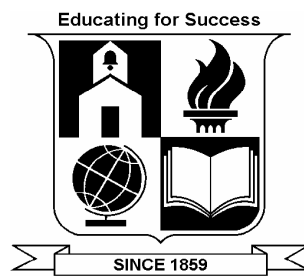


SAN LORENZO UNIFIED SCHOOL DISTRICT



Curriculum/Technology Integration Matrix **Science**

Supporting Project-based Classrooms

2003 -2006

Technology Benchmarks

During the 2005 – 2006 school year the San Lorenzo Unified School District's *Technology Use Plan* was revised to reflect both State and Federal guidelines related to the use of classroom technology.

The current plan includes a Curriculum/Technology Integration Matrix for Science which acts as a curriculum integration model for integration of technology skills.

The goal each year is to have teachers at each grade level incorporate the identified technology and research standards into a lesson plan or unit.

Each student at each grade level will accomplish the yearly technology integration benchmark identified in our Technology Use Plan.

The Curriculum/Technology Integration Matrix is based on state standards for research and technology as well as the identified academic standard for science.

Curriculum/Technology Integration Matrix for Science

<p>SUPERINTENDENT’S GOAL: 4.1 Staff development will provide teachers with project-based learning strategies that utilize technology to support and enhance learning with a focus on academic standards. Objective: By June of 2004 teachers at each grade level will work with students to create a benchmark product for each grade level as indicated in the district's Curriculum Integration Matrix for Language Arts and Reading.</p>		
Kindergarten		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	Skill	Level
	Turn on computer	Introduce
	Choose a program	Introduce
	Change activity within a program	Introduce
	Exit program	Introduce
	Select another program	Introduce
	Shutdown computer	Introduce
	Use mouse	Introduce
	Print Document	Introduce
	Input a CD-ROM/DVD	Introduce
General Keyboard Orientation	Introduce	
Examples Of Projects Using Technology Skills	Class Story Weather Forecast Alphabet Book Design Greeting Cards	
Science Content Standards California Public Schools	Investigation and Experimentation 4.a. Observe common objects by using the five senses.	
YEARLY BENCHMARK	Students will accomplish basic orientation of the keyboard and will create a page to contribute to a class book about the five senses.	

First Grade		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	Skill	Level
	Turn on/off computer	Practice
	Choose a program	Practice
	Change activity within a program	Practice
	Exit program	Practice
	Print document	Practice
	Manipulate basic keyboard functions (return, shift, space, and backspace)	Practice
	Select another program	Practice
	Demonstrate correct hand placement on keyboard	Introduce
Use age appropriate word processing programs	Introduce	
Examples Of Projects Using Technology Skills	Class Story/Individual Story Weather Forecast Posters Design Greeting Cards Journal	
Science Content Standards California Public Schools	Life Sciences 2. a. Students know different plants and animals inhabit different kinds of environments 2. e. Students know roots are associated with the intake of water . . . Investigation and Experimentation 4. b. Record observations and data with pictures, numbers, or written statements.	
Yearly BENCHMARK	Students will word process; format and spell check a brief report describing the observations of a plant's growth.	

Second Grade		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	Skill	Level
	Turn on/off computer	Master
	Choose a program	Master
	Change activity within a program	Master
	Exit program	Master
	Select another program	Master
	Print document	Master
	Demonstrate correct hand placement on keyboard	Practice
	Use age appropriate word processing programs	Practice
	Manipulate keyboard including alpha-numeric keys (8 wpm)	Introduce
	Communicate using e-mail with the assistance of others	Introduce
	Edit and save work	Introduce
	Use bookmarks to access web pages	Introduce
Examples Of Projects Using Technology Skills	Class Story/Individual Story Weather Forecast Posters Poems Journal Virtual Field Trip E-mail Letters	
Science Content Standards California Public Schools	Physical Sciences 1. The motion of objects can be observed and measured. 1.a. – g. Investigation and Experimentation 4 .a. Make predictions based on observed patterns and not random guessing. 4. b. Measure length, weight, temperature, and liquid volume with appropriate tools 4. d. Write or draw descriptions of a sequence of steps, events, and observations.	
Yearly BENCHMARK	Students create a simple science experiment including hypothesis, sequence of steps, events and observations. Information is recorded on a word processing program.	

Third Grade		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	Skill	Level
	All skills mastered in previous grades	Use
	Use proper touch-typing on letter keys (12 wpm)	Practice
	Use basic word-processing skills; Font, size, alignment, spell check, toolbars, page layout	Practice
	Import Graphics	Introduce
	Use on-line resources	Introduce
	Use the Internet; type addresses, manage bookmarks	Introduce
	Communicate using e-mail	Introduce
	Demonstrate ethical and safe procedures related to sharing personal information	Introduce
	File management: create folders, save to server	Introduce
Use Presentation Software	Introduce	
Examples Of Projects Using Technology Skills	Class Story/Individual Story Note Taking Reports Journal Virtual Field Trip E-mail On-line Bulletin Boards Digital Portfolios Letter Poetry	
Science Content Standards California Public Schools	Earth Sciences 4.b. Students know the way in which the moon's appearance changes during the four week lunar cycle. Investigation and Experimentation 5. e. Collect data in an investigation and analyze those data to develop a logical conclusion.	
Yearly BENCHMARK	Students will use the web site such as www.chabotspace.org . to collect data regarding an astronomical feature such as a moon rise. Students will incorporate the data on a line plot to show changes through time.	

Fourth Grade			
Category Area	Uses of Technology in the Curriculum		
Technology Skills	Skill	Level	
		All skills mastered in previous grades	Use
		Communicate using e-mail	Practice
		Demonstrate ethical and safe procedures related to sharing personal information	Practice
		Use presentation software	Practice
		Explore the Internet and perform guided research, download text and graphics	Practice
		Import and Create Graphics in documents	Practice
		Use AlphaSmart connections	Practice
		Keyboard with increasing speed and accuracy and learning additional keys (18 wpm)	Practice
		File Management; Create folders, save to server or media	Practice
		Use a scanner and digital camera with adult supervision	Introduce
		Examine issues of copyright and the ethical use of computer networks	Introduce
	Create and use charts and graphs	Introduce	
Examples Of Projects Using Technology Skills	Class Story/Individual Story Note Taking Reports Journal Virtual Field Trip E-mail On-line Bulletin Boards Data Collection Projects Electronic Research Newsletters Digital Portfolios		
Science Content Standards California Public Schools	Life Sciences 2.a. Students know plants are the primary source of matter and energy entering most food chains. 2.b. Students know producers and consumers are related in food chains and food webs 3.a. Students know ecosystems can be characterized by their living and nonliving components. 3.b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.		
Yearly BENCHMARK	Using the Big 6 research model students will use a graphic organizer to create a food web or food chain as part of their research project.		

Fifth Grade		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	Skill	Level
	All skills mastered in previous grades	Use
	Import and create graphics	Master
	Use AlphaSmart connections	Master
	Create and use charts and graphs	Practice
	Use a scanner and digital camera with adult supervision	Practice
	Explore Internet and perform guided research	Practice
	Demonstrate ethical and safe procedures related to sharing personal information	Practice
	Examine issues of copyright and the ethical use of computer networks	Practice
	Use Basic word-processing skills	Practice
	Cut and Paste	Master
	Page layout	Master
	Manage files, folders and basic operating system	Practice
	Create spread sheets with simple formulas	Practice
	Keyboard with increasing speed and accuracy (20 wpm)	Practice
	Presentation Software	Practice
Examples Of Projects Using Technology Skills	Class Story/Individual Story Note Taking Reports Journal Flyers Newsletters Greeting Cards Virtual Field Trip Business Ledger/Spreadsheet E-mail Digital Portfolios Data Collection Projects Math Projects	
Science Content Standards California Public Schools	Physical Sciences 1.a Students know that during chemical reactions atoms in the reactants rearrange to form products with different properties. Investigation and Experimentation 6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. 6. a. – i.	
Yearly BENCHMARK	Students will design and conduct an experiment showing a chemical or physical reaction and will use a word processing program to write a report.	

Middle School		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	<u>Skill</u>	<u>Level</u>
	All skills mastered in previous grades	Use
	Create and use charts and graphs	Master
	Manage files, folders and basic operating system functions	Master
	Demonstrate ethical use of computer networks and copyrights	Master
	Keyboard with increasing speed and accuracy (30 wpm)	Practice
	Use Word-processing skills of Pagination, footnotes, end notes, headers, mail merge	Introduce
	Perform searches using Boolean search and multiple search sources (<i>Using Electric Library online database & Internet</i>)	Introduce
	Evaluate online sources of information for appropriateness and credibility (<i>Big 6 Information Literacy Model</i>)	Introduce
	Solve basic computer problems encountered with hardware and software	Introduce
	Gather data, design and use a database	Introduce
	Integrate word-processing, graphics, spreadsheets, and databases to prepare and present data	Introduce
	Design a web page	Introduce
	Use advanced e-mail functions (attaching files, cc, etc.)	Introduce
Examples Of Projects Using Technology Skills	Note taking Multi-page footnoted reports Journal/grade level newspaper Virtual Field Trip E-mail/Internet projects Create a form letter using mail merge	Digital portfolios Group and individual projects Data collection projects Environmental Surveys Create a web page Logic Projects
Science Content Standards California Public Schools	<p>Sixth: Earth Science Answering the “Essential Question” ‘How do the forces that shape the earth affect me?’ students will create an individual newsletter using a publishing program.</p> <p>Seventh: Life Sciences Answering the “Essential Question” ‘Cells Do What?’ students will create an oral presentation with a slide show support. Included in the presentation will be labeled graphics, appropriate references and audience handouts.</p> <p>Eight: Physical Sciences Answering the “Essential Question” ‘How can any two objects affect one another?’ all students will write a multi page scientific report that includes scientific data collection from experiments, graphs and tables, table of contents, references where appropriate, and bibliography.</p>	
Yearly BENCHMARK	Included above	

High School		
Category Area	Uses of Technology in the Curriculum	
Technology Skills	Skill	Level
	All skills mastered in previous grades	Use
	Word Process at 55 wpm with at least 80% accuracy	Master
	Create a spreadsheet using advanced functions	P&M
	Import/export text, data, sound, etc.	P & M
	Integrate word-processing, graphics, spreadsheets, and databases to prepare and present data	Master
	Create a web page	P & M
	Gather data, design and create a database	Master
	Perform Boolean searches with multiple search engines	P & M
	Demonstrate ethical use of computer networks and copyrights	P & M
	Demonstrate ethical and safe procedures related to sharing personal information	P & M
	Evaluate online sources of information for appropriateness and credibility, and discriminate between public and private data	P & M
	Use basic troubleshooting strategies to handle routine hardware and software problems	P & M
	Use hyperlinked multimedia tools and integrated productivity tools to design, publish and present individual and team projects	P & M
	Use telecommunications to collaborate with students, experts and others at distant locations to investigate curriculum related concepts, issues and information.	P & M
Make informed choices among technology systems, resources, and services.	P & M	
Identify capabilities and limitations of contemporary and emerging technology resources and the potential for lifelong learning and workplace needs.	P & M	
Examples Of Projects Using Technology Skills	Note taking	Digital Portfolios
	Multi-page footnoted reports	Animated shorts
	Journal/grade level newspaper	On-line interviews
	Virtual field trip	Group and individual projects
	E-mail/Internet projects	Data collection projects
	Job Search	Environmental Surveys
	Digital Presentations	Create a web page
	Developing Websites	Logic Projects
	Distance Learning	
Yearly BENCHMARK	Students will create at least one exemplar project per year illustrating technology competencies such as creation of a word processed research report, PowerPoint Presentation, Website, Digital Photography, Graphics Project or integration of spreadsheet and/or database applications as a part of a planned project.	

P = Practice
M = Master

Educational Technology Support Staff

Georgeann Hardy, Director ghardy@slzusd.org	317-4751
Sally Vilas, District Library Media Specialist svilas@slzusd.org	317-4743
Kathy Crenshaw, Teacher on Assignment kcrenshaw@slzusd.org	317-4753
Sandra Ghiselli, IMTC Assistant, Equipment check out sghiselli@slzusd.org	317-4754
Linda Kemp, IMTC, Ed Tech Office Assistant lkemp@slzusd.org	317-4752