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A guide of predesigned lesson plans to help teachers integrate technology into their curriculum

Kristen Marie Barnes

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A GUIDE OF PREDESIGNED LESSON PLANS TO HELP TEACHERS INTEGRATE TECHNOLOGY INTO THEIR CURRICULUM

A Project
Presented to the Faculty of California State University, San Bernardino

In Partial Fulfillment of the Requirements for the Degree Master of Arts in Education: Instructional Technology

by
Kristen Marie Barnes
September 2001
A GUIDE OF PREDESIGNED LESSON PLANS TO HELP TEACHERS INTEGRATE TECHNOLOGY INTO THEIR CURRICULUM

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ABSTRACT

The following document is a technology lesson plan guidebook for Sky Country Elementary School in the Jurupa Unified School District. The lesson plan book covers the state standards in mathematics, language arts, science, and social studies. The topics discussed within this paper are: the importance of teaching students to use technology for a productive transition into society, the use of computers to increase student learning and motivation, teacher change in attitude towards technology, and the importance of lesson plans as a guide for productive and valuable time spent teaching the standards. The lesson plans I am compiling for the lesson plan guidebook are designed for the use by second grade teachers who wish to use computers to enhance student learning and motivation. There are sixty lessons total for the guidebook that cover various second grade standards. The lessons state the objectives to be met, standards covered in that lesson, assessment opportunities, materials needed, and steps to implementing the lesson with the students.
ACKNOWLEDGMENTS

My project and the creation of this thesis has been a large reflection of the people who have loved and supported me. Receiving my degree and now my Masters has only been successful due to the support of my loved ones. My parents who have always been a help in providing support financially and in the love they have always shown me, I thank you; to my mother and father in law, I could never have been able to do it without your support and guidance about life and the loving support you have always shown me. To Aaron and my beautiful daughter Abbie, I could never live life without you, the love you fill my heart with each day is enough to get me through anything.
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CHAPTER ONE
INTRODUCTION

Teachers and students are pressured by the state and districts to meet standards. Standards increasingly become more and more difficult and cover more and more areas of curriculum. The newest trend across the State of California is to include standards that integrate technology with other areas of curriculum. However, teachers have found themselves lacking in time and proper training to integrate technology into their instruction.

Statement of the Problem

Technology continues to shape and change education as we know it. No longer does technology simply mean a projector or television in the classroom. Technology, in the schools today, means computers in every room, or at the very least, a computer lab in every school. However, not all teachers are trained to integrate technology. Many teachers lack the time or motivation to integrate technology into their lesson plans. Many teachers are feeling pressured to increase falling STAR 9 scores and they do not have the time or knowledge to use the technology to their benefit. Learning to use technology
can be frustrating. It can become even more frustrating to learn to use technology and then apply it into the day-to-day teaching practices as a teacher. Now, take this scenario and imagine teaching 20 or more students, in one room, at one time, and have it stay a meaningful learning experience for each of them. With all of this pressure, teachers find themselves losing the motivation and lacking in the time to integrate technology.

Many teachers are being asked to use computers in their classrooms to help teach a multitude of curriculum standards. With little training and little time to find ways to integrate technology, especially the Internet, teachers find it difficult and timely (Magni, 2001). Teachers are being asked to have their students use the computers in their day-to-day learning and productively stay on task. The use of the computers is not to be used as a baby-sitting tool, nor is it appropriate to use it in a drill-and-kill method. Using computers for such activities often leads to a great deal of wasted time in the lab due to lack of a more efficient way to integrate technology. Due to this lack of technological training, many teachers have found themselves abandoning computer technology and sticking with their current styles and
methods of teaching. This lack of knowledge by the teachers can often cause many of them to become frustrated and give up on what could be a valuable way to spend instructional time.

Teachers are under pressure to have their students perform at high levels on all standardized tests from the districts and the state. At Sky Country Elementary School the second grade students were only scoring at a 28% above the 75th NPR, only 69% were scoring at or above the 50th NPR, and 87% were above the 25th NPR (see Appendix A). Teachers and students were urged to limit recess, physical education, and various electives in exchange for more time spent training for tests and standards (Mann, Shakeshaft, Kottkamp, & Becker, 2000). Technology integration may be one way to motivate students to learn and one way to help students become critical thinkers. However, many districts are not willing to offer in-services, training, or time to the teachers.

Sky Country Elementary School and other school sites within the Mira Loma School District often have in-services that train teachers on how to best teach to the standards. In my teaching experience, within this district there has been only one occasion where any
portion of teacher training was spent on technology integration. As stated by Dias (1999), a major concern with teachers using technology in the classroom is lack of teacher training. Dias (1999) further states: "Far too many teachers receive little or no training. Some of the lucky ones attend training on using computer hardware and software" (p. 10).

When such limited time is given for teacher training, teachers often feel more frustrated after the training session is over. After the in-service attended by teachers at my school site regarding technology use was over, many teachers complained that they would like to be given more time using the computers and more time preparing their lesson plans for computer integration.

In order for teachers to stay on task and focus their attention on student learning and achievement scores, many educators teach as they always have or teach as they feel comfortable. Many of these teachers follow lesson plans that they have created over the years and that they have not updated to include technology. However, due to lack of time, training, or motivation, educators frequently choose not to implement technology
into their curriculum. This can impact the students and their future success in school as well as society.

Need for the Project

Teachers do not have the time to integrate technology into their current curriculum. Therefore, they need lesson plans already created for them to use. The teachers who lack the training to integrate technology may still benefit from the lesson plans in the guidebook. The lesson plans contain interesting ideas to motivate teachers and students without taking time away for teacher planning.

As schools fail to meet the standards, teachers struggle to find new ways to increase student retention and motivation. To meet the needs of the students, teachers search for the time to create lessons that interest students. The use of computers and the Internet to teach all areas of the curriculum gives students the motivation they need to gain knowledge in the standards. The lessons that teachers use containing the computer and Internet help students feel that they are a part of the learning experience.
The more lesson plans that integrate technology, the more students will become motivated to learn. Teachers, however, need the lesson plans to help motivate the students. Finding the time to create innovative and interesting lessons may not be possible for some teachers. The lesson plans in this guidebook were created to cover the standards and were compiled as a resource for teachers. They were specifically compiled to help save teachers time and to cover all subjects in their current curriculum.

Each area of the lesson plan book was separated by subject and then into standards. This helps to save the time in searching for the standards being met by each lesson. The lessons allowed teachers to integrate technology into core areas of their current curriculum, without. Each lesson states clearly the standards to be met. Those teachers who do choose to integrate technology, may find a transformation in their attitude and a sense of enthusiasm they thought they had lost (McGrath, 1998).

Time is not always the factor that leads teachers away from computer technology integration. Many teachers lack the training they need to feel successful in
technology integration. However, the lesson plan book was designed for all teachers to use. A teacher would easily be able to use the book with little or no training. Teachers and students would be able to follow the pre-compiled lessons easily and quickly. As the teachers and students follow the lessons, they may find themselves learning a great deal about computers and the Internet.

Project Overview

As I searched the web, I came across numerous amounts of lessons for teachers. I found that many of these sites also offered lessons on computer technology. Not all of the lessons were of value to my project. Some of the lessons would be a waste of teacher and student time. Teachers need basic, step-by-step lessons. These lessons needed to be easily obtained by the teachers and easy to follow. It was important to choose lessons that covered standards quickly and easily without wasting teacher and student time. Many of the lessons followed a general Madeline Hunter lesson plan format (see Appendix B). The lessons crossed the curriculum and contained evidence of many different California State Standards. Lessons included mathematics, language arts, science, and
social studies. The project was created by gathering these lessons and compiling them into an easy to follow lesson plan book.

It was important that the lessons were of high quality and were motivating, as well as interesting, to the students. If the students lost interest in the lesson, it would not matter how the teacher was teaching it. Each lesson was designed to teach computer technology usage as well as math, language arts, science, and social studies.

The project contained lessons that were meant to be teacher directed, but also student motivating. In creation of this project, I hoped that more teachers would take advantage of the wonderful computer lab provided at my school site. In addition, I hoped that they would use the lesson plan guidebook and computer lab to assist them in teaching various standards, as well as to motivate their students to learn and be better prepared for the future.

Project Goals

The goals of this project directly related to what the teachers and students at Sky Country wanted out of
technology in their school. The lesson plan guidebook was created with the three goals in mind: 1) compile lesson plans for the computer lab that were creative, fun, interesting, and easy to follow, 2) To integrate technology into core curriculum areas, 3) To put lessons into an easy-to-follow guidebook to aid less experienced teachers and students in their use of technology.

Limitations

There were a few limitations with this project, some being within my control while others were not. Some of the problems that were beyond my control were derived from indecisive teachers, unmotivated staff members, or a lack of interest and enthusiasm on the students part. My hope was to bring the teachers into the lab willingly by offering them easy lesson plans to follow. Each lesson plan contained quality implementation instructions that would help in teaching standards to the students. However, if teachers choose not to use the lesson plan guidebook to aid them in quality computer lab instruction or, if they chose not to integrate technology into their curriculums at all, there would be very little the lesson plan guidebook could do for them.
Another limitation was the lack of time in expanding on the lesson plan guidebook. There were only lessons created within the book for second grade teachers and students. The sixty lessons cover only the four major areas of second grade curriculum. Included in the four areas were: math, language arts, social studies, and science. Areas of curriculum not covered that would have been valuable were: art, physical education, music, and specific computer technology lesson plans. The lesson plan guidebook would be more effective for Sky Country Elementary School as a whole if teachers of all grade levels could utilize the lesson book. The book also contained a small variety of lessons for each area of the curriculum. In the future, the book would be less limited if it contained a larger variety of lessons for the teacher to choose from for each standard.
CHAPTER TWO
REVIEW OF RELATED LITERATURE

Within this chapter I will be reviewing literature that relates to the importance of technology in schools. Schools, districts, and the State need to be preparing students for a future filled with technology. Teachers are the key to teaching students about technology, through technology. In this chapter I will also be reviewing the importance of student and teacher motivation towards school through technology integration.

Importance of Training
Students through
Technology for
the Future

Many students will eventually interact with technology. However, if not trained properly, they may not be as well prepared as some of their peers. To ensure proper training, teachers will need to begin integrating technology into aspects of the curriculum that students are required to know.

Meaningful application of technology can help students enter into society. However, to make technology meaningful to students, there are a few things that the
integration of technology should and should not be. Dockstader (2000) points out that technology integration is not providing applicational software such as electronic encyclopedias, spreadsheets, etc. without a reason or purpose. She continues to explain what technology integration is and is not by stating:

It is not prepackaged programs that are unrelated to activities clustered around a particular topic that address few higher concepts or goals. Nor is it teacher created programs that cover special interests and/or technical expertise but do not fit content-area curriculum. (p. 1)

Integrating technology into the classroom calls for effective and efficient computer applications. According to recent projections, only about 22 percent of people entering the labor markets have been properly prepared in technology skills. The United States Department of Education shows that only 59 percent of students have been utilizing computers in the classroom (Poole & Moran, 1998).

A great deal of attention continues to focus on the integration of technology into schools. Chiero (1997) gives examples of ways in which computer technology can help students. His examples include: 1) using computers to improve student learning, 2) helping students prepare for
society that is filled with technology, and 3) enhancing student performance.

Teachers and students are not meeting the needs of society by being prepared to interact with technology. According to the National Center for Educational Statistics [NCES] (1995), 69 percent of all first-through eighth-grade students use computers at school. To better prepare our students, we as teachers must face the new standards for technology and embrace technology, as we are required to do of all standards (Sage, 2000).

Technology is quickly entering the schools in more ways. No longer is it simply the television or overhead projector. Shank (2000) states: "Technology is on the verge of fundamentally reshaping the American education system" (p. 2). Shaping student achievement and preparing them for a technology rich society will come only with hard work and well-prepared systems. Creating technologically educated students, that are well prepared to meet a technology-based society, can only be achieved when students are trained in meaningful ways. Much depends on what types of things teachers do with technology.
What types of computer technology should be used? Sage (2000) suggests that technology can be integrated easily with other subjects within the curriculum. Sage (2000) further adds: "Technology can be integrated easily with other subjects when students investigate real-world problems" (p. 1). Preparing students to use technology using real-world applications is a successful way to use technology.

Particular application software, that involves students using critical thinking skills, has been up for review. This type of software can help to better prepare students to work together as well as use technology in meaningful ways. Sage (2000) writes about a computer application called the Wolf Wars. Wolf Wars is a strategy-based game that integrates technology into the curriculum through problem-based learning (PBL).

Simply stating that technology integration is only a way of preparing students for the future is not giving it enough credit. Technology can also become a valuable motivator for students to work together, prepare for their future in society, and even improve their grades. Shank (2000) states that: "We are moving in a direction where everybody is staring at a computer or a television
all day and all night and not interacting with other people in a meaningful way. I think that schools will have to be the counterbalance to this trend” (p. 2). Part of the responsibility of the school system will be to help students learn how to work together and to be functional members of society (Shank, 2000).

Gerald Chrisman (2000), an Executive Manager of Technology Services for a Dallas School District, and Clifford Holliday (2000), an operator for B & C Consulting Services in Texas, explain the need for student knowledge of technology from a business standpoint: "Students must have the opportunity to use technology as a tool for cooperative learning and class collaboration. This will prepare them for the technology-driven, team-oriented workplace of tomorrow" (p. 1).

At a school in Texas, a pilot program was launched that emphasized assurance that every student reached his or her full potential and had success in a technology-driven society (Chrisman & Holliday, 2000). Many businesses are taking on ideas like this particular pilot program or have been creating them for years. One such business, TECH CORPS, is a non-profit organization
designed and created for the sole purpose of bringing those with technical expertise into the nation's k-12 schools. According to Smith (2000), the Executive Director of TECH CORPS, many businesses became disenchanted by a lack in educational change when they did put time and money into pilot programs with schools.

Enhancing Student Motivation and Learning through Technology

Many students today have homes filled with technology. Some may even have technology in the form of a computer and/or video game. Often this type of technology use is considered fun and interesting. A great deal of software and online sites are geared towards children playing games and having fun. Many of the sites and software available are geared towards educating students and students. Yet, students are not made aware of the educational benefits of this type of technology. Why, as teachers, should we not embrace this positive form of learning? Mann, et al. (2000) say that too many of our schools have been bombarded with tests and standards. Today's schools are so overwhelmed with the pressure to achieve on standardized tests that the
teachers have little or no time left for recess, physical education, and various electives.

Further examples of how integrating technology can enhance student learning was exemplified in a project by Kwajewski (2000). In this particular project, students were motivated to learn through computers. In a Massachusetts school, where computers were used for positive reinforcement, it was found that students were motivated through technology "talks" (Kwajewski, 2000). The technology "talks" were designed to get the students working together and using the computer.

Motivation can be created through technology by using the Internet or basic computer programs available. Kwajewski (2000) continues to describe motivational lessons through seventh grade interaction and use of spreadsheets for projects. Kwajewski (2000) describes the use of spreadsheets as follows:

Seventh graders learn how to use spreadsheets. During the past few years, I have developed assignments that involve using a grade book, calculating wages and taxes, determining a weighted grade point average, computing a cost-of-living increase, and interpreting statistical data on countries around the world. (p. 2)
Mann, Shakeshaft, Kottkamp, and Becker (2000) suggest that using technology to enhance learning can be done if used as a form of play. Their idea is similar to the ideas of Kwajewski. They explain the powerful result "play quotient" had on two Silicon Valley brothers that created the game Carmen San Diego (Mann et al., 2000).

In the study designed by Mann et al. (2000), students were given interactive materials to see if they would have a positive effect on their achievement. Mann et al. (2000) stated that: "The links to standards and assessment are crucial" (p. 35). In order for the technology to be effective and used, it will have to be assessed by districts through standards.

A great deal of literature supports the need for a supportive district in order for technology to be effective. However, this is only one aspect of how technology can be used as an effective learning tool. The key to success still lies within the teachers. Teachers are the valuable tool for successful integration of technology into our schools.
Success through Teachers

Meeting the needs of students, preparing them for a future in technology, and enhancing student learning and motivation cannot be done without motivated and dedicated teachers. As cited in Mann et al. (2000), a Superintendent by the name of Michael Massarottie states that: "staff need to ensure that what they are teaching is aligned to the standards and that their teaching is responsive to the needs of the students" (p. 187). Teachers are the key to integrating technology into the curriculum and enhancing student learning and motivation through the avenue of computer technology. The particular school district that Mann et al. (2000) described created a pilot program. This pilot school increased achievement in both math and reading by integrating technology into the classroom and supporting teachers (Mann et al., 2000).

Magni describes technology use and integration like this:

Finding ways to integrate technology, especially the Internet, into course curriculum efficiently and in a way that meets curricular goals can be quite a task for teachers. The Internet is a vast resource with a lot of junk. This causes teachers and students to waste
However, finding teachers who are technologically savvy and are ready and willing to integrate technology into the curriculum can be somewhat of a challenge. Researchers agree that teachers are the key to integrating or infusing technology into learning (Gardner, Discenza, & Dukes, 1993). No longer is the focus on buying equipment (computers) for the schools. Now that technology is available, the focus has made a shift to the teachers and what they are doing with the technology.

Teachers who have experience with technology help influence how technology is used in the classroom (Kruegar et al., 2001). Teachers play an integral part in student learning, motivation, and success. It is the teachers who decide how much time should be spent on preparing each subject. Teachers decide how they will motivate and teach the students in their classroom. Teachers are the designers of the learning activities. As the designers, teachers help their students to achieve curriculum related goals (Harris, 2000). As Harris (2000) points out: "Skillful, student-centered teachers create
spaces for learning that accommodate multiple possibilities for student actions" (p. 5).

Teachers are continuously bombarded with technology and the notion that computers should be used as an integral part of their classroom lessons. Dias (1999) describes technology as teachers fundamental challenge. Teachers are challenged daily to use computers to create innovative learning opportunities for students (Dias, 1999).

If students are to meet the needs of society by the time they enter the workforce, they will need to be trained to use computers. If they are to be as prepared as the other millions of graduating students, they will need to have teachers who prepare them for technology as Dias (1999) and others have pointed out. To do this, teachers will have to use technology in meaningful ways. Convincing teachers that technology usage in their classrooms is valuable can be difficult.

Teachers have many of their own specified philosophies of teaching and have their own opinions of what works in the classroom. Changing the minds and attitudes of teachers who are set in a particular style of teaching can be difficult (Chiero, 1997).
teachers to realize just how valuable technology is can take time. According to Girod and Cavanaugh (2001):

Technology-rich classrooms can free teachers from the bounds of textbooks—asking both teacher and student to venture out onto the Web to find the most current, cutting-edge content available. Students can often gain access to the same kinds of information available to practicing professionals. (p. 2)

However, moving outside the textbook can put a great deal of pressure on teachers. This type of change adds demands on the teacher that can be scary and difficult (Girod & Cavanaugh, 2001). Teachers will be asked to review their curriculum to decide what is the best way to integrate technology into their lesson plans (McGrath, 1998).

Research on computer integration in the schools has concentrated primarily on the use by the student in the classroom (Chiero, 1997). Teachers are beginning to see the importance of technology as they become increasingly bombarded by it. As Chiero (1997) explains: "Teachers know that it is important to teach students about technology for the future" (p. 133). Because so much of the future is technology based, teacher attitude towards technology is an intricate part of planning and
integrating technology into the classroom in a successful manner.

Chiero (1997) further describes teacher attitude as the key to technological success in the schools. If schools and students are to be successful, teachers will need to be successful in technology themselves. Technology asks teachers to view not only the learners, but also learning the tasks themselves in new ways (Girod & Cavanaugh, 2001).

Teacher attitudes and belief systems will also need to be addressed when dealing with computer integration. Becker and Ravitz (1999) feel that changing teachers pedagogical practices and beliefs towards technology will come through staff development (in-services and lessons) and staff support. Teachers are the key to implementing powerful lessons where technology is the focus. Teachers can also be the factor deciding whether or not technology is used appropriately in the classrooms. In schools where social support was made available to the students and staff, Becker and Ravitz (1999) found that computer use was a powerful catalyst for teaching students.

The study by Becker and Ravitz (1999), teachers were more likely to change their pedagogical beliefs and
practices in the classroom to be more technologically oriented when they had support. However, simply using computers is not all the research has shown to be beneficial.

Research has also taken on a different angle to success through the teachers. Not all technology used in the classroom is appropriate and valuable. Teachers not only need to use technology in the curriculum to meet the standards, but it needs to be used in a meaningful way (Kearlsey, 1998). Technology misuse can be found as a simple distraction from what really matters in schools today. The importance needs to be on effective learning and good teaching (Kearlsey, 1998). Kearlsey (1998) further describes appropriate use of technology as achieving success through computers by having well prepared teachers that implement technology into the curriculum (Kearlsey, 1998).

When gaining insight to technology integration into the classroom and its effects, teacher opinion is valuable. Wall (2001) describes opinions in her article that expresses teacher emotions regarding technology integration and the traditional methods of teaching. She also describes how one teacher uses technology to help
her teach unfamiliar science topics. Like so many elementary teachers, the training teachers receive focuses them on reading and math (Wall, 2001). The particular article by Wall (2001) examined technology as a method for teaching science.

Many teachers lack training and confidence in teaching science lessons. As stated earlier by Wall (2001), many teachers were well trained and prepared to teach math and reading. However, thanks to technology, web pages available on the Internet give teachers support and ideas in teaching science (Wall, 2001).

As cited in Wall's (2001) journal, teachers were motivated to teach science by a web lesson they learned about in conferences they attended. In this lesson, teachers and students participated in a "star count" that was ran by NASA. Another example of a science motivator for both teachers and students was the Magic School Bus. This particular piece of software took students on a virtual trip through space (Wall, 2001).

Keeping students motivated with technology and helping student achievement through technology will only happen when teachers are willing and motivated themselves. One reason for lack of teacher motivation was
lack of teacher training. What should be taught using a computer? How is the computer effectively? How can teachers ensure positive outcomes that build students knowledge, critical thinking skills, and help in the student success rate of all the standards?

Lesson Plans, Guiding Instruction

To avoid wasting time in the lab or when using technology through computers, many teachers need to be better prepared for the lessons they teach. Often districts talk of better teacher training, however, not all school districts have the funding for such training. Even when they do have the training, not all teachers attend or gain enough knowledge of computer integration to apply it in their teaching practices. Misuse of technology can result in a waste of valuable learning time. This is often the reason many teachers give up on the idea of integrating technology into their curriculum.

McGillivray (2000) emphasizes that "drill-and-kill software is not the answer" (p. 60) and, therefore, should not be used in lesson plans. This type of lesson and computer use may engage students in use with
technology but does not lead students into deeper levels of learning (McGillivray, 2000).

Teachers need to realize that technology has been a part of K-12 classrooms across the country for more than a decade (Dias, 1999). However, despite how long it has been around, there is a concern that those who use technology may not be using it in a meaningful way. A large concern when dealing with technology in the schools is that many teachers use it for drill-and-kill and not as a more integrated approach of the curriculum, due to a lack of planning (Dias, 1999).

The more teachers can visualize the use of technology as a way to enhance learning, the more technology will be used in the classroom. Morton (1996) suggests that in order for teachers to integrate technology properly, they cannot see computer use only as a "tool". To allow teachers to begin effective use of computers, teachers need support, lesson plans, and time. Teachers will need time to revise old lesson plans, so they are able to incorporate the technology resources that are now available to them and the students (McGrath, 1998).
Lesson plans are often required by many school sites because they feel that they help guide meaningful instruction. Lessons are created to guide teachers instruction and valuable to offer guidance, support, and structure. Supporters such as Madelyn Hunter have even created aspects that must be in a lesson plan to make it a useful tool.

"Teachers understand that how they teach can often be as important as what they teach" (Simplicio, 1999, p. 183). Lesson plans can be used as a catalyst for learning and directionality. Simplicio (1999) further states that through implementation and innovative lesson plans, joy and excitement can be brought into the classroom.

In the State of Texas, many districts require the teachers to provide lesson plans for their class in a file every day. There are many reasons why this practice is valuable and necessary for these teachers and this district (White, 1997). Lesson plans help ensure all student needs are met, standards are provided as documentation, and students are held accountable for learning through formal assessment (White, 1997). According to the study by White (1997), teachers are
better prepared when organized. Lesson plans are also valuable to ensure teachers are prepared with materials and resources. Filing lesson plans is also valuable for substitute teachers, when required (White, 1997).

Creating lesson plans for math, reading, language arts, social studies, and science each day can be time consuming for teachers. However, the value of the lesson plans can be found in the results of student learning and achievement. McCutcheon (1982) states: "Lesson planning is an essential facet of teacher preparation, necessary for even the most experienced teachers in order to ensure direction to instructional method and bolster teacher confidence" (p. 260). A further study done by Carter and Lee (1989) revealed that teachers accredited poor planning as their major reason at failure in any given lesson.

Observations done on teachers who teach via lesson plans and those that do not offer helpful insights into the value of lesson plans. In a study by Wilkerson and Scheffler (1992), teachers were observed who created and implemented lesson plans and those who did not. They found that many schools offered an inordinate amount of time to teachers for the construction of lesson planning.
However, those that offered more time and whose teachers used the time accordingly had greater success in teaching the lessons.

Teachers who use lesson plans may no longer be doing enough if they are not integrating technology into their usual teaching methods. These teachers must also focus on upgrading their old lessons to include the valuable tools of technology. Many lesson plans could be modified easily to incorporate relevant computer technology use into the curriculum (Kwajewski, 2000).

Lesson planning and integration of technology into lesson plans are valuable to the role technology will play in the lives of students. In order for teachers to meet the needs of their students by better preparing them for the future, they will need to upgrade methods of their teaching and often change their own philosophies of how things should be done in the classroom.

Summary

Successful computer technology use can be achieved through teachers, students, and support from staff members, administrators, and even parents. Technology needs to continue to be a standard that all teachers and
students strive to meet as they do all other standards in school. Innovative and successful teachers use technology in their daily lesson plans, lesson implementation, and use it as motivation for their students. Teachers will continue to be the key to success in all areas of the curriculum. If given the motivation and time to use technology in their day to day practices, teachers who use technological instruction will be benefiting their students' academic and future business success.
CHAPTER THREE
DESIGN AND DEVELOPMENT

In chapter three I will be discussing analysis stages of the project. I will also be covering the design and development stages, evaluation, and future plans for implementation. The analysis stages will include a discussion of interviews with teachers, surveys, and observations. Included in this chapter will be future plans for teachers at my school site to implement the project as well as future development plans for the project.

Analysis

The analysis of the project consisted of four components. The components of the project analysis were: interviews, observations, teacher surveys, and student surveys. Each analysis component offered suggestions on how to better create a teacher lesson plan guidebook for the computer lab.

Until I conducted the interviews and gathered the surveys, I did not completely understand how the project could impact teachers at my school site. The analysis began with teacher interviews during staff meetings,
lunchtime, and after school. The interviews were informal and often were conducted one-on-one. I met with two teachers of each grade level at a time. The fourteen teachers interviewed were happy to discuss technology integration with me. I asked each teacher general questions about their use of the computer lab and about what they thought were the problems with Sky Country technology integration. The responses by each teacher offered consistent results. Each teacher explained a lack of teacher usage in the computer lab. Each teacher also stated that there was a problem with motivating teachers who were not properly trained to use the lab. The primary grade teachers responded that they needed time to prepare lessons that would help make time in the lab more useful.

I feel it is important to mention my own personal observations of the teachers at Sky Country School. When discussing technology, many teachers often came to me to ask questions based on my experience. As I began preparing for my project, I observed a number of things about the teachers use of the lab and technology. One thing I noticed was a lack of teachers using the lab. Out of the 32 teachers at Sky Country, only four teachers used the lab. Out of these four teachers, only one of the
teachers actually taught from a lesson plan while in the lab. The other three teachers I observed allowed their upper-grade students to "play" on the Internet.

For the second form of analysis, I distributed surveys to the 32 teachers at Sky Country. The surveys were given out during a staff meeting. Teachers were asked to fill in the survey when they had the time and then drop them in my box (with or without their names). Questions contained on the survey covered many areas including: the amount of teacher time spent in the lab, the amount of technology integration teachers included in their lessons, amount of training they have received in technology, and questions regarding what they would need to have in order to help motivate them in using the computer lab for technology integration. The survey contained many valuable questions that helped guide the project (see Appendix C). In the surveys, as well as in the interviews, many teachers had the same type of feedback. The seventeen that returned the survey stated a need for training. Thirteen of the seventeen stated a willingness to be trained when using technology to integrate curriculum, but felt that they would not be given adequate time or training by the district. All of
the 17 returned analysis surveys stated a need for lesson plans to be available in the lab for teacher use with their students. They also stated the pre-compiled lessons would save them a great deal of time.

The final form of analysis results came through a student survey (see Appendix E). In a survey given to the 20 students in my classroom, I found motivating results. All 20 students answered the survey questions in a remarkably similar manner. When asked if they would like to use the computer to learn subjects in school, they all responded yes. The results varied when students were asked about personal computers at home. Only four of the 20 students claimed to have access to a computer and the Internet at home. The students who had access to the Internet showed a willingness to help others and were eager to use the Internet and their computer to learn. The 16 students in my classroom who did not have access to computers were in the greatest need for technology integration.

Design and Development

It was important to design a project that would be effective for the users. In this case, the teachers and
students were to be considered the users. The medium of choice for the design of this project was teacher created lesson plans designed for use with a computer. I chose this form of design as the basis for the project because teachers are familiar with lesson plans and are required to show them each week to our principal. As was presented in the literature review section of this paper, lesson plans can be the guide for directionality and enjoyment in lessons (Simplicio, 1999). I chose to specifically look for lesson plans that were of high quality. To reach high quality, each of the 60 lessons needed to contain specific aspects based on my criteria. The lessons needed to state the standards to be met in the lesson, materials needed, objectives to be met, instruction in how to implement the lesson, and assessment opportunities. The criteria chosen was based on the Madelyn Hunter lesson plan guide (Appendix B). Madelyn Hunter's lesson plans often contain more aspects than I required in the guidebook lessons. However, I chose only the most basic and necessary aspects of a lesson for the guidebook to keep the lessons simple and easy to follow. I wanted the most valuable aspects to be presented to the teachers. That is why I used Madelyn Hunter's lesson format as a
guide for each lesson. Many teachers at my school site and throughout the credential program have shown enthusiasm and have had positive things to say about lessons they created following Madelyn Hunter's lesson plan format. If there were too many steps to follow, the teachers may have lost interest or decided not to use the lesson plans after all, therefore, I chose lessons that contained the most necessary steps to make the lesson a success.

To create a project that would be valuable for both the student and teacher, I kept in mind at all times the needs of the users based on the analysis components stated earlier. I also used my personal experience with teachers and students using the computer lab.

The project became a compiled lesson plan book. Covered in the book were core standards from the state of California for second grade in mathematics, language arts, science, and social studies (Appendix D). The project was specifically designed to be user friendly (which meant it would have to be accessible at all times for the teachers), contain quality lessons, include lessons that integrated technology into the curriculum, and as stated earlier, contain specific steps within each
lesson for the teacher to follow. The project was
designed to be easy for teachers to use. The focus was on
the idea that teachers who are comfortable using
computers might model a more positive attitude towards
the uses of technology for their students (Chiero, 1997).

To ensure quality of time spent in the lab, the
standards met were listed in each lesson. Teachers would
also be able to label with ease, in their own planning
books, the standard they were covering with the time used
in the lab. In my continued effort to make the lesson
plan accessible to teachers, the goal was to compile a
lesson plan guidebook that was of great value to the
teachers. In order for teachers to use the lesson plan
guidebook, it would have to contain standards by subject
and detailed objectives. Using this form of lesson
planning, the teachers could offer rationales to the
principal and parents for time spent in the lab.

The lesson guidebook was placed in a three ring
binder that was easy to open, easy for teachers to pull
out lessons to copy or view more closely, or to flip
quickly to a new section or lesson. The guidebook also
contained separators or tabs that sectioned the guidebook
into the content areas of mathematics, language arts, social studies, and science.

Designing the project took a great deal of time as lessons had to be gathered that would be of great value to the teachers. Each lesson had to contain steps that ensured readability by the teachers, accessibility, and helped to increase teacher engagement of the project. The focus was to be on teachers finding a balance between old ways of teaching and the integration of technology into the curriculum. In this effort, creating a book that was easy to follow, had high quality lessons, and was easy to read became the focus. It was imperative to include lessons that were related to curriculum standards that teachers were already implementing. It was also useful to include lessons that covered content areas that were difficult for students to learn.

To develop this project, I took lesson plans directly off the Internet. Each lesson plan covered many of the standards stated by the State of California. Without the use of the computer and access of the Internet, this project would have been impossible for me to complete. The Internet and search engines helped me to complete the project. The search engines included:
Google, Yahoo, Webcrawler, and Metacrawler. Many sites on the Internet provided a multitude of lessons by subject, grade, and standard that I provided in the lesson plan guidebook. However, many of the lessons were not easy to follow or did not contain the specific criteria needed in a valuable lesson plan. As stated earlier, I was looking for high quality lessons that included a basic Madelyn Hunter lesson plan format.

I chose to search on the Internet for the lessons because I was able to type in a specific subject or content area and receive a large array of lesson sites from which to choose. I also chose to use the search engines listed above due to past successful searches I had made as a teacher. Each search engine offered dozens of lesson sites that contained lesson plans on all subjects listed in my search.

In order to ensure that the lessons of choice for the lesson plan guidebook covered the standards I was searching for, I had to carefully read each one and locate the standard. The most important aspects to the development of this project included: my search for valuable lesson sites, lessons within the sites that contained easy to read directions, lessons that were
teacher developed, and lessons that had specific formats. Each lesson had to contain a specific format that would be easy to follow for the teachers.

Evaluation of Project

I evaluated the project based on three forms of evaluation. The three evaluation methods were observation, interviews, and a formative evaluation survey. I observed three teachers using the guidebook, I interviewed each of the three teachers after they used the guidebook, and I gave the formative evaluation survey once they had adequate time to use the guidebook.

It was not difficult finding teachers that wanted to view the lesson plan guidebook. Two of the teachers were located at my school site (Sky Country) and the other teacher taught in the Riverside Unified School District. As the teachers used the guidebook, I observed that they moved through it with ease. Each teacher selected the area of curriculum they wanted to explore, opened up the book, and followed the selected lesson plan as they would with their students. However, the most beneficial portion of the evaluation came through the interviews.
I allowed each teacher to openly discuss their likes and dislikes of the guidebook during our interview. I wanted the teachers to be open and honest about how they felt the guidebook would or would not help them. The interview contained questions that were very basic in nature. I asked if the teachers felt they would use the lesson plan guidebook, how beneficial it would be to them, etc. Throughout the interviews there was a consensus on the best aspects and worst aspects of the guidebook. The three teachers stated that the lesson plan guidebook was easy to follow and, therefore, they now wanted to bring their students into the lab. They all stated an excitement for the possibility to use the guidebook to cover standards and not use up their own time to create their lesson plans. Each teacher also stated a need for even more lesson plans that covered each area of curriculum. Although they all stated that 15 lesson plans in each subject was adequate, they would like to have more to choose from for each subject. Through the formative evaluation survey, I found that the teachers all showed a willingness to use the guidebook with their students on a regular basis.
The formative evaluation survey was to be filled out on their own time. The teachers were not required to include their names on the surveys (Appendix F). Questions on the survey ranged from guidebook availability to guidebook readability. A few responses based on the surveys turned in by these teachers included: the book covered a large amount of the state standards that they needed to have met with their students, the quality of the lessons was the most important aspect of the project, and they would like to see more lessons added to the project. The teachers also mentioned that the lessons were easy to follow and contained valuable information that the students needed to know. Two of the teachers stated that the time using the lessons was valuable because the lessons were well formatted, easy to follow, and would be interesting for their students.

The lesson plan guidebook was designed to increase teacher and student motivation in the use of the computer lab, and to increase skills in the standards for second grade, via the computer. The teachers who evaluated the guidebook stated that they did indeed feel motivated to use the computer lab with their students.
Future Plan for Implementation

With more time, I hope to expand the lesson plan guidebook to better fit the needs of all teachers at my school site. It is my hope that teachers at my school site will continue to offer suggestions and help to make the project an even greater success. I would like to continue evaluating the project through surveys, observations, and interviews of the use of the lesson plan guidebook. I have been approached by my fellow co-workers to create lesson plan guidebooks at all grade levels.

The teacher lesson plan guidebook for second grade was implemented for a short while by three teachers. However, in the future, it needs to be implemented into the lab and reviewed by all second grade teachers at the school site. Many of the aspects to this guide that I would like to include have not been completed. I intend on adding at least 2-3 lessons per standard according to the State of California. I also intend on reviewing the specific standards that other grades would like to have met and would like to include a binder for each grade level. Grades K-6 have shown an interest in the project
and have voiced concern for their lack of use in the computer lab.

This project has been of tremendous help for the teachers and students at Sky Country. The teachers and students who have viewed or participated in using the guidebook have shown great interest in it. Many teachers have stated a need for lesson plan guidebooks such as mine in every grade up through high school. Future projects could include specific lessons plan guidebooks separated by grade level, subject, and standard. As technology continues to become a part of society and education, teachers are going to need a guide to help them in their effort to integrate technology into the curriculum. Teachers will continue to find that they have a shortage of time and that pre-prepared lessons will help to guide them in integrating technology. Teachers at any grade level and at any school site want sources to help make their job easier. The more resources they have to help them integrate technology into their curriculum, the better prepared the students will be for the future. Creating lesson plan guidebooks for all grade levels and that cover all standards would be of great benefit to all teachers.
CHAPTER FOUR

CONCLUSIONS

Recommendation for Professionals

Based on my experience in the creation of this project, I have a number of recommendations that are of value to professionals in the field of education. This project was created by one person. With many professionals creating a guidebook for teachers, I feel the guidebook could be more diverse. Teachers, districts, or any professional in the field of education might wish to create a lesson plan guidebook that could be used by a larger audience. Perhaps a book could be created that contained lessons teachers created and could be open for publication. Another recommendation was to have specific teachers chosen to implement the use of the lesson plan guidebook over a 6-9 month period of time.

The more input that the guidebook receives from professionals in the field of education, the more effective I feel it would be. With a diverse group of individuals working on the lessons, the quality of lessons would be ensured. Each teacher has specific and
unique qualities that will benefit in the creation of a lesson plan guidebook for their particular school site.

Another recommendation would be for teachers to create a lesson plan guidebook that would be accessible to teachers across the district, state, and even country. Teachers may wish to create their own lessons and compile them into a book that could be published and made available for teachers everywhere to use with their students.

My final recommendation would be for specific evaluations of the project to take place. It would be of great value if a teacher would create this project for their individual school site, then have three teachers specifically follow the guidebook for 6-9 months. At the end of the 6-9 months, an evaluation should show growth in student achievement if the guidebook has been successful. As a result, many teachers might see the value in the project and implement it into their classrooms.

Conclusions

I believe that this project will be of great benefit to all teachers who use it in the future. The teachers
who have viewed it so far have shown an excitement to use it in the future. I feel that although it could expand with a great deal of effort, it is a good start at helping teachers integrate technology into their teaching strategies. Dockstader (2000) states: "if your goal is to be a teacher that prepares students for the 21st century, then your objective has to be more challenging" (p. 1). A teacher teaching for the future must be prepared to be an instructional technology trainer and integrate technology into their curriculum (Dockstader, 2000). This project, I hope, can be the vehicle to motivate the teachers at my site to become more technologically literate. The project can continue to be a great resource to teachers looking to meet the standards through technology in a motivationally rich environment for the students.

In the conclusion of this project, I believe that the time it took to compile and organize the lessons would be well worth it once the teachers began using the project. Time is a major factor in teachers lack of implementing technology into their current curriculum. Many of the teachers observed, interviewed, surveyed included a lack of knowledge as well as a lack of time in planning for technology integration properly.
Students and teachers needed to be prepared to work with technology in their current lives and in the future. The teachers interviewed and observed spoke frequently about a lack of district training and a lack of time to prepare for the integration of technology. The lesson plan guidebook is to be used as a resource for teachers who are interested in integrating technology into the curriculum but do not have the time to create their own lesson plans.

The lesson plans that were compiled to make the guidebook were not easy to find. A teacher interested in finding and compiling their own set of lessons would have to spend many hours searching for lessons that fit the standards and had quality aspects to them. Although the resources were available for teachers through the Internet, taking the time to locate quality lessons to teach to their students was not what many were willing to do.

In order for the students of Sky Country and other elementary school students to be prepared to enter society, they need to be trained in computer technology. The teachers of Sky Country are one step closer in helping to meet the needs of the students through
technology integration. The teachers who use the lesson plan guidebook will help to meet the district and state standards that require technology usage by the students. The students will be more motivated to learn and will use higher level thinking skills in their studies.

As the teachers and students continue to use the guidebook (as hoped) throughout the year, I intend on adding more lessons that will cover all standards for second grade. The lessons that will be added to the guidebook in the future will always need to contain previously stated requirements. The hope of this project and any further additions to it are that teachers and students will use technology to better meet the standards. The lesson plan guidebook will continue to contain quality lessons that will help to decrease teacher time in preparing technology integration. With the compiled lessons that integrate technology into the core areas of the curriculum, teachers at Sky Country will no longer be able to ask, "What do we do in the computer lab with our students?"
APPENDIX A

STAR TESTING RESULTS FOR 2000
State: California  
County: Riverside  
District: Jurupa Unified  
School: Sky Country Elementary  
County Code: 33  
District Code: 67090  
School Code: 6104491  

STAR Score Summaries Report for  
Total All Students Tested: 508  
Spring 2000  

STANFORD 9 SCORES

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1. NPR stands for National Percentile Rank.
2. The National Percentile Rank is based on the mean NCE score for each group.
3. Mean scaled scores for groups in counties, districts, or schools whose student scores are based on mixed numbers of days of instruction should not be used to compare the performance of one school, district, or county with another.

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Score Explanations

Percentile Ranks
A percentile rank is the percent of people in the norming sample who had scores less than or equal to a student's score. A student with a reading comprehension score at the 60th percentile scored equal to or better than 60 percent of the students in the norming sample. Stanford 9 is a nationally normed test. This means that the norming sample is representative of a national cross-section of students that was tested in 1995. The norming sample for Stanford 9 included students from the northeastern, midwestern, southern, and western regions of the U.S. The sample was also representative of the nation in terms of ethnicity, urbanicity, socio-economic status, and students enrolled in private and Catholic schools. Since Stanford 9 is a nationally normed test, its norming sample was representative of the nation, but not necessarily of the state.

The SABE/2 is designed for students whose primary language is Spanish, and it was normed on a group of Spanish speaking students in bilingual classes in 12 states, including California, with substantial populations of Spanish speaking students. Because the norming group was not a nationally representative sample, all the normed scores are called "reference" scores rather than "national" scores. Student scores are compared to the scores of students in the reference group in the same way students who take the Stanford 9 are compared to a representative national sample.

NPR (National Percentile Rank) of the "Average" Student
For the STAR program, Stanford 9 reports national percentile ranks (NPRs) for individual students, but does not produce group level (e.g., school or district) percentile scores. A mean percentile rank for a group cannot be calculated from percentile ranks for individuals because percentile rank scores cannot be added or averaged across students. The national percentile rank of a hypothetical "average" student can be approximated by using Normal Curve Equivalent (NCE) scores. NCE scores divide the normal curve into 99 equal units. The NPR of the "average" student can be found by finding the average NCE score for a group of students, then finding the percentile score that is equivalent to the mean (average) NCE. This mean percentile can be roughly interpreted as the "NPR (national percentile rank) of the 'average' student."

RPR of the "Average" Student
Because the SABE/2 uses a reference sample of Spanish speaking students rather than a national representative sample of all students, all the percentile scores are compared to the reference group. The Reference Percentile of the "Average" student is calculated for groups of Spanish speaking students just as the National Percentile of the "Average" student is calculated for nationally normed tests such as the Stanford 9. Normal curve equivalent scores were used in the same way for the SABE/2 as for the Stanford 9 to estimate a percentile rank for the "average" student.
% Scoring Above the 75th NPR, % Scoring At or Above the 50th NPR, and % Scoring Above the 25th NPR
These scores correspond to the percent of students in the school, district, county, or state scoring in the top quarter nationally; the percent of students scoring in the top half nationally; and the percent of students scoring in the top three-quarters nationally. The three levels used to create these group scores are the 75th, 50th, and 25th national percentiles, respectively. The percent of students scoring above each level is calculated by counting the number of students scoring at or above a particular level (e.g., 50th percentile) or above a particular level (e.g., 25th percentile and the 75th percentile), dividing by the total number of scores, and converting to a percentage. The percent scoring at or above the 50th percentile is the percent of students in this school, district, county, or state whose scores would place them in the top half of the students tested nationally. The percent scoring above the 75th percentile and above the 25th percentile are the percents of students in this group whose scores would place them in the top quarter and top three-quarters, respectively, of the students tested nationally.

% Scoring Above the 75th RP, % Scoring Above the 50th RP, and % Scoring Above the 25th RP
These scores are similar to the scores above, except that the SABE/2 comparison group is a "reference" group of Spanish speaking students in bilingual classes.

Mean Scaled Score
Raw scores identify the number of items answered correctly on a test or sub-test. Raw scores are limited in their measurement precision because of differences among test items. For example, some items are more difficult than others. A scaled score takes item differences into account and is calculated to provide a more precise measure of the knowledge or skills tested. Through this calculation, an increase of one point at one place on the scale is described as being equal to a one-point increase anywhere else on the scale. Scaled scores are particularly useful for reporting changes over time. The Stanford Achievement Test Series provides results in terms of scaled scores for individual students and a mean or average scaled score for groups of students. The SABE/2 also provides scaled scores for individual students and a mean or average scaled score for groups of students. Scaled scores can be compared within the same test, but not between two different tests (e.g. Stanford 9 and SABE/2), nor even two different subjects on the same test, (e.g. Reading and Mathematics). For example, the scale on the Stanford 9 starts at approximately 200 and goes to 900, while the SABE/2 starts at 1 and goes to 999. A scaled score of 500 will have very different meanings on the Stanford 9 5th grade reading test, the Stanford 9 5th grade math test, and the SABE/2 5th grade reading test.
"The Madeline Hunter model"

SUMMARY

Teaching to an objective
[lesson objective—not a "step." See below for how to write a behavioral objective]

1. Objectives
2. Set [hook]
3. Standards/expectations
4. Teaching
   o Input
   o Modeling/demonstration
   o Direction giving [see below]
   o Checking for understanding
5. Guided Practice
6. Closure
7. Independent Practice

Behavioral Objective format:
Students will demonstrate their [knowledge, understanding, skill, etc.] of/to [concept, skill, etc.] by [activity performed to meet the lesson objective] according to [standard]. Example: Each student will demonstrate achievement of the skill of addition of whole numbers by adding columns of figures with paper and pencil accurately nine out of ten times individually in class.

Four step instructional process

1. Watch how I do it [modeling]
2. You help me do it (or we do it together) [together]
3. I'll watch you do it or praise, prompt and leave [guided practice]
4. You do it alone [independent practice].
Motivation "TRICKS"

1. Feeling Tone
2. Reward [extrinsic/intrinsic]
3. Interest
4. Level of Concern
   - accountability
   - time to produce
   - visibility
   - predictability
5. Knowledge of results
6. Success

Ways of monitoring

1. Oral individual
2. Oral together
3. Visual answers, e.g., "thumbs"
4. Written
5. Task Performance
6. Group sampling

Questioning Guidelines

1. Place signal [get their attention], then ask question
2. Ask question before designating the person to answer
3. Do not repeat nor rephrase the student's response. May ask for agreement by class or for others to respond. [GESA suggests that you should explain why the answer is good, however.]
4. Ask question then wait for 50% of hands [or "bright eyes," knowing looks]
5. Never ask a question of a student who you *know* cannot answer.

6. If the student is confused or can't answer, calmly repeat the same question or give a direct clue.

**Retention, Reinforcement**

1. Meaning/understanding (the most effective way to learn)

2. Degree of original learning. Learn it well the first time. [And don't practice it wrong!]

3. Feeling tone. [positive or negative will work but negative has some undesirable side effects.]

4. Transfer [emphasize similarities for positive transfer and differences where there might be an incorrect transfer.] [See Bloom's Taxonomy of Educational Objectives for levels of learning. Transfer implies all of the higher levels. See Barak Rosenshine re. decontextualizing following this summary of the "Hunter Model"--which is essential for effective transfer of knowledge and skills to the real world.]

5. Schedule of Practice. [Mass the practice at first, then create a regular follow-up schedule.

**Creating Directions**

1. break down into parts/steps.

2. Give only three at a time, one if the behavior is new.

3. Delay giving instructions until just before the activity.

4. Give directions in the correct sequence.

5. Plan dignified help for those who don't tune in. [no put-downs]

6. Give directions visually as well as orally (Visual representation of the task) [cf. Fred Jones' VIP]
Giving Directions

Give the planned directions [creation above].
Check the students' understanding ["Any questions?" does not check understanding.
Have a student model the behavior. [i.e, on the board or orally.]
If needed, remediate and recheck. [It is essential that students do not practice error.]
The Madeline Hunter "Seven Step" lesson design may be used for more than just direct instruction in the behavioral mode. It can be used as a shell for any instructional lesson or unit.
APPENDIX C

ANALYSIS SURVEY
Sample of Analysis Survey

Analysis Survey

Please comment on use of computer technology for personal use and for student use. (SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree and NA = Not Applicable)

Name: ___________________________ (optional)
Date: 
School: 
Grade: 

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I have background training in computer technology.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I regularly use the computer lab with my students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I use the computer lab with my students at least 1-2 times a week.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.</td>
<td>I am comfortable using the lab with my students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>I would like be more informed on how best to use the lab to integrate technology into the current standards.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
<td>I would use pre-created lessons if accessible that guide me in my use of the lab with students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I would like to use the lab more often with my students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I would use the lab more often if I had lessons to follow that would help me teach or review the standards.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I would like to see lessons that cover mathematics, science, and language arts standards. Please list specific standards of interest to you here:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I would like to help in creating lesson plans for the computer lab.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D

CALIFORNIA STATE STANDARDS

FOR SECOND GRADE
Reading

Word Analysis, Fluency, and Systematic Vocabulary Development

Students understand the basic features of reading. They select letter patterns and know how to translate them into spoken language by using phonics, syllabication, and word parts. They apply this knowledge to achieve fluent oral and silent reading.

Decoding and Word Recognition

1.1 Recognize and use knowledge of spelling patterns (e.g., diphthongs, special vowel spellings) when reading.
1.2 Apply knowledge of basic syllabication rules when reading (e.g., vowel-consonant-vowel = supper, vowel-consonant / consonant-vowel = supper).
1.3 Decode two-syllable nonsense words and regular multisyllabic words.
1.4 Recognize common abbreviations (e.g., Jan., Sun., Apr., St.).
1.5 Identify and correctly use regular plurals (e.g., -s, -es, -ies) and irregular plurals (e.g., fly/flies, wife/wives).
1.6 Read aloud fluently and accurately and with appropriate intonation and expression.

Vocabulary and Concept Development

1.7 Understand and explain common antonyms and synonyms.
1.8 Use knowledge of individual words in unknown compound words to predict their meaning.
1.9 Know the meaning of simple prefixes and suffixes (e.g., over-, un-, -ing, -ly).
1.10 Identify simple multiple-meaning words.

Reading Comprehension

Students read and understand grade-level-appropriate material. They draw upon a variety of comprehension strategies as needed (e.g., generating and responding to essential questions, making predictions, comparing information from several sources). The selections in Recommended Readings in Literature, Kindergarten Through Grade Eight illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading & by grade four, students read one-half million words Read annually, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade two, students continue to make progress toward this goal.
Structural Features of Informational Materials

2.1 Use titles, tables of contents, and chapter headings to locate information in expository text.

Comprehension and Analysis of Grade-Level-Appropriate Text

2.2 State the purpose in reading (i.e., tell what information is sought).
2.3 Use knowledge of the author's purpose(s) to comprehend informational text.
2.4 Ask clarifying questions about essential textual elements of exposition (e.g., why, what if, how).
2.5 Restate facts and details in the text to clarify and organize ideas.
2.6 Recognize cause-and-effect relationships in a text.
2.7 Interpret information from diagrams, charts, and graphs.
2.8 Follow two-step written instructions.

Literary Response and Analysis

Students read and respond to a wide variety of significant works of children's literature. They distinguish between the structural features of the text and the literary terms or elements (e.g., theme, plot, setting, characters). The selections in Recommended Readings in Literature, Kindergarten Through Grade Eight illustrate the quality and complexity of the materials to be read by students.

Narrative Analysis of Grade-Level-Appropriate Text

3.1 Compare and contrast plots, settings, and characters presented by different authors.
3.2 Generate alternative endings to plots and identify the reason or reasons for, and the impact of, the alternatives.
3.3 Compare and contrast different versions of the same stories that reflect different cultures.
3.4 Identify the use of rhythm, rhyme, and alliteration in poetry.
Writing Strategies

Students write clear and coherent sentences and paragraphs that develop a central idea. Their writing shows they consider the audience and purpose. Students progress through the stages of the writing process (e.g., prewriting, drafting revising, editing successive versions).

Organization and Focus

1.1 Group related ideas and maintain a consistent focus,

Penmanship

1.2 Create readable documents with legible handwriting.

Research

1.3 Understand the purposes of various reference materials (e.g., dictionary, thesaurus, atlas).

Evaluation and Revision

1.4 Revise original drafts to improve sequence and provide more descriptive detail.

Writing Applications (Genres and Their Characteristics)

Students write compositions that describe and explain familiar objects, events, and experiences. Student writing demonstrates a command of standard American English and the drafting research, and organizational strategies outlined in Writing Standard 1.0.

Using the writing strategies of grade two outlined in Writing Standard 1.0, students:

2.1 Write brief narratives based on their experiences:
   a. Move through a logical sequence of events.
   b. Describe the setting & characters, objects, and events in detail.

2.2 Write a friendly letter complete with the date, salutation, body, closing and signature.
Written And Oral English Language Conventions

The standards for written and oral English language conventions have been placed between those for writing and for listening and speaking because these conventions are essential to both sets of skills. Students write and speak with a command of standard English conventions appropriate to this grade level.

Sentence Structure

1.1 Distinguish between complete and incomplete sentences.
1.2 Recognize and use the correct word order in written sentences.

Grammar

1.3 Identify and correctly use various parts of speech, including nouns and verbs, in writing and speaking.

Punctuation

1.4 Use commas in the greeting and closure of a letter and with dates and items in a series.
1.5 Use quotation marks correctly.

Capitalization

1.6 Capitalize all proper nouns, words at the beginning of sentences and greetings, months and days of the week, and titles and initials of people.

Spelling

1.7 Spell frequently used, irregular words correctly (e.g., was, were, says, said, who, what, why).
1.8 Spell basic short-vowel, long-vowel, r-controlled, and consonant-blend patterns correctly.
Listening and Speaking

Listening and Speaking Strategies
Students listen critically and respond appropriately to oral communication. They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

1.1 Determine the purpose or purposes of listening (e.g., to obtain information, to solve problems, for enjoyment).
1.2 Ask for clarification and explanation of stories and ideas.
1.3 Paraphrase information that has been shared orally by others.
1.4 Give and follow three- and four-step oral directions.

Organization and Delivery of Oral Communication

1.5 Organize presentations to maintain a clear focus.
1.6 Speak clearly and at an appropriate pace for the type of communication (e.g., informal discussion, report to class).
1.7 Recount experiences in a logical sequence.
1.8 Retell stories, including characters, setting, and plot.
1.9 Report on a topic with supportive facts and details.

Speaking Applications (Genres and Their Characteristics)

Students deliver brief recitations and oral presentations about familiar experiences or interests that are organized around a coherent thesis statement. Student speaking demonstrates a command of standard American English and the organizational and delivery strategies outlined in Listening and Speaking Standard 1.0.

Using the speaking strategies of grade two outlined in Listening and Speaking Standard 1.0, students.

2.1 Recount experiences or present stories:
   a. Move through a logical sequence of events.
   b. Describe story elements (e.g., characters, plot, setting).
2.2 Report on a topic with facts and details, drawing from several sources of information.
Mathematics Standards

By the end of grade two, students understand place value and number relationships in addition and subtraction, and they use simple concepts of multiplication. They measure quantities with appropriate units. They classify shapes and see relationships among them by paying attention to their geometric attributes. They correct and analyze data and verify the answers.

Number Sense

Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000:

1.1 Count, read, and write whole numbers to 1,000 and identify the place value for each digit.
1.2 Use words, models, and expanded forms (e.g., 45 = 4 tens + 5) to represent numbers (to 1,000).
1.3 Order and compare whole numbers to 1,000 by using the symbols <, =, >.

Students estimate, calculate, and solve problems involving addition and subtraction of two- and three-digit numbers:

2.1 Understand and use the inverse relationship between addition and subtraction (e.g., an opposite number sentence for 8 + 6 = 14 is 14 - 6 = 8) to solve problems and check solutions.
2.2 Find the sum or difference of two whole numbers up to three digits long.
2.3 Use mental arithmetic to find the sum or difference of two two-digit numbers.

Algebra and Functions

Students model and solve simple problems involving multiplication and division:

3.1 Use repeated addition, arrays, and counting by multiples to do multiplication.
3.2 Use repeated subtraction, equal sharing, and forming equal groups with remainders to do division.
3.3 Know the multiplication tables of 2s, 5s, and 10s (to 'times 10") and commit them to memory.
Students understand that fractions and decimals may refer to parts of a set and parts of a whole:

4.1 Recognize, name, and compare unit fractions from $\frac{1}{12}$ to $\frac{1}{2}$.
4.2 Recognize fractions of a whole and parts of a group (e.g., one-fourth of a pie, two-thirds of 15 balls).
4.3 Know that when all fractional parts are included, such as four-fourths, the result is equal to the whole and to one.

5.0 Students model and solve problems by representing, adding, and subtracting amounts of money:
5.1 Solve problems using combinations of coins and bills.
5.2 Know and use the decimal notation and the dollar and cent symbols for money.

Students use estimation strategies in computation and problem solving that involve numbers that use the ones, tens, hundreds, and thousands places:

6.1 Recognize when an estimate is reasonable in measurements (e.g., closest inch).

Students model, represent, and interpret number relationships to create and solve problems involving addition and subtraction:

1.1 Use the commutative and associative rules to simplify mental calculations and to check results.
1.2 Relate problem situations to number sentences involving addition and subtraction.
1.3 Solve addition and subtraction problems by using data from simple charts, picture graphs, and number sentences.

Statistics, Data Analysis, and Probability

Measurement and Geometry

Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured:

1.1 Measure the length of objects by iterating (repeating) a nonstandard or standard unit
1.2 Use different units to measure the same object and predict whether the measure will be greater or smaller when a different unit is used.
1.3 Measure the length of an object to the nearest inch and/or centimeter.
1.4 Tell time to the nearest quarter hour and know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year).
1.5 Determine the duration of intervals of time in hours (e.g., 11:00 a.m. to 4:00 p.m.).
Students identify and describe the attributes of common figures in the plane and of common objects in space.

2.1 Describe and classify plane and solid geometric shapes (e.g., circle, triangle, square, rectangle, sphere, pyramid, cube, rectangular prism) according to the number and shape of faces, edges, and vertices.

2.2 Put shapes together and take them apart to form other shapes (e.g., two congruent right triangles can be arranged to form a rectangle).

Students collect numerical data and record, organize, display, and interpret the data on bar graphs and other representations:

1.1 Record numerical data in systematic ways, keeping track of what has been counted.

1.2 Represent the same data set in more than one way (e.g., bar graphs and charts with tallies).

1.3 Identify features of data sets (range and mode).

1.4 Ask and answer simple questions related to data representations.

Mathematical Reasoning

Students demonstrate an understanding of patterns and how patterns grow and describe them in general ways:

2.1 Recognize, describe, and extend patterns and determine a next term in linear patterns (e.g., 4, 8, 12 . . . ; the number of ears on one horse, two horses, three horses, four horses).

2.2 Solve problems involving simple number patterns.

3.0 Students make decisions about how to set up a problem:

1.1 Determine the approach, materials, and strategies to be used.

1.2 Use tools, such as manipulatives or sketches, to model problems.

Students solve problems and justify their reasoning:

2.1 Defend the reasoning used and justify the procedures selected.

2.2 Make precise calculations and check the validity of the results in the context of the problem.

Students note connections between one problem and another.
Physical Sciences

1. The motion of objects can be observed and measured. As a basis for understanding this concept:
   a. Students know the position of an object can be described by locating it in relation to another object or to the background.
   b. Students know an object's motion can be described by recording the change in position of the object over time.
   c. Students know the way to change how something is moving is by giving it a push or a pull. The size of the change is related to the strength, or the amount of force, of the push or pull.
   d. Students know tools and machines are used to apply pushes and pulls (forces) to make things move.
   e. Students know objects fall to the ground unless something holds them up.
   f. Students know magnets can be used to make some objects move without being touched.
   g. Students know sound is made by vibrating objects and can be described by its pitch and volume.

Life Sciences

2. Plants and animals have predictable life cycles. As a basis for understanding this concept:
   a. Students know that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.
   b. Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.
   c. Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.
   d. Students know there is variation among individuals of one kind within a population.
   e. Students know light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.
   f. Students know flowers and fruits are associated with reproduction in plants.
Earth Sciences

3. Earth is made of materials that have distinct properties and provide resources for human activities. As a basis for understanding this concept:
   a. Students know how to compare the physical properties of different kinds of rocks and know that rock is composed of different combinations of minerals.
   b. Students know smaller rocks come from the breakage and weathering of larger rocks.
   c. Students know that soil is made partly from weathered rock and partly from organic materials and that soils differ in their color, texture, capacity to retain water, and ability to support the growth of many kinds of plants.
   d. Students know that fossils provide evidence about the plants and animals that lived long ago and that scientists learn about the past history of Earth by studying fossils.
   e. Students know rock, water, plants, and soil provide many resources, including food, fuel, and building materials, that humans use.

4. 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. Students will:
   a. Make predictions based on observed patterns and not random guessing.
   b. Measure length, weight, temperature, and liquid volume with appropriate tools and express those measurements in standard metric system units.
   c. Compare and sort common objects according to two or more physical attributes (e.g., color, shape, texture, size, weight).
   d. Write or draw descriptions of a sequence of steps, events, and observations. e. Construct bar graphs to record data, using appropriately labeled axes.
   f. Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects.
   g. Follow oral instructions for a scientific investigation.
Social Studies Standards

People Who Make a Difference

Students in grade two explore the lives of actual people who make a difference in their everyday lives and learn the stories of extraordinary people from history whose achievements have touched them, directly or indirectly. The study of contemporary people who supply goods and services aids in understanding the complex interdependence in our free-market system.

2.1 Students differentiate between things that happened long ago and things that happened yesterday.
1. Trace the history of a family through the use of primary and secondary sources, including artifacts, photographs, interviews, and documents.
2. Compare and contrast their daily lives with those of their parents, grandparents, and/or guardians.
3. Place important events in their lives in the order in which they occurred (e.g., on a timeline or storyboard).

2.2 Students demonstrate map skills by describing the absolute and relative locations of people, places, and environments.
1. Locate on a simple letter-number grid system the specific locations and geographic features in their neighborhood or community (e.g., map of the classroom, the school).
2. Label from memory a simple map of the North American continent, including the countries, oceans, Great Lakes, major rivers, and mountain ranges. Identify the essential map elements: title, legend, directional indicator, scale, and date.
3. Locate on a map where their ancestors live(d), telling when the family moved to the local community and how and why they made the trip.
4. Compare and contrast basic land use in urban suburban and rural environments in California.

Students explain governmental institutions and practices in the United States and other countries.

1. Explain how the United States and other countries make laws, carry out laws, determine whether laws have been violated, and punish wrongdoers.
2. Describe the ways in which groups and nations interact with one another to try to resolve problems in such areas as trade, cultural contacts, treaties, diplomacy, and military force.
Students understand basic economic concepts and their individual roles in the economy and demonstrate basic economic reasoning skills.

1. Describe food production and consumption long ago and today, including the roles of farmers, processors, distributors, weather, and land and water resources.
2. Understand the role and interdependence of buyers (consumers) and sellers (producers) of goods and services.
3. Understand how limits on resources affect production and consumption (what to produce and what to consume).

Students understand the importance of individual action and character and explain how heroes from long ago and the recent past have made a difference in others' lives (e.g., from biographies of Abraham Lincoln, Louis Pasteur, Sitting Bull, George Washington Carver, Marie Curie, Albert Einstein, Golda Meir, Jackie Robinson, Sally Ride).
1. Would you like to do class assignments on the computer?

2. Do you have access to a computer at home?

**If you answered yes to number two, please go on. If you do not have access to a computer at home, you may stop now.

3. How often do you use the computer at home?

4. What do you do on the computer (play games, write stories, look up information)?

5. Do you get onto the internet at home?

6. Would you like to have more of your class assignments done on the computer either at school or at home?
APPENDIX F

TEACHER FORMATIVE EVALUATION

SURVEY SAMPLE
Teacher Formative Evaluation Survey Sample

Please comment on the use of the lesson plan guide in the computer lab. 
( SA= Strongly Agree; A= Agree; D= Disagree; SD= Strongly Disagree and NA= Not Applicable)

Name: __________________________ (optional)

Grade:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I used the lesson plan guide for personal use.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>2.</td>
<td>The lesson plan guide was accessible to me at the times I needed access to it.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>3.</td>
<td>The lesson plan guide gave me ideas to apply with my students when in the lab.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>4.</td>
<td>I used the lesson plan guide in the lab with my students.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>5.</td>
<td>The lesson plan guide was easy to follow.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>6.</td>
<td>The guide covered all the standards of value to me and my students at this time.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>7.</td>
<td>The lesson plan guide was an effective tool to use in the lab.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>8.</td>
<td>I plan on using the lesson plan book in the future when bringing my students into the computer lab.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>9.</td>
<td>I would like to see more standards covered in the lesson plan book.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>10.</td>
<td>I would like to see the book expanded to cover more subjects and/or standards.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
</tbody>
</table>

Suggestions that you have regarding your personal experience using the lesson plan guide book with your students in the computer lab:
APPENDIX G

LESSON PLANS FOR MATHEMATICS,
LANGUAGE ARTS, SOCIAL
STUDIES, AND SCIENCE
Example mathematics lesson plan for second grade teachers.

Mathematics lesson 1

Title - Kid-Pix Puzzles
By - Elissa Wynn
Subject - Math, Computers & Internet
Grade Level - K-2

California State standards met: 2.0, 2.1, 2.2

(Setting)
Computer Lab

(Objective)
Students will:
* create geometric shapes
* label geometric shapes
* move and place geometric shapes

(Preparation)
Create enough floppy disks (or files saved to hard drive) for each computer. This template will consist of 4-8 shapes being studied within the 'regular' classroom. The shapes are filled in using the bucket tool with a variety of textures and colors. Next, I type the names of the corresponding shapes on one side of the screen. Now comes the interesting part: I break apart the shapes into two pieces and move them around on the page. The students will need to reassemble them when they arrive.

Have the template loaded prior to the arrival of the students (this will save oodles of time). When the students are gathered around the projector, describe what they are seeing on their templates. Explain that they will need to use the proper 'move' tool to join the shapes back together. They will also need to move the corresponding word next to the appropriate shape.

Be sure to leave on the board the corresponding names and shapes, as this will undoubtedly assist the children who are not so proficient at reading.

NOTE: The lesson written here is intended for Kindergarten students, using only three shapes to begin with. As skills develop over the year, more shapes and words may be introduced. The difficulty level should increase with more shapes and words for grades 1 and 2, allowing the students to create their own shapes, label them independently, and create puzzles for their classmates to complete.
Mathematics Lesson 2

Subject Area: Math

Grade Level: 2nd.

California State standards met: 1.0, 1.2, 1.3

Topic(s): Measurement using nonstandard units

Purpose(s) of Lesson:

The learners will:

• measure length using nonstandard units.

• estimate, measure, and compare lengths using nonstandard units.

Materials Needed:

*Inch by Inch* by Leo Lionni, craft sticks, bean bag inchworm, green packing peanuts, *Kid Pix* or other drawing program, computer with Internet connections, CD-ROM *James Discovers Math*, large inchworm made out of poster paper, inchworm traced on a transparency, big hand sheet, inchworm sheet.

Time Required: 2 days.

Procedure:

1. Read the book *Inch by Inch* orally. Help the children to locate the inchworm in the book noting his length. Discuss the book and what the inchworm could do with his body and why he could do it. (I use the beanbag inchworm here to add to the story. I use it to act it out.).

2. Have pre-made “inchworms” ready before the lesson. These are made by gluing one green packing peanut onto a craft stick and drawing or putting on a wiggle eye. The packing peanuts that I use are exactly one inch long. You may want to check your length before you begin and adjust as needed. Give each child an inchworm with which to measure.

3. Place the large cutout of the inchworm on the floor in front of the room. Have each child look at his or her inchworm and then go and find something in the room that they estimate to be one inchworm long. Have them place the items in the large cutout and then take a seat. After that, let each child pick up their item and check for correctness. If
the estimate was fairly accurate, let them put the object back into the large cutout. If it was not accurate, have them continue to try to estimate correctly.

4. For variations have the students find items longer than the inchworm and shorter than the inchworm.

5. Have the students select items in the room that they want to measure. The students should estimate first then use the inchworms to measure. (Have extras made for this part of the lesson.)

6. Have the students use a drawing program such as KidPix and draw what they measured and underneath it trace the amount of inchworms it measured. Here is where you would use the inchworm transparency so they could place it on the screen to trace the inchworms accurately in length. They could also write or draw things that are longer or shorter than the inchworms on the computer.

Explorations and Extensions:

1. Ask students to convert the inches to centimeters by using the Length Conversions Web page.

2. Use the CD-ROM James Discovers Math at the computer center which provides practice in estimating and measuring length using nonstandard units.

3. Use the Internet site http://www.cuisenaire.com/cat-inchworms.html as a class activity. You will use the inchworm sheet here.

4. Use the lesson How Big Is a Hand? from the site. You will use the big hand sheet here. Measurement Teacher Activity Sheet

Evaluation Tools/Opportunities:

1. Monitor and watch the students as they estimate and measure.
**Summative:**

**Assessment Rubric**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The student makes reasonable estimates and measures accurately with nonstandard units.</td>
</tr>
<tr>
<td>3</td>
<td>The child makes fairly reasonable estimates and measures with nonstandard units with few errors.</td>
</tr>
<tr>
<td>2</td>
<td>The child makes unreasonable estimates and makes many errors when measuring with nonstandard units.</td>
</tr>
<tr>
<td>1</td>
<td>The child needs guidance to make estimates and measure with nonstandard units.</td>
</tr>
</tbody>
</table>

**Products:**

1. Printouts from the *KidPix* or other drawing program used.

2. Printouts of students drawings of things that are longer or shorter than the inchworms. They could draw them on a drawing program or write the names of the objects on a computer.
Language Arts sample lesson plans for second grade teachers.

Language Arts lesson 1

Subject Area(s): Language
Grade Level(s): 2nd grade
Topics: Singular and plural nouns, adjectives and action verbs

Purpose(s) of Lesson:

The purpose of this lesson is to have a review on singular and plural nouns, adjectives and action verbs and then to use those parts of speech in context using the Wacky Web Tales site on the Internet to allow students to create their own stories.

Materials Needed:

Computer with Internet capabilities, presentation system, copies of the Wacky Web Tales work page (one per student).

Time Required: 2 class periods

Lesson Procedure:

Day 1

1. Access the Wacky Web Tales site and briefly explain to the students that they will be writing silly stories just by providing requested words that are specific parts of speech and that the activity will be done on the Internet.

2. As a whole class discussion have a review on the following terms:
   - singular and plural nouns
   - adjectives
   - verbs - present and past tense.

   Make sure for each of these that a lot of examples are shared and check for understanding.

3. Access the Wacky Web Tales site and choose one of the tales and print out the Wacky Web Tales Work Sheet that goes with it. Duplicate it and distribute to students. Then tell them to write the requested words in the blanks. Students are not to say their answers out loud.
4. Have students place completed sheets in binders until the following day when each will have a turn to input the information on the computer.

Day 2

1. Teacher will access Internet and go to the Wacky Web Tales site.

2. Using the presentation system show the entire class what they are to do when they come to the computer for individual work by typing in the requested words. Also go through the steps for which commands to use in order to print out completed story and how to erase story to set up computer for the next student.

3. As day progresses allow as many students as possible to type in their stories and print them.

4. When all students are finished let them take turns sharing their stories with each other. If possible, display the stories outside of the classroom to share with the school or make books with them for the class library.

Explorations and Extensions:

1. Retype the stories on a word processor and add drawings, clip art or photographs. Print out the stories and share them with another class.

2. Have interested students compose a new story and submit it to the Wacky Web Tales site.

Evaluation Tool(s) and Opportunities:

Summative

1. Peer Critiquing - Have students work in small groups to critique each other's stories. Ask them to decide if the correct parts of speech were used in each blank, spelling was correct, and appropriate capitalization was used.

2. Oral Presentations - Have students share what they liked about each student's presentation of their tale. Explain that they are to make specific "I liked . . ." statements about such things as the hilarity of the story, the student's voice modulation and expressiveness, clarity of speech, etc.

Products
1. Wacky Web Tale stories.

2. New Wacky Web Tales submitted to Internet site.
Language Arts Lesson 2

Subject Area: Language Arts, Library Skills

Grade Level: 2nd

California State standards met: 3.3.1, 3.3.3, 3.3.4, 2.2.1

Topic(s): Fairy Tales

Purpose(s) of Lesson:

15. The students will:
   • identify the elements of a fairy tale.
   • create a Story Elements Chart using the Internet.
   • write their own fairy tales.

Materials Needed:

Book: *Yeh Shen, A Cinderella Story From China*, pencil, Story Elements Chart, computers with Internet access, and printer

Time Required: 5 class periods

Procedure:

1. Explain that fairy tales are fantasy and that there are specific criteria that make a fairy tale a fairy tale. Access the All About Folktales Web page and print it out. Ask students to read it, or read it to them, and find out what makes a folktale. Have them write these requirements on the What's a Folktale worksheet.

2. Prompt and encourage the students to generate the following list:
   • usually begins "once upon a time.." (setting)
   • there is always a hero or a heroine (characters)
   • one of the characters is someone of royalty
   • one of the characters is evil or wicked
   • good versus evil (theme)
   • the number three or the number seven is used in the story
- a message is learned or a message delivered
- animals may be characters
- the story ends with the words...and they lived happily ever after

Visit the How to write a folktale and follow the directions to write original folktales. Completed folktales can be submitted to this Web page by emailing to: kidnews@umassd.edu

4. Read Yeh Shen to the class and model how to fill in the Story Map Chart.

5. Read and analyze a fairy tale on the New Fairytales Online Web page and fill in a Story Map Chart. Have the students use these sites or locate their own Fairy Tale Links

Children's Literature Web Guide

Stories, Folklore, and Fairy Tales Theme Page

6. Write a fairy tale using the story elements that have been discussed. Encourage the students to illustrate their tales.

Explorations and Extensions:

1. Create a bar graph to indicate the number of elements a particular story might include.

2. Discuss the word character with the students, and identify character traits of the hero or heroine, or the villain.

3. Create a student fairy tale booklet.

4. Compare several versions of the fairy tale Cinderella.

Evaluation Tools/Opportunities:

Process:

1. Evaluate successful student participation.

Summative:

1. Students will be graded on:
   - Completion of Story Elements chart
   - Completion of written and illustrated fairy tale
Products:

1. Story elements chart
2. Printouts of fairy tales found on the Internet
3. Written and illustrated fairy tales
Social Studies sample lessons for second grade teachers.

Social Studies Lesson 1

Subject Area(s): Science, Social Studies, Art
Grade Level(s): Grades 2-3
Topics: Writing Reports, Comparing and Contrasting

California State Standards met for social studies: 2.2.2

Purpose(s) of Lesson:

1. To use the Internet to search for information and pictures of Australian animals.
2. To compare and contrast native animals of Australia and Louisiana.
3. To create reports describing the habitat and diet of an Australian animal.

Materials Needed:
Internet connection, printer, crayons, globe, world map, reference books (encyclopedias)

Time Required: 4-5 class periods

Lesson Procedure:

A. Discussion of continents and locations.
B. Locate Australia on the globe and world map.
C. Brainstorm to get a list of animals that might live in Australia.
D. Discussion of Louisiana's native animals.
E. Compare the two lists. Discuss.
F. Make a list of places we could search for information on Australian animals.
G. Have resource books (encyclopedias, dictionaries) available for students to use.
H. Use the presentation system (connected to computer) to take students to an "online Australian animal zoo" to see pictures and read about Australian animals.
I. Demonstrate how to use the Australian Animal Archive (http://www.aaa.com.au/A_Z/Home.html). Students click on any letter of the alphabet to see animals whose names begin with that letter. With each picture, there is a description of that animal along with information about habitat and diet.

J. Students use this information to write a report about the Australian animal of their choice. In the report, the student will describe the animal, its habitat and diet. The student must also tell how this Australian animal is similar to an animal native to Louisiana. (For example - A kangaroo is similar to a rabbit because they both can hop.) They will also draw and color a picture of the Australian animal.

K. The students will give an oral presentation of their report.

L. A booklet will be made with the Australian animal reports and illustrations.

Questions:

1. What kinds of animals might live in Australia?
2. What kinds of animals live in Louisiana?
3. What kinds of wild animals have you seen in Louisiana?
4. How are some of these animals similar? different?
5. Why do you think Louisiana and Australia have different animals?
6. What can we use to learn more about Australian animals?
7. What were your favorite Australian animals?

Explorations and Extensions:

1. Research another country's native animals and follow the same procedure.
2. Share information with other classes.
3. Contact an Australian tourist bureau for pamphlets and information on native animals.
4. Students can create riddles about their animals.
5. Watch a video on Australian animals.
Evaluation Tool(s) and Opportunities:

1. Prepare a student log to record Internet use.

2. Report on Australian animal with a comparison to a native Louisiana animal.

3. Oral presentation of report.

4. Videotaped presentation.

Other Internet Sites of Interest Related to this Topic:
Lone Pine Koala Sanctuary - http://www.koala.net/
Sample Science lesson plan for second grade teachers.

Science lesson 1

Subject Area(s): Science, Language Arts, Math, Art, Music
Grade Level(s): 2nd
Topics: Metamorphosis, butterfly classification

California State standards met for science: 2a, 2b, 2c; 4a, 4d, 4f

Purpose(s) of Lesson:

The children will learn an appreciation of nature through observation of the life cycle of the butterfly.

Materials Needed:

The books Where Does the Butterfly Go When It Rains by May Garelick, The Very Hungry Caterpillar by Eric Carle.; egg cartons, fresh fruit (apples, pears, plums, strawberries, and orange)

Time Required: 1 week (although the metamorphosis may take 10 to 14 days)

Lesson Procedure:

Day 1

Background Information:

Butterflies are insects that come in many shapes, sizes, and colors. Children are familiar with these insects' caterpillar forms from an early age, when no sidewalk creature escapes their natural curiosity. Butterflies belong to the insect order of Lepidoptera, which means "scaly wings." A butterfly's body is divided into three sections: the head, the antennae, and the proboscis (a tube used to suck liquids). Butterflies go through different stages until they reach adulthood. This process of changing forms is called metamorphosis, which means "changing." The following description can be used for the students.

The Life Cycle of a Butterfly:

1. The first stage is called the egg stage. The mother butterfly lays eggs on a leaf.

2. In the larva stage, the egg hatches on the leaf and out comes a caterpillar.

3. In the pupa stage the caterpillar grows and it pops out of its old skin, already wearing a new one. This phenomenon occurs four or five
times, after which the caterpillar begins to produce silk. With this silk, it attaches its body to a leaf or twig (or in our experiment, to a piece of cheese clothe on our plastic jar lid.) It then sheds its furry skin for the last time. Under the skin is a hard form called chrysalis. The caterpillar's body turns to a soft liquid, from which the wings, legs and other body parts of the butterfly will form.

4. The adult stage is also called the Imago.

5. The Imago stage begins when the chrysalis is broken and the butterfly breaks out.

Monday

1. Introduce the lesson by reading The Very Hungry Caterpillar by Eric Carle.

2. Ask the children how the story began and when they mention the egg, draw an egg and label it on a piece of chart paper. Ask the children to describe the rest of the events in the story as you continue to draw the story map, in a circular form, leading to the adult stage.

3. Show the children the live caterpillars; allow them to pass the plastic jar around the circle of friends.

Tuesday

1. Access Life Cycle (http://www.bassilichi.it/lorenzi/butterfly/glif.htm) and let students study the pictures of the life cycle of a butterfly. Read the text to them.

2. The life cycle of a butterfly consists of four stages: egg, caterpillar, pupa, and adult (Imago). This finger play reinforces the stages in the life cycle of the butterfly. Dramatize it with movements, or use of flannel board patterns of each stage.

   **Watch Me Grow**

   Here is the egg, small and round
   On a leaf above the ground.
   Here is the caterpillar, watch it eat
   Lots of leaves, juicy and sweet.
   Here is the chrysalis, small and thin;
   The changing pupa sleeps within.
   Here is the butterfly, fluttering away;
   Time to celebrate its happy birthday.
3. Bring out Monday's chart story and go over sequence of life cycle.

Wednesday

1. Read *Where Does the Butterfly Go When It Rains* by May Garelick. Give each child a paper plate with some blue powered tempera paint sprinkled on it. Let the children put their hands in a bowl of water and then gently "rain" on the plates. When the pictures have dried, let the children choose a butterfly sticker to press onto their plates.

2. Have children dictate their ideas about where the butterfly goes when it rains. Write their ideas on the plate. Visit The Children's Butterfly Site (http://www.mesc.usgs.gov/Butterfly.html) to find out the answer to this question: "Where do butterflies go when it rains?"

Thursday

1. Sing this lively song about insect behavior to the children to the tune of *The Wheels on the Bus*.

   **Ballad of the Bugs**

   The caterpillars on the leaves go creep, creep, creep
   Creep, creep, creep, creep, creep, creep.
   The caterpillars on the leaves go creep, creep, creep,
   All around the meadow.

   The caterpillars on the leaves go munch, munch, munch
   Munch, munch, munch, munch, munch, munch.
   The caterpillars on the leaves go munch, munch, munch,
   All around the meadow.

   The chrysalis on the twig goes sleep, sleep, sleep,
   Sleep, sleep, sleep, sleep, sleep, sleep,
   The chrysalis on the twig goes sleep, sleep, sleep,
   All around the meadow.

   The butterfly in the sky goes flitter-flutter,
   Flitter-flutter, flitter-flutter.
   The butterfly in the sky goes flitter-flutter,
   All around the meadow.

2. Have the children come up to the front in-groups of four and act out the song.
Friday

1. Have the students do this Cooking Activity: **Very Hungry Pre-K Caterpillars** (that caterpillar had the right idea when he filled up on fruit Monday to Friday). Have the following fruits available for the children to prepare their snacks - apples, pears, plums, strawberries, and oranges.

2. Give each child a section of an egg carton (6 holes) to represent his/her caterpillar. Provide them with a large pompom to place in the first section of the caterpillar. Help the children glue on wiggle eyes and a pipe cleaner for the antennae. In a buffet type set-up, have the children proceed around the table counting the fruit and putting it in the appropriate hole of the egg carton caterpillar to match these directions:

   Monday 1 apple slice
   Tuesday 2 pear slices
   Wednesday 3 plum slices
   Thursday 4 strawberry pieces
   Friday 5 orange slices

3. 

4. Allow the children to enjoy their caterpillar snacks while you read aloud - another favorite Eric Carle selection. This could be the introduction of the next week's insect to be studied.

5. When unit is completed, have students reflect back to the very beginning and try to remember what the caterpillars looked like and what they developed into. Talk about the changes, and how this happens every year, year after year. Then have students sing this special goodbye song to their butterflies then release them to their natural habitat.
Goodbye Butterfly

Tune (Good Night Ladies)

Goodbye butterfly, Goodbye butterfly,
Goodbye butterfly, Flitter and Fly
Way up to the sky.

Explorations and Extensions:

Each of the above and below Internet sites has links for further research. Extensions would include the following learning center activities.

Learning Centers: These centers are used daily by the children. Each group of children (same 4 children for management purposes) stays together all week. They visit a different center each day.

Library Center -
**Puppet Appeal:** Hot glue wiggle eyes and stripes to a sock to create the caterpillar. Reverse the sock: then hot glue wiggle eyes, felt antennae, and decorated felt wings to the inside of the sock to create the butterfly.

To change the caterpillar puppet into a butterfly, pull it off one hand, reversing it as you pull. Slip it onto the opposite hand. It's a beautiful butterfly. Use the puppet to retell the story. Prepare tag board fruits and foods with holes in their middles to slip over the caterpillar (child's arm in the sock) as he eats through them. The children love this activity. (Idea from Brenda Hume of Summerville, SC)

Listening Center-
On our filmstrip machine the children enjoy watching and listening to the story, The Caterpillar and the Polliwog by Jack Kent. I usually put 2 children at a time in the above two centers and then switch them half way through the center time period.

Discovery Center-
**Watch and Wonder:** The best way to understand the changes that occur with caterpillars and butterflies is to actually observe the process. Your little ones will be mesmerized by this wonderful experience.

Computer Center-
**Millie's Math House** by Edmark This can be used to reinforce counting skills as well as to create and print out their very own caterpillar.

Art Center-
**Beautiful Butterflies:** Give each child a butterfly shape that is folded in half. Have the children unfold the shape and sponge paint one side of the butterfly. Refold the shape and print the exact same design on the other half. Glue a tongue depressor on
the center fold line (representing the body). Glue on wiggle eyes and pipe cleaners completing the beautiful butterflies.

**Table Toy Center**
These games are provided on a designated shelf with a bulletin board close by to display games and student projects.

1. **Caterpillar Concentration:** Staple green paper plates onto a bulletin board in the shape of a caterpillar. Behind each circle have a hidden letter, a shape, or a number you'd like your students to identify. Make sure each symbol is represented twice. The children will remove the plates when a pair of symbols is matched.

2. **Creations from Explorations:** Encourage children to create caterpillars and butterflies from manipulatives such as pattern blocks, attribute blocks, and other building sets. Take an instant photo of each child's creation. Have the children tell you about his/her creation.

3. **Caterpillar Count:** Program a section from an egg carton with numbers and provide tiny game pieces for counting the appropriate amount of pieces in each section (always account for the pieces at clean-up time).

4. **Butterfly Wing Puzzles:** Create pairs of wings with matching patterns of shapes for the students to practice their visual discrimination skills.

5. **Marvelous Metamorphosis:** Provide a paper plate with lines dividing it into 4 sections connecting them together in a sequence. Have the students place the items representing the different stages of the life cycle in sequential order.
   
   a. raw navy bean (egg stage)
   b. plastic packing foam (caterpillar)
   c. uncooked rigatoni noodle (chrysalis)
   d. bright colored butterfly shape
Evaluation Tools/Opportunities:

Process:

1. Monitor and observe the children at work and play in their centers.
2. Keep anecdotal records of comments and photos of students' work.
3. Science Journals - Have students keep journals during the time of the lesson, where they record procedures and results of their investigations, observations, hypotheses, and inferences about the science phenomena. Encourage them to also record questions and thoughts that occur as they work through the activities.
4. Process Skills Assessment - Make a checklist listing the science process skills of observing, classifying, communicating, inferring, experimenting, hypothesizing, predicting and interpreting data. Use it to note each time a student uses that particular skill.

Products:

1. Products made at Learning Centers (butterfly puppets, plates, etc.)

Other Internet Sites of Interest Related to this Topic:

Shetland Wildlife Pages - Butterflies
http://www.zetnet.co.uk/sigs/insects/butfly94.html

Life Cycle
http://www.bassilichi.it/lorenzi/butterfly/glife.htm
REFERENCES


Simplicio, J. S. C. (1999). A more innovative classroom can be as easy as one, two, three. Education, 1(120), 183-187.


