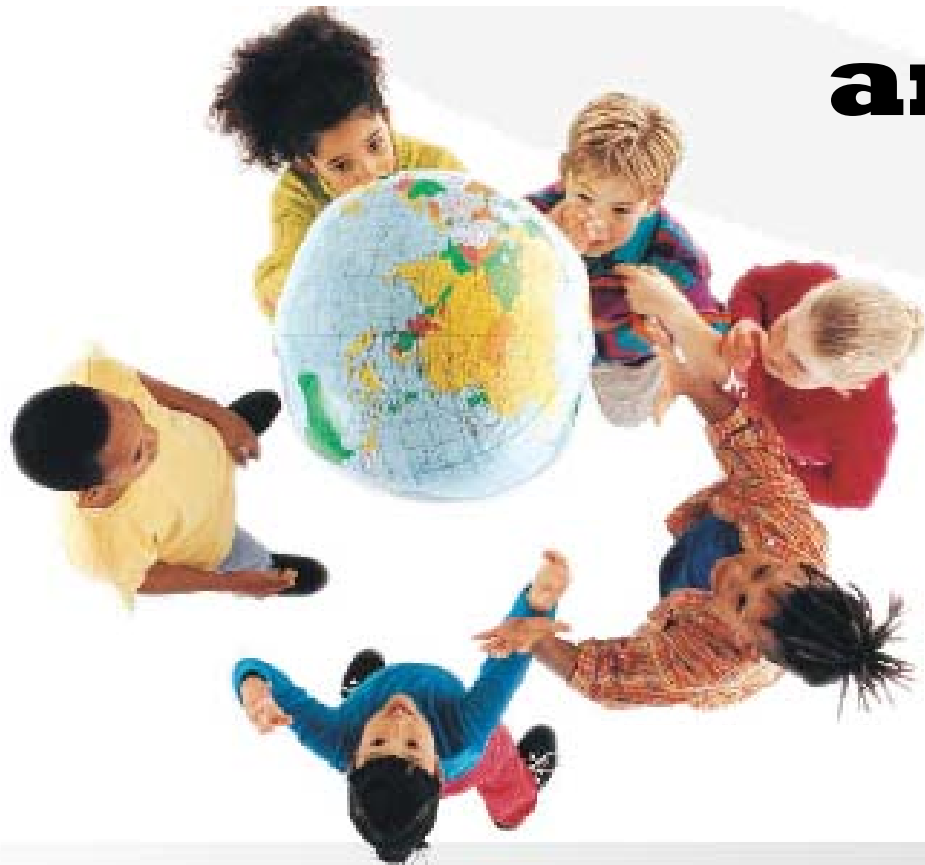


Project Based Learning for College and Career Readiness



**Presented by
La Villa ISD
December 2, 2010**

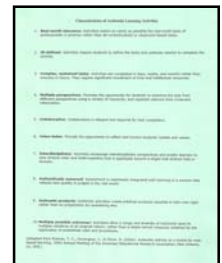
Presentation Agenda

- 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.

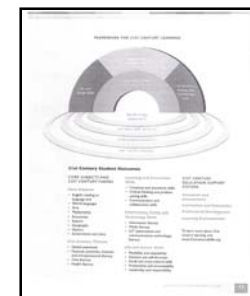
Project Based Learning teaches students 21st century skills as well as content.

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.**

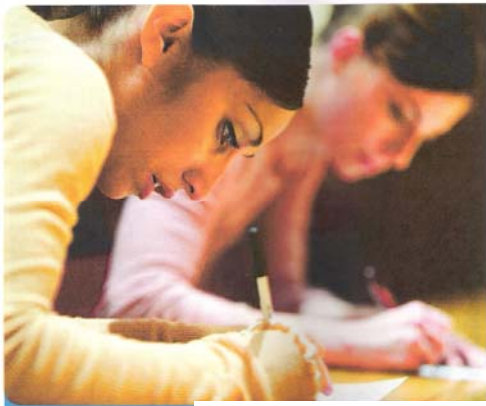


21st Century Learning Handout



Texas College and Career Readiness Standards

Texas College and Career
Readiness Standards

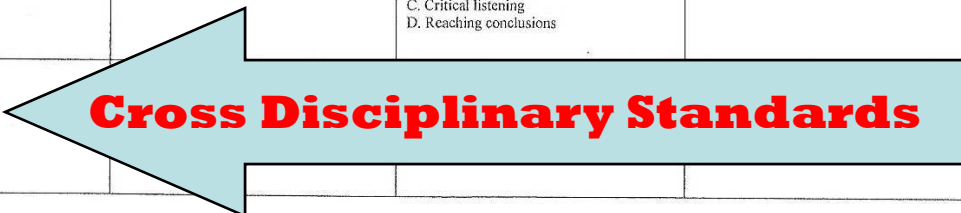


“Generally, the more standards a student can demonstrate successfully, the more likely it is that he or she will be college ready.”

- **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 from 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, carbs, 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. Thermodynamics 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, social, and political processes E. Change of social 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, socioeconomic 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

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)

CROSS-DISCIPLINARY STANDARDS

Foundations of Learning and Knowing

Although the College and Career Readiness Standards (CCRS) are organized into four distinct disciplinary areas, English/language arts, mathematics, science, and social studies, there are elements that cut across one or more disciplines. In fact, some skill areas

enable students to engage in deeper levels of thinking across a wide range of subjects. They help high school students prepare for the transition from high school's primary focus on acquiring content knowledge to a postsecondary environment in which complex cognitive skills are necessary to achieve deeper understanding.

Understanding and Using

Cross-Disciplinary Standards

Cross-disciplinary standards are organized into major areas: Key Cognitive Skills and Foundational Skills. The Key Cognitive Skills specify behaviors that are prevalent in entry-level courses. The list includes intellectual curiosity, problem solving, academic behaviors, work ethic, academic integrity. Foundational Skills of proficiencies students need to be able to know and apply it across the curriculum. These include reading, writing, conducting research, using and using data, and using technology.

These three levels of the cross-disciplinary standards are written to apply across subject areas. Performance indicators found in the appendix show how the cross-disciplinary standards are embedded within the subject areas. The Vertical Alignment chart provides an example in each subject area of at least one performance indicator that could be applied to a subject area. These indicators are meant to show how the cross-disciplinary standards could be integrated in all subject areas.

Cognitive Skills

Intellectual curiosity
Engage in scholarly inquiry and dialogue.
Accept constructive criticism and revise personal views when valid evidence warrants.
Critical thinking
Consider arguments and conclusions of self and others.
Construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions.

Characteristics of Authentic Learning Activities

- Real-world relevance:** Activities match as nearly as possible the real-world tasks of professionals in practice rather than de-contextualized or classroom-based tasks.
- Ill-defined:** Activities require students to define the tasks and subtasks needed to complete the activity.
- Complex, sustained tasks:** Activities are completed in days, weeks, and months rather than hours. They require the use of intellectual resources.

Project Based Learning

Guide for Designing Your Projects

(Use Tool Kit Resources)

DESIGNING YOUR PROJECT

- Principle #1: Begin with the End in Mind
- Principle #2: Craft the Driving Question
- Principle #3: Plan the Assessment
- Principle #4: Map the Project
- Principle #5: Manage the Process

PBL Planning Resources

Project Planning Form
This form can be used to plan out your project from beginning to end.

Assessment Tools - Creating Rubrics
Examples of the best guides to designing rubrics for your project.

Sample Rubrics
See examples of complete rubrics.

Project Management Tools
These guidelines provide specific aid for grouping and managing students.

Principle 1 - Begin with the End in Mind

Overview:
Good projects do not occur by accident. They result from rigorous up-front planning that includes thoughtful outcomes, performance assessments, and authentic learning activities.

Six Steps to Help You Begin Planning

- Develop a Project Idea
- Decide the scope of the project
- Select Standards
- Incorporate simultaneous outcomes
- Work from project design criteria
- Create the optimal learning environment

Planning by practicing the first step for any project in life - Begin with the End in Mind - You will improve your ability to plan projects, as well as communicate the purpose and context of a project to your students. Students who understand the meaning of what they are learning retain more information and apply their knowledge more readily, and their more motivated to achieve.

Principle 1 Resources:

Begin with the End in Mind

The SCANS Skills and Competencies The SCANS list is a guide for educators who want to help students prepare for the workforce. The list includes five workplace competencies and a three-part foundation of skills and personal qualities needed for solid job performance.

The Skills Necessary for Success in the Knowledge Age The "Seven C's" of skills that can be included in projects.

The enGauge 21st Century Skills Skills needed by students and workers in the emerging Digital Age.

Project versus activity-based teaching strategies A comparison of PBL projects and traditional activities.

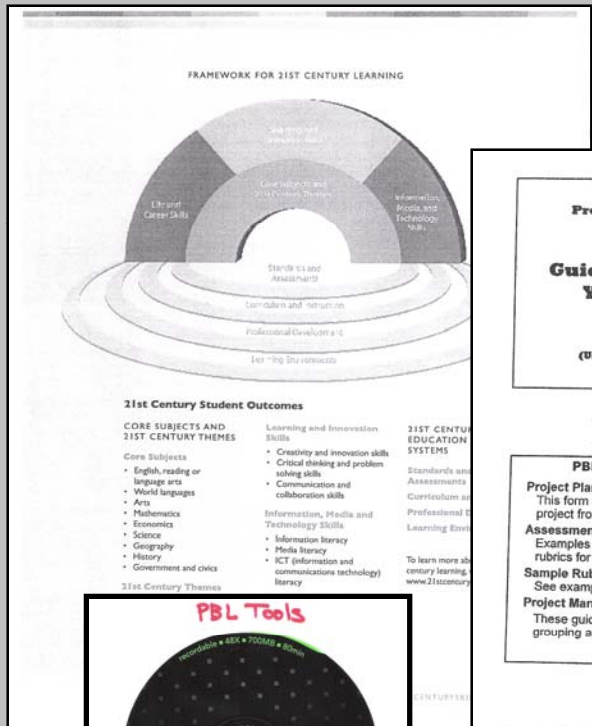
Principle 2: Craft the driving question

Inquiry-based learning:
Good projects are based on inquiry-based learning that is guided by the teacher. The Driving Question is central to the inquiry process and must come before deciding on project activities. The natural outcome is a project that is driven by the question of process outcomes.

A good Driving Question should:

- Drive the project
- Capture a project theme or a "big idea"
- Point students toward mastering content and skills that enable them to answer the question
- Not be easily solved or answered

Tip: Creating Driving Questions takes time and careful thought. Often, brainstorming with colleagues produces the best Driving Questions.



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.

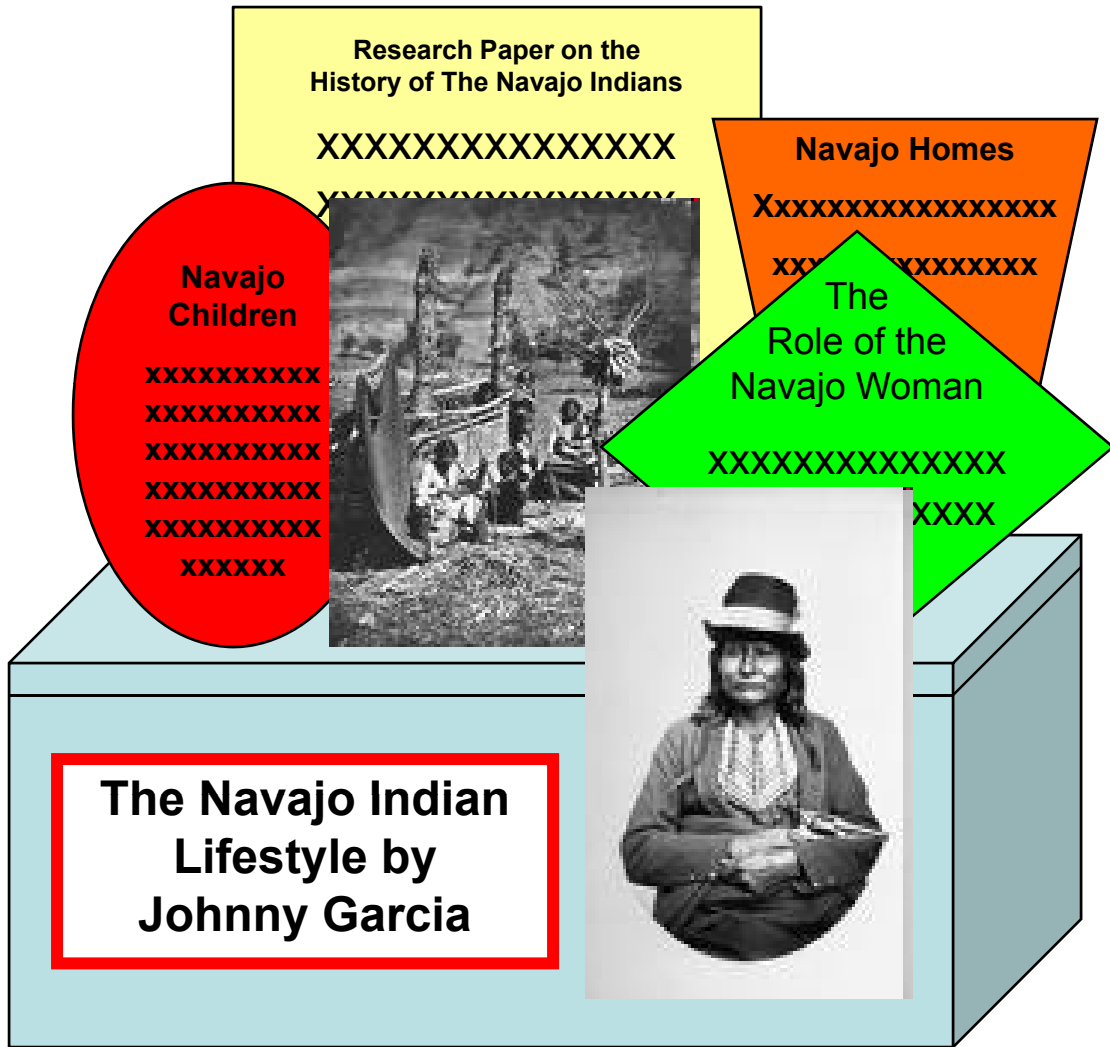
Multimedia Presentations: Using digital media, students can create an electronic presentation that can be included in an on-line portfolio or shown at an exhibition.

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.

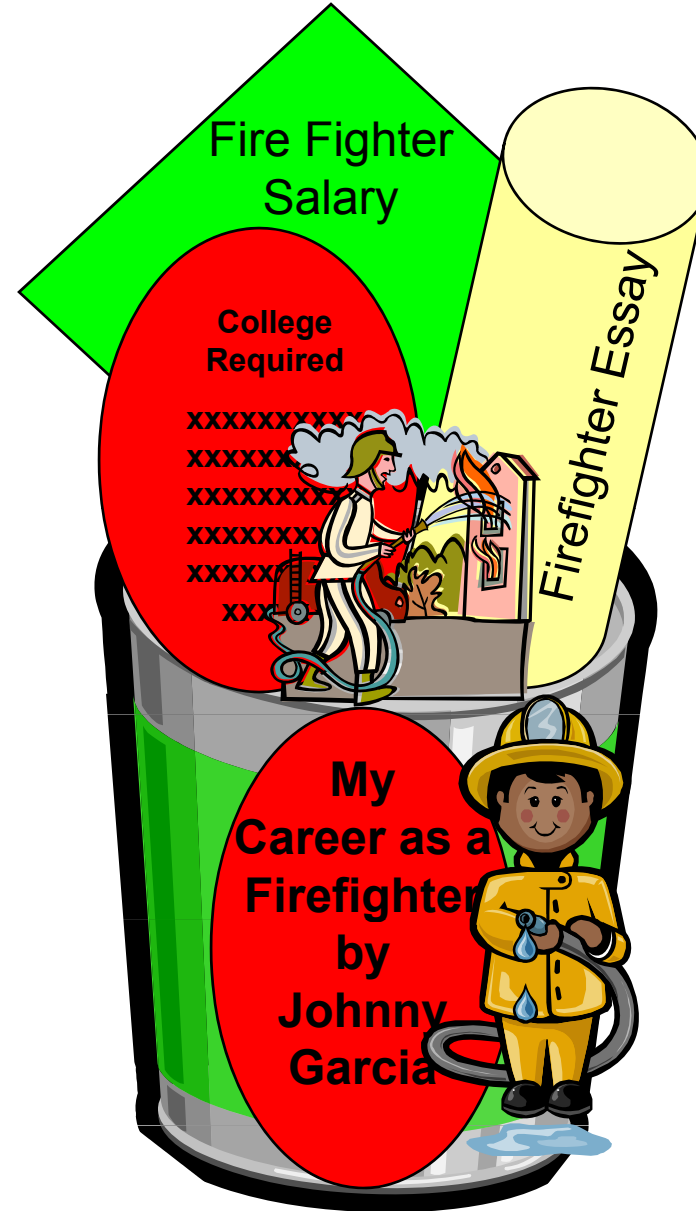
Exhibitions Outside of School: Presentations to parents and community members can consist of oral presentations or presentation of an art or media project. Learn more about exhibitions [here](#).

History in A Box Project

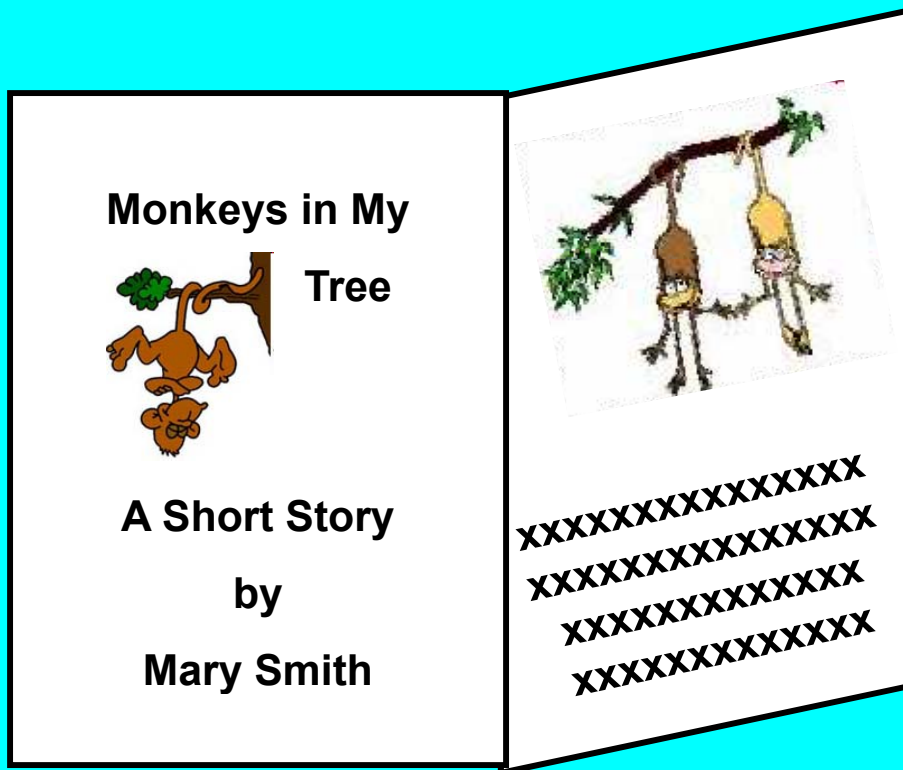
Find a creative way to display the information that is not expensive or takes up a lot of space.



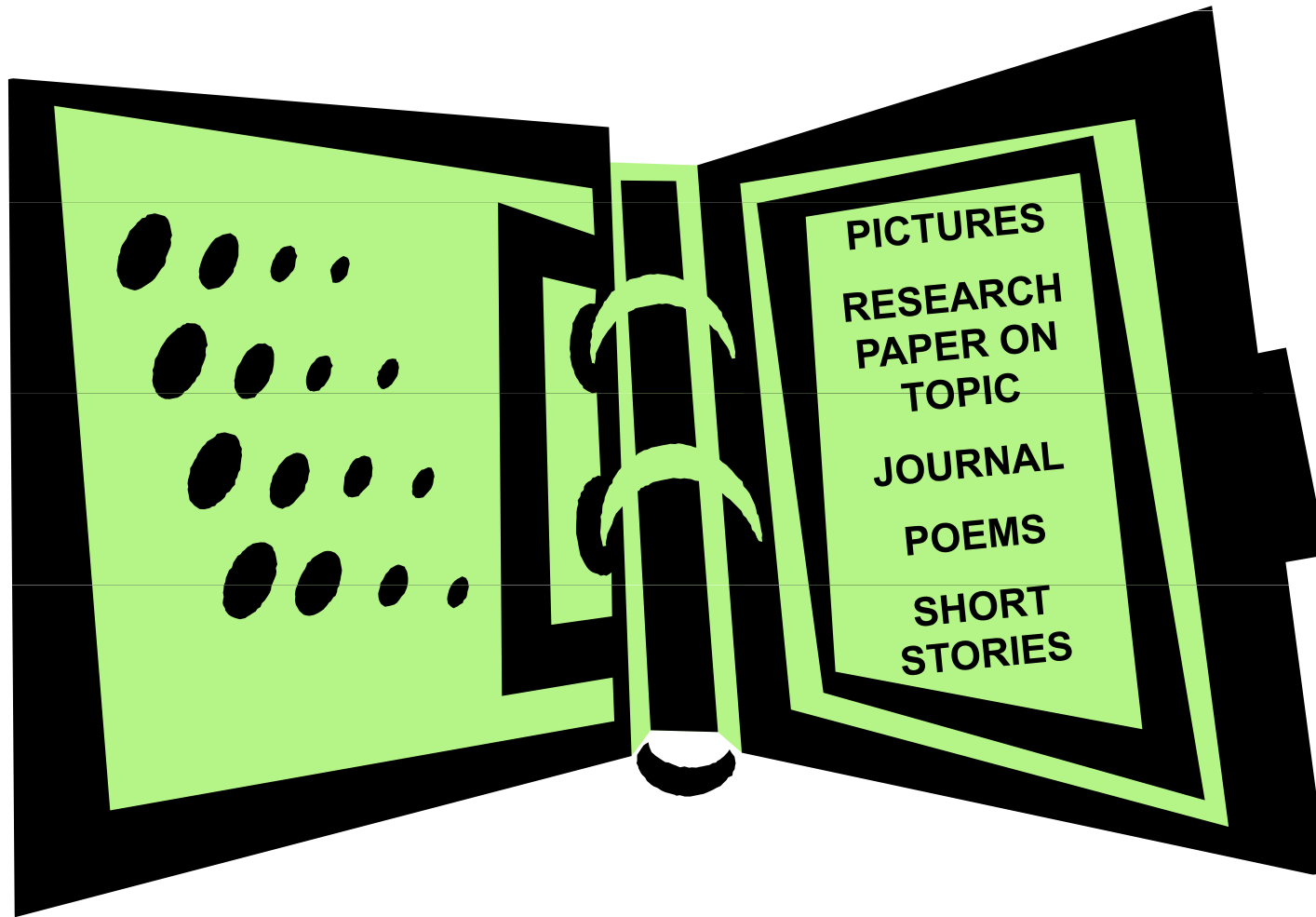
Career in a Can Project



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

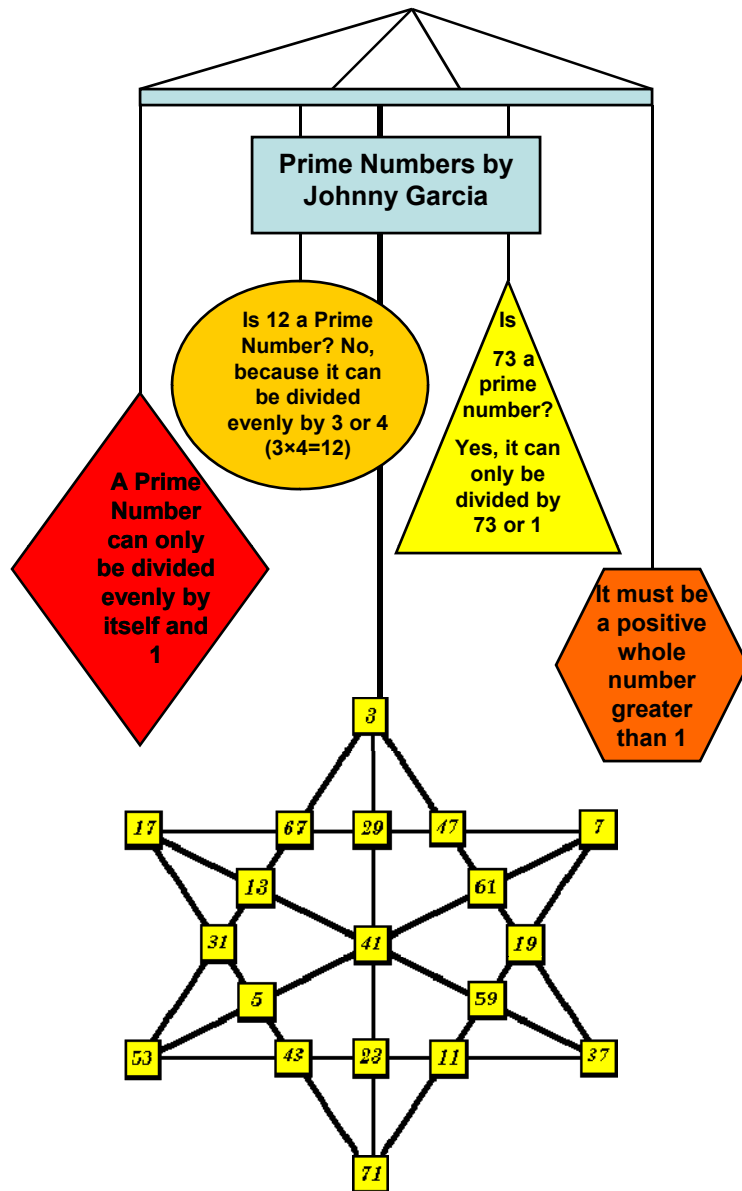


Binder with Information



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)

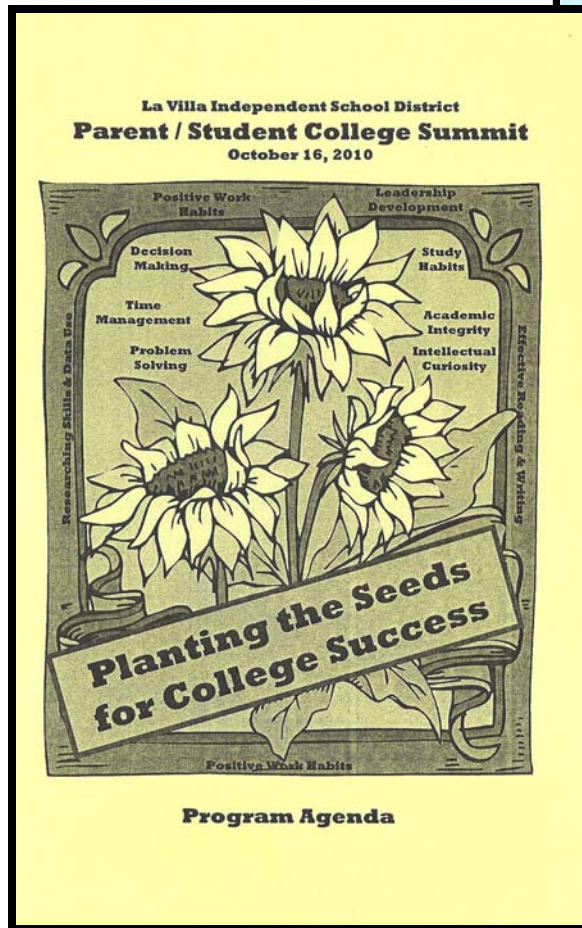
___ Parent(s) attend Workshop (Date) _____ (10 pts)

_____ Total Points Earned

80 pts = College & Career Scholar

100 pts = College & Career Gold Scholar

Parental Involvement is critical !



Parent Involvement = Student Success

Why Get Involved?
 Research reveals many benefits when parents are involved in their child's education, including:

- Higher grades and test scores;
- Better attitudes and behavior;
- Better school attendance;
- More homework completed;
- Less chance of placement in special education;
- Greater likelihood of graduating from high school; and
- Better chance of enrolling in postsecondary education.

Showing an interest in your child's education, setting high expectations for achievement and letting your child know you believe in his or her abilities sets a positive context for growth and achievement.

How Do I Get Involved?
Make school important!

You can reinforce the importance of school if you:

- Speak positively about your child's teachers and counselors.
- Talk to your child about the benefits of education.
- Make sure your child gets to school on time.
- Attend open houses and parent-teacher conferences.
- Answer notes and calls from your child's teacher.

Encourage reading and writing

You can help your child perform better at school if you:

- Keep books, magazines and newspapers in your home.
- Take your child to the library.
- Discuss what your child reads.
- Read with your child.
- Encourage your child to write notes to grandparents and other relatives.
- Suggest that your child keep a journal.

• **What Can I Do at Home?**

Home environment
 You can foster school success at home if you:

WHY?

WHAT CAN I DO?

IS IT REALLY A BIG DEAL ?



**“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>