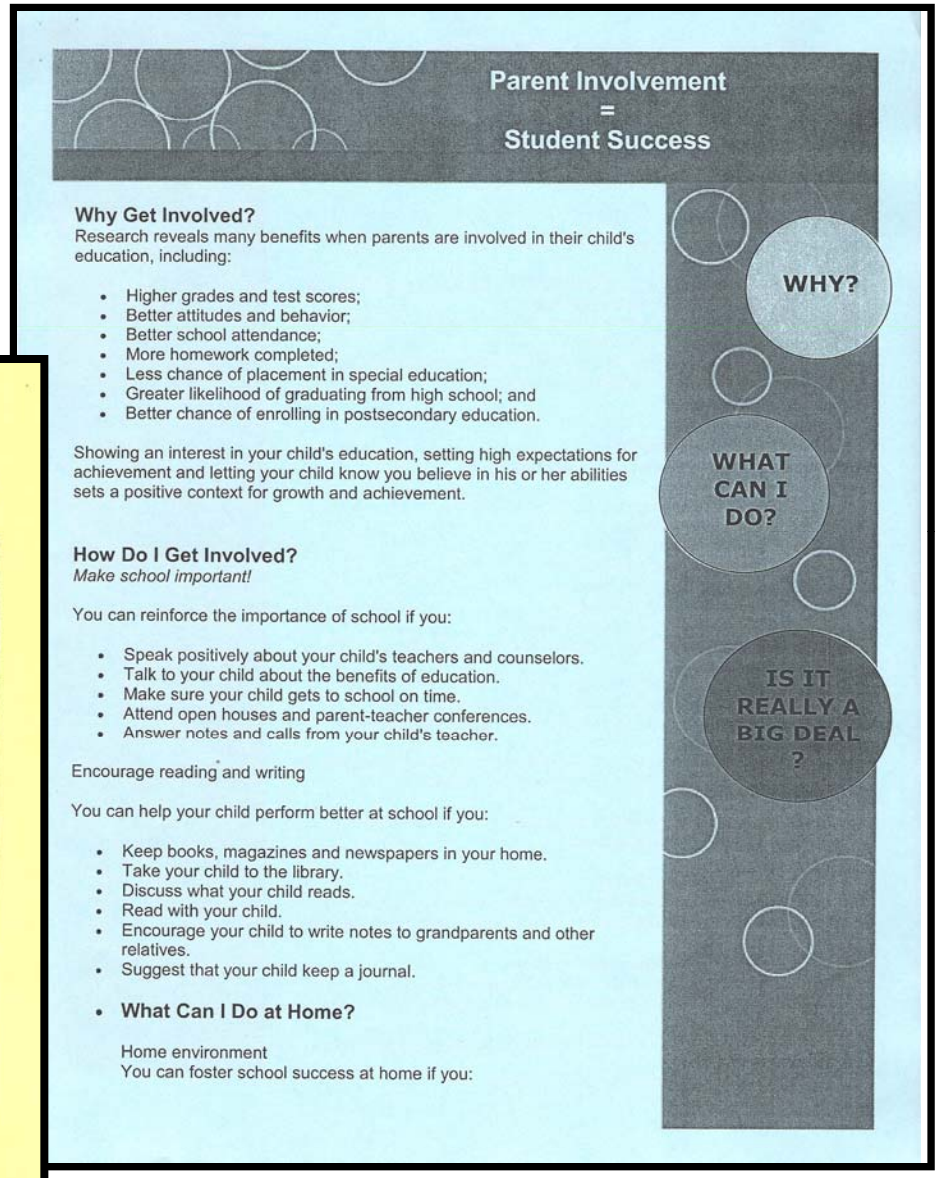
Parental Support Activities: (20 pts)
___Parent(s) attended Workshop (Date) _____(10 pts)

___Parent(s) attend Workshop (Date) _____(10 pts)

_____Total Points Earned
80 pts = College & Career Scholar
100 pts = College & Career Gold Scholar

Parental Involvement is critical !





“I’m going to grow up to be a ____?____. Will you teach me everything I need to know to be successful?

References

Buck Institute for Education
Online Project Design
http://pbl-online.org

Partnership for 21st Century
http://www.p21.org

Texas College and Career Readiness Standards
ccrs@thecb.state.tx.us

La Villa ISD
http://www.lavillaisd.org