



Workshop Leader's Guide

Week Seven Workshop

Technology Implementation Plan

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Using the Internet Effectively in the K12 Classroom



Trainer's Checklist



Training Responsibilities

As a Mentor Teacher in the Alliance+ Project your responsibilities include:

1. Registering and updating your own contact information in the DataFeed System 2.0
2. Registering your course schedule in the DataFeed System 2.0 and keeping it current
3. Having your Mentee Teachers register with the DataFeed System 2.0
4. Administering and collecting Baseline and Post Surveys as well as any other evaluation data that is requested
5. Preparing for each workshop prior to the event. This includes reading the Trainer's Overview and preparing your Presentation Aides.
6. Monitoring the trainer's listserv for important updates and changes
7. Attending all local training meetings

Training Rundown

Be sure to address the following prior to the first workshop:

- 1. You will need access to a computer training lab with the following:**
 - One computer for each participant with high speed Internet access.
 - Internet Explorer (3.0 or greater) or Netscape Navigator (3.0 or greater) Software.
 - PowerPoint Software (if you do not want to use online PowerPoint slides).
 - Presentation Computer connected to projection device.
- 2. Be sure to complete the following:**
 - Spend at least **1 hour** prior to the first day of the workshop reviewing the Agenda and the Trainer's Overview.
 - Review the Web-based content for this workshop, including the Musical Plates Project, Case Study Guided Exploration, Technology Implementation Plan Online Development Guide, and the Technology Implementation Plan Workbook.
 - Arrive at computer lab at least **30 minutes** prior to the workshop and prepare the presentation computer with the Week Seven PowerPoint slides.
- 3. You should make sure you have the following materials:**
 - Workshop Leader's Guide
 - Sign-in sheet

**New to
Week 7**

Contact Your Local Project Coordinator If You Need Assistance

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Trainer's Benchmarks

Overall Workshop Objectives

As a result of this three-hour hands-on workshop, participants will be able to:

1. Explain what a Technology Implementation Plan is and why it is important to develop one.
2. Identify technology issues that they will need to deal with when they implement the project they have selected.
3. Identify a strategy they can use to address the technology issues they may have when they implement the project they have selected.

Getting Started

Introduction & Workshop Overview

After completing this portion of the workshop, the participants should be able to:

1. Explain what will be covered in this workshop.

Solutions for the Tech Deficient Classroom

Implementation Challenges

After completing this portion of the workshop, the participants should be able to:

1. Identify some of the technology challenges they will face when they implement their project.

Overview of Musical Plates Project

After completing this portion of the workshop, the participants should be able to:

1. Briefly summarize the project's Real-Time data activities and extension activities.
2. Use the project as a basis for discussing a variety of implementation scenarios.

Activity 1: Tech Deficient Classroom Scenarios

After completing this portion of the workshop, the participants should be able to:

1. Explain how the Musical Plates Project could be implemented given one specific classroom technology challenge.
2. Recognize that a number of different classroom management techniques could be used to successfully implement the project even with less than ideal technology resources.

Activity 2: Case Studies

After completing this portion of the workshop, the participants should be able to:

1. Explain how the Musical Plates project could be implemented using one or more different classroom management strategies.
2. Identify some of the challenges that other teachers faced when using the Musical Plates project, and the solutions they came up with.
3. Describe their individual classroom technology deficiencies and the challenges they may face when implementing their selected Internet-based project.

Technology Implementation Plan

Introduction to Technology Implementation Plans

After completing this portion of the workshop, the participants should be able to:

1. Explain what is meant by a Technology Implementation Plan.
2. Explain why it is necessary to develop a customized Technology Implementation Plan.
3. Explain how Technology Implementation Plans can help identify and deal with implementation challenges and weaknesses in Internet-based projects.
4. Explain how to use the Technology Implementation Plan Online Development Guide and the accompanying Technology Implementation Plan Workbook (Handout 3).

Activity 3: Technology Implementation Plan

After completing this portion of the workshop, the participants should be able to:

1. Identify the technology-related implementation challenges that they may face and how they will deal with them.

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Week Seven Workshop **Agenda** *Technology Implementation Plan*

	TIME (min.)
Getting Started	
Introduction & Workshop Overview - <i>Slides</i>	10
Solutions for the Tech Deficient Classroom	
Implementation Challenges - <i>Slides</i>	5
Overview of Musical Plates Project - <i>Web</i>	15
Activity 1: Tech Deficient Classroom Scenarios	
- <i>Small Group Discussions</i>	35
Activity 2: Case Studies - <i>Guided Exploration</i>	25
BREAK	10
Technology Implementation Plan	
Introduction to Technology Implementation Plans	
- <i>Slides/Web/Workbook</i>	20
Activity 3: Technology Implementation Plan	
- <i>Web/Workbook</i>	45
Week Seven Workshop Evaluation	5
Week Seven Reinforcement Activity	10

Savvy Cyber Teacher® Workshop Training Web Page
<http://www.k12science.org/cyberteacher>

Backup* Workshop Training Web Page
<http://www.k12science2.org/cyberteacher>

* Only use the backup web site if the primary site is unavailable or experiencing technical problems.

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Week Seven Trainer's Overview **Technology Implementation Plan**

Getting Started

Introduction & Workshop Overview (10 minutes)

During the first half of the course, the participants were exposed to a significant number of new and exciting Internet-based projects and resources. Hopefully through this exposure, they have come to realize that the Internet can open up the doors of their classrooms to the entire world, thereby letting all of the exciting opportunities it holds pour in. They have seen that in the age of information, students no longer just dream of far away places but actually communicate with people living in these places. They no longer just read about famous scientists but get to ask questions and interact with them. They no longer just perform classroom experiments but get to participate in real-world studies virtually side-by-side with the scientists themselves! All of these wonderful "unique and compelling" learning experiences are possible provided that one condition is met: The projects must be implemented once the participants return to the classroom.

The ultimate goal of the Alliance+ Project is to bring to students the amazing educational opportunities that the Internet has to offer. Simply exposing the participants to volumes of fantastic resources on the Internet does not automatically mean that this goal will be met. Implementing Internet-based projects brings with it many challenges, both technical as well as instructional. In order to realize the ultimate goal of the project it is important that time be dedicated to addressing these challenges so that participants are prepared to deal with them when they return to the classroom.

This workshop, and in fact the rest of the course, will be dedicated to dealing with the challenges of implementing Internet-based projects and how these challenges can be overcome. At the center of this work will be the Stevens developed concept of Project Implementation Plans. One piece of the Project Implementation Plan, and the one that perhaps presents the most hurdles to teachers, is the technology resources component. Teachers are often faced with the prospect of implementing an Internet-based project in a classroom that is, in some way, technology deficient. There may be only a few computers in the classroom. Teachers may only have access to a computer lab once a week. Some teachers may only have one Internet-capable computer in their entire

building. In this workshop, participants will have the opportunity to address their own classroom technologies deficiencies by developing a Technology Implementation Plan. Having a Technology Implementation Plan will provide the participants with a tool to identify the implementation challenges related to technology that are unique to their classroom. Once these challenges are identified, solutions can be found, thus ensuring that the participants will leave with a customized implementation plan for the Internet-based project they have selected that will meet their needs and the specific needs of their classroom.

Finally, it is important to understand that the development of a full Technology Implementation Plan can take a considerable amount of time, especially if one is working on a complex project. Due to time constraints, the goal in the Savvy Cyber Teacher[®] course is to have participants begin the Technology Implementation Plan development process. Throughout this workshop and the one that follows, the participants will be asked to select an implementation technique that works best for them given their classroom needs and available technology resources. Participants will provide an outline for their plan and identify potential solutions to anticipated problems and challenges. They will then be given the chance to review and collect resources that will allow them to finalize their solutions once they return to their schools.

To assist the participants in this initial work, Stevens has developed an Online Development Guide and corresponding Workbook that will be used throughout the next two workshops. You should be sure to review the entire Online Development Guide and Workbook prior to this workshop so that you have an in-depth understanding of what these resources have to offer. They are linked off the Week Seven Workshop Training page.

With the PowerPoint Slide (#2) displayed, you will begin by reviewing the Week Six Reinforcement Activity and answering questions from the previous workshop. Then you will go over the agenda using the next PowerPoint slide (#3), keeping in mind the background information above. As you review the agenda, be sure to stress the preliminary nature of the work they will engage in and the goals for this workshop.

Slides 2 - 3

Solutions for the Tech Deficient Classroom

Implementation Challenges (5 minutes)

Using PowerPoint Slide (#4), you will start with a brief overview of implementation challenges. The goal is to get participants to recognize some of the common challenges they will face when they return to their classrooms to implement their projects. As you go over these challenges, keep in mind that some participants may get discouraged by hearing about the problems that can sometimes develop. Because of this, it is important to

Slide 4

emphasize that during this workshop and the ones that follow, they will be given the tools and knowledge needed to successfully implement their projects despite these potential problems.

Try to point out that everyone has a slightly different situation in their classrooms and that this means they will all face different challenges. It is for this reason that they will be developing their own Technology Implementation Plans as they will need to customize their plan to meet the specific needs of their classroom and their students.

Next, you should move on to the next PowerPoint Slide (#5) which outlines the first activity that participants will complete. Explain to participants that they will soon break out into cooperative groups to discuss a specific implementation challenge associated with the Musical Plates project. Each group will decide how to best implement the project given the specific technology limitations that are identified for their group and be prepared to share their ideas with the rest of the class.

Slide 5

You will give a brief overview of the Musical Plates project to participants before having them start this discussion activity. The overview is described in the next section.

Overview of Musical Plates Project (15 minutes)

Since the Musical Plates project will be the basis for discussion in cooperative groups in Activity 1, it will be necessary to give participants a short overview of the project. Have participants access the Savvy Cyber Teacher® web site for Week Seven. There is a link on that site for the Musical Plates project. Ask participants to follow along as you walk them through various parts of the project. Participants should not explore on their own; they will have time to further explore this site later if they choose.

Review the information on the home page of the Musical Plates project with participants. It describes what the project is about and what students will accomplish by using the project. Note that the study of the relationship between earthquakes and plate tectonics is typical of many earth science classes. What makes this project different is that it uses real time earthquake data as part of the discovery process.

Next have participants click on “Student Activities” in the left-hand navigation bar. They will see that there are core activities as well as supplementary/enrichment activities. Participants should then click on and read the *Preliminary Activity – Part A* only. This story sets the stage for the project and clearly states the objectives for the remaining activities. When everyone has completed reading the story, you should move on to *Activity 1: Plot Current Earthquake Data*. You can access this activity by clicking on “Next” at the top of the preliminary activity.

Explain to participants that students will access real time earthquake data on a daily basis for two - three weeks and plot the locations of these earthquakes on a map. Have participants look at one of the Earthquake Bulletin sites to see the latest earthquake data (the 2nd site with better maps is preferable.) Make sure that participants understand what each of the columns for the earthquake data show (the 2nd Earthquake Bulletin link has explanations for the column headings.) For example, you might want to point out how to read the date and time of the earthquake and ask participants if the most recent data is at the top or bottom of the list (it differs depending on which bulletin you look at.) Participants can find out more about each particular earthquake by clicking on the link for the earthquake. Point out that students would record the latitude and longitude coordinates for each earthquake and use that information to plot the locations on their maps. At the end of the two - three week period, students will examine their maps and look for patterns, much as real scientists would do with any data they collected. Participants can see an example of a map similar to what students will produce by clicking on the link *Last 30 days of Earthquake Activity* which is found below the list of near real time earthquake data in the 2nd Earthquake Bulletin site. Students will use different earthquake data but the maps will probably look very similar.

It is not necessary to go into a lot of detail for the remaining activities. However, have participants click again on “Student Activities” in the left-hand navigation bar so they can see the titles for each of the activities. You can explain that the remaining core activities have questions related to the maps students will construct as well as questions related to plate movement and volcanic activities. All of the remaining activities have links to appropriate information as part of the activity. Finally, you should briefly explain that there are enrichment activities that involve language arts and social studies. Student will compose “letters to the president” documenting what they have learned about earthquakes. They will also read eye-witness accounts from people who have experienced earthquakes and create a final project that demonstrates their understanding of the major concepts of the project.

Any time remaining in this part of the workshop can be used to allow participants to continue exploring the Musical Plates project. By the end of this short overview of the Musical Plates project, participants should have enough understanding of the project to begin a discussion about how it might be implemented given certain technology restrictions.

Activity 1: Tech Deficient Classroom Scenarios (35 minutes)

This discussion activity will provide participants with the opportunity to examine different “typical” classroom technology environments and the techniques that can be employed to facilitate the implementation of unique and compelling projects. It begins by having the class break into cooperative groups and having

each group discuss a scenario that would place them in different classroom technology environments. The scenarios are:

1. A small “pod” of five Internet computers in the back of the classroom
2. Internet capable computer on mobile cart with a projection system available once a week
3. Access to a computer lab with Internet access once a week
4. No Internet access at school but access through a home computer
5. One Internet computer in the classroom set up in a large walk-in closet

Each group will be given a different scenario and asked to answer several questions related to implementing the *Musical Plates* project, which is the example project given in the scenarios. Group members will be assigned cooperative group roles and asked to present their answers to the rest of the class at the conclusion of the activity.

The scenarios are designed to demonstrate how different types of instructional techniques or methods can be employed when faced with limited technology access. It is hoped that some of the groups will touch upon these techniques in their answers. There is not necessarily any right or wrong answers for the scenarios but the following techniques could be used for the above, corresponding scenarios:

1. Cooperative Group Learning
2. Interactive Teacher Presentations
3. Effective Use of Computer Labs
4. Saving Online Materials and Using in Offline Environment
5. Learning Centers

The scenarios above were chosen because they reflect typical technology-deficient arrangements that teachers are faced with. In Activity 2 of this workshop, participants will have the opportunity to examine case studies of teachers using the *Musical Plates* project under each of the different scenarios, along with the corresponding instructional technique, in order to learn how other teachers have successfully implemented an Internet-based project with limited technology access. Additionally, in Activity 3 of this workshop, participants will be asked to select one of the instructional techniques to use in the Internet project that they have decided to implement in their own classrooms, and to begin the development a technology implementation plan.

To start this activity, have participants take out **Handout 1: Cooperative Group Activity Instructions** and review the roles and instructions for this activity. All participants should break out into their assigned cooperative groups and use the online *E-Hat* program to obtain their roles and responsibilities for this activity. Once the roles have been established,

Handout 1

participants should arrange themselves so that group members can easily talk with each other. It is not necessary to be near a computer for these discussions.

At this point, you will assign one of the five discussion scenarios located in **Handout 2: Discussion Scenarios** to each group. Each group should receive a different scenario. *Please note that participants do **NOT** have copies of these scenarios in their Handbooks.* You can therefore distribute and then collect the scenarios located in the Appendix of this Workshop Leader's Guide when the activity is completed or, alternatively, make additional copies prior to the workshop. Additionally, it is OK if there are fewer than five groups; use only as many scenarios as necessary.

Handout 2

IMPORTANT: When distributing the scenarios, only **ONE COPY** of each should be provided to each group and it should be given to the **Reader**. This use of one handout per group is different from the way cooperative group activities were handled in previous workshops. The **Reader** should read the scenario aloud while others in the group follow along. Group members should discuss the questions on each of the scenarios and prepare answers to the questions to share with the rest of the class. The **Recorder** should record the group's answers.

At approximately 10 minutes before the end of this activity, you should ask **Reporters** from at least two groups to share their solutions for the *Tech Deficient Classroom* with the rest of the class. Finally, **ALL Reporters**, regardless of whether they were called upon to share their answers or not, should e-mail a copy of their answers to you sometime before the next workshop.

As the groups present their answers, you should encourage other participants to question and comment. Point out that there could be a variety of solutions for each scenario; there is not just one correct answer. If appropriate, point out alternative solutions for each scenario, particularly the techniques that correspond to each scenario (as shown on the previous pages). Time permitting, ask if there were any challenges that teachers face that weren't addressed in the discussion scenarios.

Activity 2: Case Studies (25 minutes)

Participants should return to their computer stations and access the Savvy Cyber Teacher® Week Seven workshop training web page. Explain that they will now examine some case studies of teachers who have used the Musical Plates project in a variety of classroom arrangements. Each of the case studies provides a detailed description of how the project could be implemented given certain technology limitations and outlines the planning that needs to be done.

Have participants select the *Case Study Guided Exploration* linked off the Week Seven workshop training web page. Once they have accessed the opening

page, have participants click on the forward arrow at the bottom of the screen to advance to the next web page. This next web page, the Introduction, explains what the case studies are based on. Make sure to go over each of the points in the introduction while the participants read along. By clicking on the forward arrow again at the bottom of the screen, participants will come to a web page that lists all of the case studies. The five (5) case studies correspond to the discussion scenarios of the previous activity.

Make sure that participants do not continue to surf through this guided exploration until you have completed giving instructions for reviewing the case studies in this activity. Note: if a participant holds the mouse over the forward arrow at the bottom of this page, a “STOP” sign will appear.

Point out to participants that the case studies may not exactly reflect their own classroom arrangements but that they are typical of what many teachers face. The case studies are meant to present new ideas for implementing projects under a wide range of constraints. Increasingly, high schools are adopting new schedule models and encouraging teachers to work together on multidisciplinary projects, so examples are included in the case studies that reflect these types of scenarios, as well as more traditional ones.

Participants should review at least two case studies; one corresponding to the discussion scenario they were previously assigned and another of their choosing. Tell them that there will be a short discussion at the conclusion of the activity based on the questions listed in the “Review” section of the Guided Exploration. Participants can also find these review questions in their Participant Handbook on p. 7-15.

At this point, participants should begin exploring the case studies on their own. Halfway through this activity, note the time to participants and urge them to look at a second case study if they have not already done so. After they have looked at two case studies, they should look at and think about the review questions linked in the last part of the Guided Exploration. If time permits, they may review additional case studies. Five minutes prior to the end of this activity, go over the review questions at the end of the Guided Exploration. Ask for volunteers to share their thoughts about each of the questions. Make sure that participants see the very last page of the Guided Exploration, “Review: Final Thoughts,” which can be accessed by clicking on the forward arrow of the Review Questions web page. The page summarizes key points of the Guided Exploration and describes what their next steps will be.

BREAK *(10 minutes)*

Participants should take a 10-minute break.

Technology Implementation Plan

Introduction to Technology Implementation Plans (20 minutes)

Using PowerPoint Slide #6, start off by explaining that a Technology Implementation Plan is one part of the overall Project Implementation Plan. The Technology Implementation Plan includes strategies for dealing with a technology deficient classroom, and is perhaps the most important part of the Project Implementation Plan.

Slide 6

Each individual teacher needs to develop their own Technology Implementation Plan because each teacher has his or her own unique classroom environment and challenges. Some teachers have many computers in their classrooms, others have none. Some have 30 students, others have 20. Some have gifted and talented students, others have learning disabled students. The list could go on and on, the point being that every classroom in the nation is unique. As a result, the challenges that each teacher will face when they return to implement their project will be unique to their particular classroom environment. Because of this uniqueness, it is impossible for Stevens, or any other organization, to provide each teacher with all of the solutions to their implementation challenges. Instead, what can be provided is a tool that the teachers can use to develop their own customized solutions.

By developing a Technology Implementation Plan, educators will be able to address many of the challenges they encounter when trying to implement an Internet-based project. These challenges include issues related to having only limited access to the Internet (e.g. one-computer classrooms), connectivity problems (e.g. Internet goes down in the middle of a lesson), and Internet safety.

The Online Development Guide for Technology Implementation Plans, which is linked off the Week Seven Workshop Training page, is organized into the same five areas that appeared in the discussion scenarios and case studies. Each of the sections is broken down into sub-sections that contain a review of key concepts, related questions for the participant to consider, frequently asked questions, a link to the relevant case study, a set of online resources that will help them address any challenges or weaknesses associated with the issue, an expert to whom they can send questions, and a link to a copy of the worksheet they will use in Activity #3. There is also a workbook located at the end of this Workshop Leader's Guide that was designed to be used together with the online development guide to help participants prepare their Technology Implementation Plan.

Have participants click the *Online Development Guide* linked off the Week Seven Workshop Training web page. Ask participants to simply watch for a few minutes while you demonstrate how to use the guide. Click on any one of the five areas

and show participants how the guide is organized. Be sure to show them all of the sections that are outlined above, including “Answers to More Project Implementation FAQs”. This particular section has in-depth information, examples and online resources for many of the other project implementation aspects such as instructional management, classroom management, and time management. The area of instructional management deals with elements such as student learning objectives, alignment with the standards and state proficiency testing benchmarks, student assessment, student prerequisite skills and supplemental activities. Classroom management deals with classroom instructional techniques such as cooperative group learning that are ideally suited for “unique and compelling” Internet-based projects as well as for “technology poor” environments. The final area is time management. This becomes particularly important when implementing Collaborative Projects as educators must adhere to strict deadlines. Point out to participants that shortly they will have a large block of time to explore the Online Development Guide on their own.

Next, have participants take out **Handout 3: Technology Implementation Plan Workbook** from their Participant Handbooks. Explain that this workbook will be used in conjunction with the Online Development Guide to help them develop their Technology Implementation Plans. Like the Online Development Guide, the workbook is broken down into the same five (5) areas previously outlined. However, the workbook contains additional information not found in the Online Development Guide. Pick one of the sections of the workbook (e.g. Cooperative Group Learning) and review each of the components of that section so participants know exactly what is available in the workbook.

Handout 3

It will be important to note that the Technology Implementation Plan will be part of the Project Implementation Web Site that the participants will start during the next workshop and complete during Week Nine. The Technology Implementation Plan that participants work on in Week Seven will be summarized and placed on their implementation web page.

Using PowerPoint Slide #7, go over the goals for the next activity in the workshop which is to begin development of their own technology implementation plans. It is important to stress the following issues:

Slide 7

1. Participants should select one of the implementation techniques they have learned about to use for their own project implementation.
2. Given the limited amount of time they have to complete this activity, they should focus on simply identifying potential plans and ideas rather than trying to develop a finalized plan.
3. They should take notes and record their information in the Workbook as this content will be used when they build their implementation web site. They should note outstanding questions or concerns in their workbook.

4. Participants should also bookmark any useful resources that they can later come back to when they are ready to finalize their implementation plan. [Make sure that everyone has their Yahoo![®] Bookmarks accounts open so they can easily bookmark useful resources].

By the end of this section of the workshop, the participants should be able to explain what is meant by a Technology Implementation Plan and why it is necessary to develop a customized plan as opposed to using a general plan developed by Stevens. They should also be able to explain how a Technology Implementation Plan can help to identify and deal with implementation challenges and weaknesses in Internet-based projects.

Activity 3: Technology Implementation Plan *(45 minutes)*

Make sure that participants have the Technology Implementation Plan Workbook open. The participants will use the workbook and online guide to develop their own Technology Implementation Plan for the unique and compelling project they have previously selected. Participants should select **one** of the techniques (or a combination of techniques) listed in the workbook and online guide that they will use to implement the project they have chosen.

It may be difficult for some participants to decide which implementation technique they should use for their project. In that case, it may be necessary for you to help those people select an appropriate methodology. Use their classroom and technology arrangements as a guide for helping to select a specific methodology to use. For example, if they have one computer in their classroom and can get access to a LCD projector, interactive teacher presentations may be a relatively easy way to start. If they don't have access to a projection system, they could consider using cooperative groups, learning stations (with the one computer being designated as one of the stations), or even using the computer to save information to use in an offline environment. The type of project participants select may also influence the type of implementation technique they choose. Collaborative projects generally don't require as much access to the Internet for all members of the class. It is possible to participate in many collaborative projects just by sharing e-mail and data on an intermittent basis. Students or the teacher can be designated to be an e-mail correspondent or data input operator.

Once participants have selected which technique they will use, they should use both the workbook and the online guide to fill out the appropriate worksheet. You should circulate around the room as participants are working on their plans to answer questions and guide their exploration.

Although there is no right or wrong way to fill out the worksheets, participants may be uncertain about how much detail they should include in their plans. If you are unsure of what participants should include or would like to see some examples for the Musical Plates project, sample completed worksheets have

been provided in the **Workshop Leader's Handout: Worksheet Examples** (*NOTE: This handout is ONLY available in the Workshop Leader's Guide*). You may use the handout as a guide to answer participants' questions about what they should include on the worksheets.

**Workshop
Leader's
Handout**

As a minimum, participants should determine which implementation technique they will use for the project they have selected as well as identify and bookmark at least two (2) Internet-based resources they can use to help outline their Technology Implementation Plan. These Internet-based resources should be listed on their implementation worksheet. Any part of the implementation worksheet that is not finished will have to be finished as part of their reinforcement activity.

By the end of this section of the workshop, the participants should be able to identify the technology-related implementation challenges they may encounter and develop strategies how they might effectively deal with them.

Week Seven Workshop Evaluation (5 minutes)

Finally, you should have all of the participants complete the online evaluation form prior to leaving the workshop. As was stated at the beginning of this course, collecting evaluation data is one of your primary responsibilities as a trainer. After the participants depart, you should take a few minutes to check the evaluation feedback by logging onto the DataFeed System 2.0. This too is something you are responsible for doing on a regular basis.

Week Seven Reinforcement Activity (10 minutes)

The reinforcement activity will simply be a continuation of the last workshop activity. Participants should spend additional time reviewing the Online Development Guide and the Technology Implementation Plan Workbook (*Handout 3*) that they began during the workshop. They will need to complete any sections of the Technology Implementation Plan worksheet that they have not yet finished. It is very important for them to complete this work before the next workshop when they will begin to work on their implementation web sites.

Handout 4

The Savvy Cyber Teacher[®]

Using the Internet Effectively in the K12 Classroom

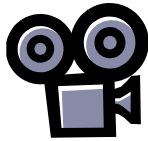


Presentation Aides

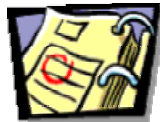
Support Materials for Presenting
The Savvy Cyber Teacher[®] Course
High School Level



Trainer's Information



Display



Locate



Distribute



Instructor's
Notes



Lead-
In

Getting Started

Introduction & Workshop Overview

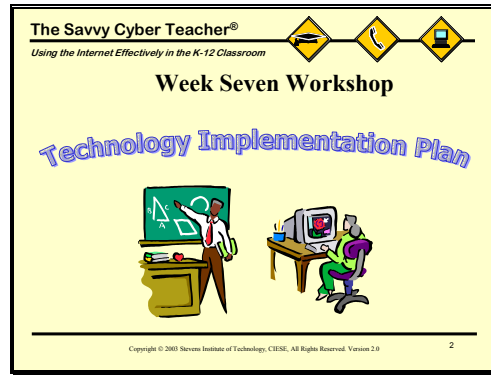


Target Time: 5 Minutes

Prep Reminder: Read Trainer's Overview, pages G 7-6 – G 7-7
This page corresponds to **PAGE 7-6** in the Participant Handbook



DISPLAY
Slide #2:
Technology
Implementation
Plan



INSTRUCTOR'S NOTES

1. Welcome Teachers To Their Seventh Workshop.
2. Note That This Workshop Will Mark The Start Of A New Topic, Technology Implementation Plans.
3. Ask If There Are Any Questions From The Previous Workshop.
4. Review The Reinforcement Activity From The Week Six Workshop.



LEAD-IN...

Let's Move On And Review The Agenda For Today...

Getting Started

Introduction & Workshop Overview



Target Time: 5 Minutes

Prep Reminder: Read Trainer's Overview, pages G 7-6 – G 7-7

This page corresponds to PAGE 7-7 in the Participant Handbook



DISPLAY
Slide #3:
Week Seven
Workshop Agenda

The Savvy Cyber Teacher®
Using the Internet Effectively in the K-12 Classroom

Week Seven Workshop Agenda

- Solutions for the Tech Deficient Classroom
- Technology Implementation Plan
- Week Seven Evaluation
- Week Seven Reinforcement Activity

GOAL: Begin the Development of a Technology Implementation Plan

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INSTRUCTOR'S NOTES

1. Ask Participants To Locate The Week Seven Workshop Agenda Found On **Page 7-2** Of The Participant Handbook.
2. Review The Week Seven Workshop Agenda Using PowerPoint Slide #3.
3. Stress That This Workshop Will Provide Strategies For Implementing Internet-based Projects in Technology-Deficient Classrooms.
4. Review The Goals For This Workshop. Primary Goal Is To Begin The Development Of A Technology Implementation Plan.



LEAD-IN...

Let's Start Off By Looking at Some Common Implementation Challenges Related to Technology...

Solutions for the Tech Deficient Classroom Implementation Challenges

Target Time: 3 Minutes

Prep Reminder: Read Trainer's Overview, pages G 7-7 – G 7-8
This page corresponds to **PAGE 7-8** in the Participant Handbook



DISPLAY
Slide #4:
Implementation Challenges in the Tech Deficient Classroom

The Savvy Cyber Teacher®
Using the Internet Effectively in the K-12 Classroom

Implementation Challenges in the Tech Deficient Classroom

- No Internet Access in the Classroom
- Internet Access Unreliable
- What to Do with One Computer?
- Limited Access to the School Computer Lab
- How To Best Make Use Of A Small Pod of Computers
- Laptop Computer and Projector Available Intermittently

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INSTRUCTOR'S NOTES

1. The Goal Is To Get The Participants To Recognize Some Of The Common Technology Challenges They Will Face.
2. Point Out That Everyone Has A Slightly Different Situation In Their Classrooms And That This Means They Will All Face Different Challenges.



LEAD-IN...

Next, We'll Be Examining Some Typical Tech Deficient Classroom Scenarios...

Solutions for the Tech Deficient Classroom Implementation Challenges



Target Time: 2 Minutes

Prep Reminder: Read Trainer's Overview, page G 7-8

This page corresponds to **PAGE 7-9** in the Participant Handbook



DISPLAY
Slide #5:
Tech Deficient
Classroom
Scenarios

The Savvy Cyber Teacher®
Using the Internet Effectively in the K-12 Classroom

Tech Deficient Classroom Scenarios
Discussion

- Based on “Musical Plates” Real-Time Data Project
- Working in Small Cooperative Groups, Review and Discuss Tech Deficient Classroom Scenarios
- Be Prepared to Report Your Ideas to the Rest of the Class

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INSTRUCTOR'S NOTES

1. Explain That Participants Will Soon Break Into Groups To Discuss A Specific Implementation Challenge Based on the Musical Plates Project.
2. Each Group Will Decide How To Best Implement The Project Given The Specific Technology Limitations Of The Classroom.
3. Participants Will Work In Cooperative Groups And Be Prepared to Report Their Solutions To The Rest Of The Class.



LEAD-IN...

Let's First Take A Look At The Musical Plates Project...

Solutions for the Tech Deficient Classroom

Overview of Musical Plates Project

Target Time: 3 Minutes

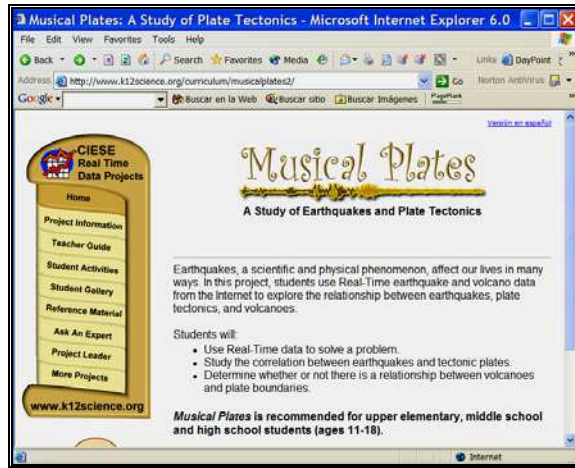
Prep Reminder: Read Trainer's Overview, page G 7-8

This page corresponds to **PAGE 7-10** in the Participant Handbook



DISPLAY

Web Browser: Musical Plates Project



INSTRUCTOR'S NOTES

1. Participants Should Enter The Alliance+ Savvy Cyber Teacher[®] URL:
<http://www.k12science.org/cyberteacher/> And Find The Week Seven High School Web Workshop Training Web Page.
2. Click On The Musical Plates Project Link.
3. **IMPORTANT:** Mention That Participants Should Follow Along & Not Explore On Their Own. They Will Have Time To Revisit This Site Later If They Choose.
4. Give A Brief Overview Of The Purpose Of The Project.



LEAD-IN...

Now We'll Look At Some Of The Activities For The Project...

Solutions for the Tech Deficient Classroom

Overview of Musical Plates Project

Target Time: 7 Minutes

Prep Reminder: Read Trainer's Overview, page G 7-8

This page corresponds to **PAGE 7-11** in the Participant Handbook



DISPLAY Web Browser: *Musical Plates* *Project*



INSTRUCTOR'S NOTES

1. Have Participants Click On Student Activities In The Left-Hand Menu.
2. Participants Should Read The Preliminary Activity - **Part A ONLY**.
3. Next Go To *Activity 1: Plot Current Earthquake Data*.
4. In This Activity, Students Access Real Time Earthquake Data On A Daily Basis For 2-3 Weeks And Plot The Locations Of These Earthquakes On A Map.



LEAD-IN...

Now We'll Look At The Real-Time Earthquake Data That Students Will Access...

Solutions for the Tech Deficient Classroom

Overview of Musical Plates Project

Target Time: 5 Minutes

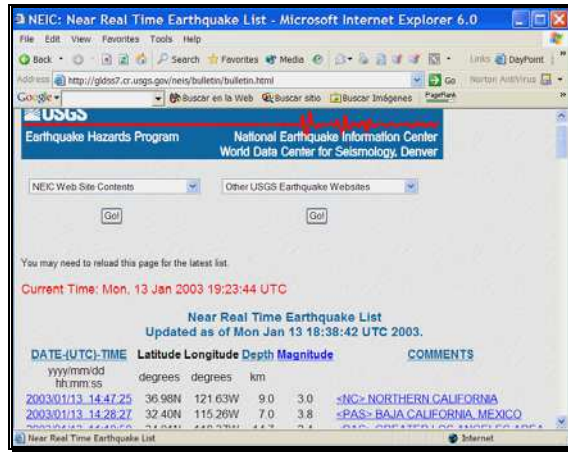
Prep Reminder: Read Trainer's Overview, page G 7-9

This page corresponds to **PAGE 7-12** in the Participant Handbook



DISPLAY

Web Browser: *Musical Plates Project*



INSTRUCTOR'S NOTES

1. Have Participants Click On The 2nd USGS Earthquake Bulletin Link In Step 1 In Order To Review The Real Time Earthquake Data.
2. Note When And Where The Most Recent Earthquake Occurred.
3. Explain What Each Of The Columns Represent.
4. Have Participants Click On *Last 30 Days Of Earthquake Activity* Link.
Student-Created Maps Will Be Similar To This.
5. End By Showing Remaining List Of Student Activities And Enrichment Activities.



LEAD-IN...

Now We'll Look At The Cooperative Group Activity...

Solutions for the Tech Deficient Classroom

Activity 1: Tech Deficient Classroom Scenarios

Target Time: 5 Minutes


Prep Reminder: Read Trainer's Overview, page G 7-10

This page corresponds to **PAGE 7-13** in the Participant Handbook



LOCATE **Handout 1:** **Cooperative** **Group Activity** **Instructions**

The Savvy Cyber Teacher®
Using the Internet Effectively in the K12 Classroom



Handout 1: Cooperative Group Activity Instructions

Activity 1: Tech Deficient Classroom Scenarios

1. Assemble into your cooperative groups and using the *E-Hat* computer program, obtain your role assignments for this activity. You may receive one or more of these roles depending on your group size. The roles include:

- **Group Facilitator** – Responsible for ensuring that all questions on the assigned discussion scenario are discussed and that everyone shares their thoughts about the scenario.
- **Reader** – Responsible for getting the assigned discussion scenario from the workshop leader and reading it aloud to other group members.
- **Recorder** – Responsible for taking notes of the group's discussion and preparing a written answer for each of the questions on the assigned discussion scenario.
- **Reporter** – Responsible for sharing the groups' answers to the discussion scenario questions with the rest of the class and sending a written email



INSTRUCTOR'S NOTES

1. After Reviewing The Cooperative Group Activity Roles And Instructions, Participants Should Use The *E-Hat* Program To Obtain Their Role Assignments.
2. Group Members Should Arrange Themselves So They Can Easily Talk With Each Other. It Is Not Necessary To Be Near A Computer For This Activity.



LEAD-IN...

Here Are The Scenarios That Each Group Will Discuss...

Solutions for the Tech Deficient Classroom

Activity 1: Tech Deficient Classroom Scenarios

Target Time: **30 Minutes**



Prep Reminder: Read Trainer's Overview, page G 7-11

This page corresponds to **PAGE 7-14** in the Participant Handbook



DISTRIBUTE
Handout 2:
Discussion
Scenarios
In WLG ONLY

High School Level

 **Scenario #1** 

After winning the lottery last year and retiring from teaching, you have spent the past 12 months sailing the Caribbean, lying on white sand beaches and soaking up the sun. Just as you begin to let the last memories of your classroom days fade away, your satellite phone starts to ring. Thinking it might be your financial advisor with another hot stock pick, you quickly pick up the phone. To your surprise it is your best friend and fellow teacher, Ms. Smith, who informs you that she has to take a leave of absence and was hoping you could fill in for her over the next few weeks. She tells you that all you have to do is run a simple Internet-based project on earthquakes while she is away. Thinking it would be nice to see your students again, you quickly agree and book your private jet to fly you back home.

You arrive the next day in Ms. Smith's classroom to find the following note:

Hello! Thanks again for helping me out by covering my class. I don't have much time but I wanted to leave you a few details about the class you will be covering and the project you need to implement. I'm sure you will do a great job!



INSTRUCTOR'S NOTES

1. Assign One Of The Five Discussion Scenarios To Each Group And Give One Copy Of The Scenario To The "Reader" In Each Group.
2. The Reader Should Read The Scenario To Others In The Group And All Should Discuss The Questions On The Scenario.
3. Ten Minutes Before The End Of This Activity, Select "Reporters" From At Least Two Groups To Share Their Group's Solutions.
4. Point Out Alternative Solutions For Each Scenario, If Necessary.



LEAD-IN...

Let's Return To The Computer Now...

Solutions for the Tech Deficient Classroom

Activity 2: Case Studies

Target Time: **25 Minutes**

Prep Reminder: Read Trainer's Overview, pages G 7-11 – G 7-12

This page corresponds to **PAGE 7-15** in the Participant Handbook



DISPLAY
Web Browser:
Case Studies
Guided
Exploration



INSTRUCTOR'S NOTES

1. Participants Should Select The Case Studies Guided Exploration Link From The Week Seven High School Workshop Web Page.
2. Guide Participants Through The Introduction Page So They Understand What The Case Studies Represent.
3. Have Participants Stop At The List Of The Five Case Studies Available To Explore In Order To Give Them Full Instructions For The Activity.
4. Participants Should Review At Least Two Case Studies; One Corresponding To The Scenario They Were Assigned And Another Of Their Choosing.
5. At The Conclusion Of This Activity, Go Over Review Questions.



LEAD-IN...

Take A 10 Minute Break. Please Be Back By _____

Technology Implementation Plan

Introduction to Technology Implementation Plans



Target Page Time: **2 Minutes**

Prep Reminder: Read Trainer's Overview, page G 7-13

This page corresponds to **PAGE 7-16** in the Participant Handbook



Display
Slide #6:
Technology
Implementation
Plan

The Savvy Cyber Teacher®
Using the Internet Effectively in the K-12 Classroom

Technology Implementation Plan

- Part of Overall Project Implementation Plan
- Techniques Available to Help with Implementation in “Technology Poor” Environments
- Develop a Strategy to Implement Your Project with Limited Internet Access
- Need to Develop an Individual, Customized Plan to Meet Unique Needs

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6



INSTRUCTOR'S NOTES

1. Strategies For Dealing With The Tech Deficient Classroom Are Perhaps The Most Important Part Of The Project Implementation Plan.
2. Each Teacher Has Their Own Unique Classroom Environment And Challenges.
3. Technology Implementation Plans Provide Teachers With A Tool To Develop Their Own Customized Solutions To Help Insure Successful Implementation.



LEAD-IN...

Let's Move On To Review the Online Development Guide...

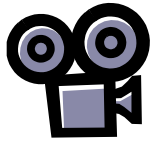
Technology Implementation Plan

Introduction to Technology Implementation Plans

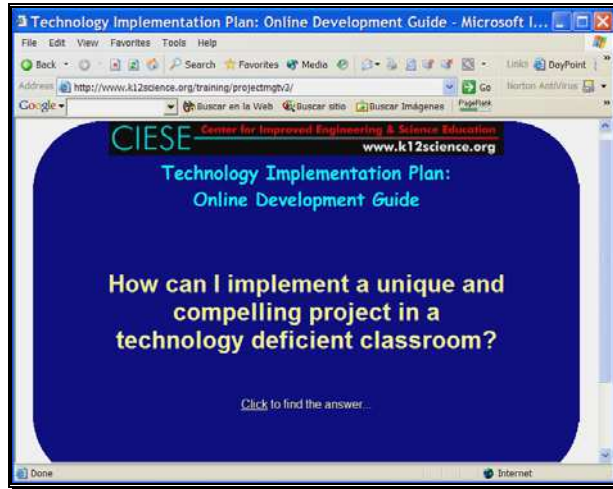
Target Time: 2 Minutes

Prep Reminder: Read Trainer's Overview, page G 7-13

This page corresponds to **PAGE 7-17** in the Participant Handbook



DISPLAY
Web Browser:
*Technology
Implementation
Plan: Online
Development
Guide*



INSTRUCTOR'S NOTES

1. Ask Participants To Simply Watch For A Few Minutes While You Demonstrate How To Use The Online Development Guide.
2. Once You Are Done, They Will Have A Large Block Of Time To Explore It On Their Own.
3. Point Out That The Guide Is Broken Down Into The Same Five (5) Areas Previously Outlined In The Case Studies.



LEAD-IN...

Let's Take A Look At One Section Of The Online Guide...

Technology Implementation Plan

Introduction to Technology Implementation Plans

Target Time: 8 Minutes

Prep Reminder: Read Trainer's Overview, page G 7-14

This page corresponds to **PAGE 7-18** in the Participant Handbook



DISPLAY
Web Browser:
Technology
Implementation
Plan: Online
Development
Guide



INSTRUCTOR'S NOTES

1. Point Out The Different Sections That Make Up Each Area Of The Online Development Guide.
2. Demonstrate The In-Depth Information That Can Be Found By Clicking On The Link "Answers To More Frequently Asked Questions."
3. Remind Participants To Bookmark Any Useful Resources In The "Additional Resources" Section.
4. Explain That Additional Copies Of The Worksheets Can Be Downloaded From This Site.



LEAD-IN...

Take Out Handout 3: Technology Implementation Plan Workbook

Technology Implementation Plan

Introduction to Technology Implementation Plans



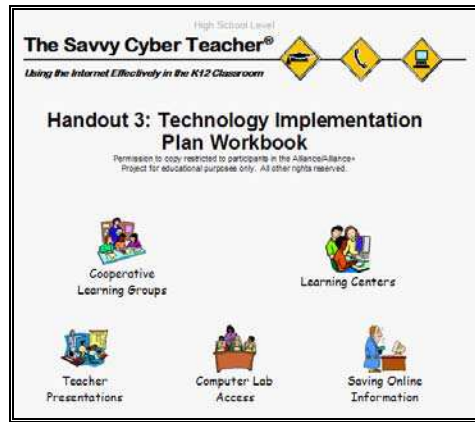
Target Time: 5 Minutes

Prep Reminder: Read Trainer's Overview, page G 7-14

This page corresponds to **PAGE 7-19** in the Participant Handbook



Locate Handout 3: Technology Implementation Plan Workbook



INSTRUCTOR'S NOTES

1. This Workbook Will Be Used In Conjunction With The Online Development Guide To Begin Developing Technology Implementation Plans.
2. Using The Handout, Point Out That The Guide Is Broken Down Into The Five Areas Previously Outlined With Additional Information Provided In Each Of The Areas.
3. Point Out The Different Components Of One Of The Sections In The Workbook.
4. The Information Gathered For This Technology Implementation Plan Will Be Used By Participants On Their Project Implementation Web Sites.



LEAD-IN...

Let's Go Over Your Goals For The Next Activity...

Technology Implementation Plan

Introduction to the Technology Implementation Plan

Target Time: 3 Minutes



Prep Reminder: Read Trainer's Overview, pages G 7-14 – G 7-15

This page corresponds to **PAGE 7-20** in the Participant Handbook



DISPLAY
Slide #7:
Technology
Implementation
Plan GOALS

The Savvy Cyber Teacher®
Using the Internet Effectively in the K-12 Classroom

Technology Implementation Plan GOALS

- Determine which Implementation Technique You Will Use for Your Project
- Focus on Identifying Potential Plans, Ideas or Solutions
- Note Outstanding Questions or Concerns on Your Worksheet
- Bookmark at Least Two Useful Resources and Note Web Addresses on Your Worksheet

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INSTRUCTOR'S NOTES

1. Make Sure That Before Participants Begin Working On Their Technology Implementation Plan, You Review The Goals For This Activity.
2. Participants Will Begin The Development Of Their Technology Implementation Plans By Filling Out The Appropriate Worksheet Located In The Workbook.
3. Participants Use Both The Workbook And Online Development Guide To Help Develop Their Plans.
4. Remind Participants To Bookmark And Make Note Of At Least Two (2) Online Resources That They Find Useful.



LEAD-IN...

Locate Worksheets In Handout 3: Technology Implementation Plan Workbook...

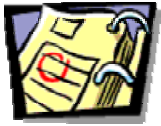
Technology Implementation Plan

Activity 3: Technology Implementation Plan

Target Time: **45 Minutes**

Prep Reminder: Read Trainer's Overview, page G 7-15

This page corresponds to **PAGE 7-21** in the Participant Handbook



LOCATE Handout #3: *Technology Implementation Plan Worksheets*

Cooperative Learning Group Worksheet

Project:

Activities that Will Use Cooperative Groups:

Roles for Cooperative Group Members:



INSTRUCTOR'S NOTES

1. Participants Should Select One Of The Techniques Listed And Fill Out The Appropriate Worksheet.
2. You Should Circulate Around The Room As They Are Completing Their Work So That You Can Answer Questions And Guide Their Exploration.
3. Examples of Filled-Out Worksheets Can Be Found In This Workshop Leader's Guide If Any Participant Is Unclear About What Is Expected.
4. When Done, Have Participants Complete The Evaluation Form.



LEAD-IN...

Please Fill Out The Week Seven Workshop Evaluation Form...

Week Seven Reinforcement Activity

Target Time: 10 Minutes

Prep Reminder: Read Trainer's Overview, page G 7-16


This page corresponds to **PAGE 7-22** in the Participant Handbook



LOCATE **Handout 4:** **Week Seven** **Reinforcement** **Activity**

The Savvy Cyber Teacher®
Using the Internet Effectively in the K12 Classroom

Handout 4: Week Seven Reinforcement Activity



Goal: To complete work on your Technology Implementation Plan.

Activity: The reinforcement activity will simply be a continuation of the workshop activities. You should spend additional time reviewing the Online Development Guide for the Technology Implementation Plan that you began during the workshop. You will need to complete any sections of the Technology Implementation Plan worksheet.



INSTRUCTOR'S NOTES

1. **Important:** Make Sure That Everyone Completes The Online Evaluation.
2. For This Week's Reinforcement Activity, Participants Should Complete Their Technology Implementation Plan.



LEAD-IN...

Thank You For Attending Today's Workshop.



Handout 1: Cooperative Group Activity Instructions

Activity 1: Tech Deficient Classroom Scenarios

1. Assemble into your cooperative groups and using the *E-Hat* computer program, obtain your role assignments for this activity. You may receive one or more of these roles depending on your group size. The roles include:
 - **Group Facilitator** – Responsible for ensuring that all questions on the assigned discussion scenario are discussed and that everyone shares their thoughts about the scenario.
 - **Reader** – Responsible for getting the assigned discussion scenario from the workshop leader and reading it aloud to other group members.
 - **Recorder** – Responsible for taking notes of the group's discussion and preparing a written answer for each of the questions on the assigned discussion scenario.
 - **Reporter** – Responsible for sharing the groups' answers to the discussion scenario questions with the rest of the class and sending a written e-mail report to the workshop leader.
 - **Timekeeper** – Responsible for monitoring the time and ensuring that all questions on the assigned discussion scenario are discussed in the allotted time.
2. Arrange your group so that members can easily talk with each other. It is not necessary to be near a computer for these discussions.
3. The workshop leader will assign a specific discussion scenario to each group. It will be given to the Reader.
4. After hearing the scenario, group members should discuss the questions on the scenario and prepare answers to the questions to share with the rest of the class.
5. All Reporters, regardless of whether you were called upon to share your answers or not, should e-mail the workshop leader a copy of your group's answers sometime before the next workshop.

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Handout 2: Discussion Scenarios

Solutions for the Tech Deficient Classroom

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Scenario #1



After winning the lottery last year and retiring from teaching, you have spent the past 12 months sailing the Caribbean, lying on white sand beaches and soaking up the sun. Just as you begin to let the last memories of your classroom days fade away, your satellite phone starts to ring. Thinking it might be your financial advisor with another hot stock pick, you quickly pick up the phone. To your surprise it is your best friend and fellow teacher, Ms. Smith, who informs you that she has to take a leave of absence and was hoping you could fill in for her over the next few weeks. She tells you that all you have to do is run a simple Internet-based project on earthquakes while she is away. Thinking it would be nice to see your students again, you quickly agree and book your private jet to fly you back home.

You arrive the next day in Ms. Smith's classroom to find the following note:

Hello! Thanks again for helping me out by covering my class. I don't have much time but I wanted to leave you a few details about the class you will be covering and the project you need to implement. I'm sure you will do a great job!

- You will be implementing the Musical Plates Internet-based real time data project as part of a larger unit on earthquakes. Students will be engaged in the following work:
 - Plotting and analyzing real-time earthquake data
 - Writing about the effects of earthquakes on people and communities
 - Researching historical earthquakes
 - Designing and building an "earthquake proof" building
- There are five (5) Internet-capable computers with high speed Internet access in a small "pod" in the back of the classroom.
- The Internet connection is great when it is working but it goes "down" frequently.

Questions: How could you arrange the class so that all of the students are purposefully engaged while small groups or individuals are working on the computers? What are some of the challenges you might face and how would you deal with them?

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Scenario #2



After winning the lottery last year and retiring from teaching, you have spent the past 12 months sailing the Caribbean, lying on white sand beaches and soaking up the sun. Just as you begin to let the last memories of your classroom days fade away, your satellite phone starts to ring. Thinking it might be your financial advisor with another hot stock pick, you quickly pick up the phone. To your surprise it is your best friend and fellow teacher, Ms. Smith, who informs you that she has to take a leave of absence and was hoping you could fill in for her over the next few weeks. She tells you that all you have to do is run a simple Internet-based project on earthquakes while she is away. Thinking it would be nice to see your students again, you quickly agree and book your private jet to fly you back home.

You arrive the next day in Ms. Smith's classroom to find the following note:

Hello! Thanks again for helping me out by covering my class. I don't have much time but I wanted to leave you a few details about the class you will be covering and the project you need to implement. I'm sure you will do a great job!

- You will be implementing the Musical Plates Internet-based real time data project as part of a larger unit on earthquakes. Students will be engaged in the following work:
 - Plotting and analyzing real time earthquake data
 - Writing about the effects of earthquakes on people and communities
 - Researching historical earthquakes
 - Designing and building an "earthquake proof" building
- The school has one Internet-capable computer on a cart that you can have brought into the classroom once a week. The computer is connected to a projection system that you can use to present information to the entire class.

Questions: How might you best utilize the projection system that is available to implement the Musical Plates project? What are some of the challenges you might face and how would you deal with them?

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Scenario #3



After winning the lottery last year and retiring from teaching, you have spent the past 12 months sailing the Caribbean, lying on white sand beaches and soaking up the sun. Just as you begin to let the last memories of your classroom days fade away, your satellite phone starts to ring. Thinking it might be your financial advisor with another hot stock pick, you quickly pick up the phone. To your surprise it is your best friend and fellow teacher, Ms. Smith, who informs you that she has to take a leave of absence and was hoping you could fill in for her over the next few weeks. She tells you that all you have to do is run a simple Internet-based project on earthquakes while she is away. Thinking it would be nice to see your students again, you quickly agree and book your private jet to fly you back home.

You arrive the next day in Ms. Smith's classroom to find the following note:

Hello! Thanks again for helping me out by covering my class. I don't have much time but I wanted to leave you a few details about the class you will be covering and the project you need to implement. I'm sure you will do a great job!

- You will be implementing the Musical Plates Internet-based real time data project as part of a larger unit on earthquakes. Students will be engaged in the following work:
 - Plotting and analyzing real time earthquake data
 - Writing about the effects of earthquakes on people and communities
 - Researching historical earthquakes
 - Designing and building an "earthquake proof" building
- There is no Internet access in the classroom but you can get access to a computer lab once a week. The lab has enough Internet-capable computers for each student.

Questions: How could you best use your limited time in the computer lab? For which activities would you dedicate computer lab time? What are some of the challenges you might face and how would you deal with them?

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Scenario #4



After winning the lottery last year and retiring from teaching, you have spent the past 12 months sailing the Caribbean, lying on white sand beaches and soaking up the sun. Just as you begin to let the last memories of your classroom days fade away, your satellite phone starts to ring. Thinking it might be your financial advisor with another hot stock pick, you quickly pick up the phone. To your surprise it is your best friend and fellow teacher, Ms. Smith, who informs you that she has to take a leave of absence and was hoping you could fill in for her over the next few weeks. She tells you that all you have to do is run a simple Internet-based project on earthquakes while she is away. Thinking it would be nice to see your students again, you quickly agree and book your private jet to fly you back home.

You arrive the next day in Ms. Smith's classroom to find the following note:

Hello! Thanks again for helping me out by covering my class. I don't have much time but I wanted to leave you a few details about the class you will be covering and the project you need to implement. I'm sure you will do a great job!

- You will be implementing the Musical Plates Internet-based real time data project as part of a larger unit on earthquakes. Students will be engaged in the following work:
 - Plotting and analyzing real time earthquake data
 - Writing about the effects of earthquakes on people and communities
 - Researching historical earthquakes
 - Designing and building an "earthquake proof" building
- There is no Internet connection in the classroom or school but I understand you have access from your home computer and that you also have a printer.
- There are 3 computers in the classroom (without Internet) and an old overhead projector for use with transparencies.

Questions: How could you best use your home computer and limited classroom technology to implement the Musical Plates project? For which activities would you use the Internet? For which activities would you use the offline computers? What are some of the challenges you might face and how would you deal with them?

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Scenario #5



After winning the lottery last year and retiring from teaching, you have spent the past 12 months sailing the Caribbean, lying on white sand beaches and soaking up the sun. Just as you begin to let the last memories of your classroom days fade away, your satellite phone starts to ring. Thinking it might be your financial advisor with another hot stock pick, you quickly pick up the phone. To your surprise it is your best friend and fellow teacher, Ms. Smith, who informs you that she has to take a leave of absence and was hoping you could fill in for her over the next few weeks. She tells you that all you have to do is run a simple Internet-based project on earthquakes while she is away. Thinking it would be nice to see your students again, you quickly agree and book your private jet to fly you back home.

You arrive the next day in Ms. Smith's classroom to find the following note:

Hello! Thanks again for helping me out by covering my class. I don't have much time but I wanted to leave you a few details about the class you will be covering and the project you need to implement. I'm sure you will do a great job!

- You will be implementing the Musical Plates Internet-based real time data project as part of a larger unit on earthquakes. Students will be engaged in the following work:
 - Plotting and analyzing real time earthquake data
 - Writing about the effects of earthquakes on people and communities
 - Researching historical earthquakes
 - Designing and building an "earthquake proof" building
- There is one Internet-capable computer in the classroom. It is in a large walk-in storage closet that has had the door removed and made into a "computer space". Up to 4 students can squeeze into this space at one time.
- Because of the location of the computer and the layout of your classroom, it is impossible to connect a projection device to the computer.

Questions: How could you arrange the class so that all of the students were purposefully engaged while a small group of students were working on the computer? What are some of the challenges you might face and how would you deal with them?

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The Savvy Cyber Teacher®

Using the Internet Effectively in the K12 Classroom



Handout 3: Technology Implementation Plan Workbook

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Cooperative Learning Groups



Learning Centers



Teacher Presentations



Computer Lab Access



Saving Online Information

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Page Number Note: Each section above has two page numbers associated with it. The first is the section page number, which starts with a "G", for Workshop Leader's Guide copy of the handout. The second is the section page number for the Participant Handbook.



Cooperative Learning Groups



Key Concepts

- Groups work on the same activity but each member has a different role.
 - One member for each group can be assigned use of the computer.
 - Rotating roles within each group allows each student a turn at the computer.
 - Best used when you have several computers in the classroom.
-



Questions to Ask Yourself

As you think about implementing an Internet-based project, consider these questions:

- Can cooperative groups be used for any parts of the project you have selected? If so, which parts?
 - How will the groups be organized?
 - What will be the designated roles for each student?
 - How will the groups be managed?
-

FAQs

Frequently Asked Questions

FAQ #1 What types of roles can I assign?

Below are listed typical roles or job titles used for cooperative groups; these may be modified depending on the size of the group and the nature of the task. The roles describe additional responsibilities students have beyond the normal contributions of group work. For example, the "timekeeper" in a research activity would be expected to conduct research in addition to keeping all group members aware of the time.

Group Facilitator Moderates discussions, keeps the group on task, assures work is done by all, and makes sure all members participate.

Data/Information Collector Accesses computer or other resources for required information.

- Equipment Manager** Sets up and puts away the supplies.
- Timekeeper** Monitors the time and moves the group along so that they complete the task in the available time.
- Recorder** Takes notes of the group's discussion and prepares a written conclusion. This person may also be a "reporter" if the report is given orally.
- Checker** Makes sure that all group members understand the concepts and the group's conclusions.
- Summarizer** Restates the group's conclusions or answers. This person may also assume the role of "reporter."

FAQ #2 How should groups be formed?

Choosing the right groups is important:

- Groups should be teacher-selected not student-selected
- Form groups of 3-5 students and create as much diversity as possible
- Stick with the same groups long enough for members to become comfortable with one another
- Try to create an academically balanced group by selecting members who have expertise in different subject areas
- Try to mix members with different learning styles

FAQ #3 How do I grade cooperative groups?

- Each group member should be accountable for meeting the learning objectives
- Administer individual tests or ask members, sometimes at random, to present the group's work or findings as part of their grade
- It is equally important to grade the group as a whole
 - Grade how well the group works together (a rubric can be helpful in this case)
 - Ask the group to produce one product which is then graded
 - Provide a grade for group presentations



Additional resources for using cooperative groups can be found at:
<http://www.k12science.org/training/projectmgvtv3/coopgroupresources.html>



Cooperative Learning Group Worksheet

Project:
Activities that Will Use Cooperative Groups:
Roles for Cooperative Group Members:
Group Management/Rotation plan:
Student Instructions:

Backup Plan:

Teacher "To Do" List to Prepare for Project:

Internet Resources Used to Help Develop Implementation Plan:

Other:



Teacher Presentations



Key Concepts

- Use to introduce or enrich a unit
 - Take students on a virtual field trip
 - Show short video clips, photos, live cam shots
 - Access real-time data to share with the class
-



Questions to Ask Yourself

As you think about implementing an Internet-based project, consider these questions:

- What section(s) of the project might be good for an interactive teacher presentation?
 - Are there Internet resources or other components of the project that you need to discuss with the entire class?
 - Do you have to show students how to do a particular technical task or how to use a specific Internet resource?
-

FAQs

Frequently Asked Questions

FAQ #1 How can I ensure that the presentation is successful?

- **Keep it Interactive** - It is very important to keep students engaged while you present. You can accomplish this by asking the students questions as you show them the resources or information. Give them choices at various points in the presentation so that they can comment or ask/answer questions about what you are showing. For example, if you are presenting a weather site such as a real-time radar image, you could let your students decide what state you wanted to examine more closely or ask them to make predictions about weather in your area.
- **Show Dynamic Sites and Information** - The more dynamic and unique the site is, the longer the students will be interested. Showing a web site with all text and then reading it aloud will not keep their attention. Showing them real-time data that is changing all the time, such as images

from live WebCams, can be very exciting. A good example might be the live WebCam at the Panama Canal where students can watch ships transit the complex lock system. If you watch closely you can often see the water level fall and rise as ships pass through!

- **Get Students Involved** - It can be useful to have students come up to the front of the room and assist you in your presentation. One student can navigate while you do the presentation. This gives them a chance to get their hands on the computer and also helps you since you don't have to hold the mouse while you are presenting.
- **Provide Worksheets** - Have visuals, such as maps, screen shots, and worksheets, on which students will write information as you go along. For example, if you are showing them a weather site, give them a map of the U.S. and have them fill in weather symbols or temperatures as you progress through the lesson.
- **Use LARGE Fonts** - Make sure that the projected image is clear to everyone in the room. It can be very helpful if you increase the font size that your web browser is using to display text. This will make it possible for all of the students to read the text that is being displayed, even if they are in the back of the room. Use the "Help" menu of your web browser to learn how to increase the font size.
- **Assign a Follow-up Activity** - Provide a follow-up activity or assignment so that students can process what they have observed or learned. For example, you could have them write down 5 new things they learned from the presentation or 5 questions they could ask a classmate about the presentation.

FAQ #2 What types of presentation devices can I use?

Black and White Transparencies

Cost: \$1/transparency

Print out web sites (or e-mail letters) on a printer. Make transparencies of the web sites you're going to use in lesson.

Color Transparencies

Cost: \$250/color printer, \$1/transparency

Buy a low-end color printer and print site information out on transparencies by feeding them through the printer.

TV-ator ("TView")

Cost: \$150-300

Buy a converter called a TV-ator that you can connect to a computer to convert the digital display to NTSC output. Resolution on TV monitor may be only fair. You will probably have to increase the font size of the display so that class can see.

LCD Panel + High End Overhead Projector

Cost: LCD \$1500, Projector \$850

Buy an LCD panel and a high-end overhead projector to show direct computer output on a large screen in front of the class. Good resolution but lights must be off and shades drawn to see adequately.

All-in-One Projector

Cost: \$2500 and up

Buy an LCD projector that allows you to view computer output on a large screen. Excellent resolution and can be used in lit rooms. Also, most are VCR compatible.

White Board

Using a whiteboard as a projection screen allows you to write "on" the projected images.



Additional resources for interactive teacher presentations can be found at:

<http://www.k12science.org/training/projectmgtv3/presentationresources.html>



Teacher Presentation Worksheet

Project:
Activities for Interactive Teacher Presentation:
Roles for Students During Your Presentation:
Resources for Students to Use During Presentation:
Student Instructions:

Backup Plan:

Teacher "To Do" List to Prepare for Project:

Internet Resources Used to Help Develop Implementation Plan:

Other:



Computer Lab Access



Key Concepts

- Plan in advance which activities will be done in lab
 - Target activities that require students to use their own computer
 - Review assignment and expectations with students prior to going to lab
 - Review computer lab policies and/or Acceptable Use policy with students
-



Questions to Ask Yourself

As you think about implementing an Internet-based project, consider these questions:

- What activities will require students to use the Internet?
 - What activities will require the use of computers but not the Internet?
 - How frequently will you need to use computers and/or the Internet?
 - Will each student require access to his or her own computer?
-

FAQs

Frequently Asked Questions

FAQ #1 How can I ensure that time in the computer lab is used effectively?

Teach computer skills through the content area

Whether or not you are working in conjunction with a computer teacher, plan for curriculum integration. The most efficient way to teach skills is not in isolation, but through meaningful integration with subject area content. Link technology to an existing lesson or project. This does require extra planning time for the computer and classroom teacher, but its well worth the effort.

Plan for times when you have slow or no Internet access

One of the advantages of the school computer lab is that it is possible to have a whole class involved in the same Internet activity at the same time. However, sometimes connections slow down when everyone is trying to access the same site at the same instant. It is important to plan lessons that are flexible enough to provide alternate sites and activities should your connection slow down.

Use the projector to teach a whole-class lesson and then give the students directions to complete their assignments independently. Assign groups of students different starting points, so they are not visiting the same sites at the same time.

Use lab when it is critical for each student to be at a computer

There may be times when it is important for students to do individual work on a computer such as doing research, preparing a report or final presentation, or composing and sending e-mail messages. It may be helpful to arrange for a computer lab at these times. Also, there are times when it is important for students to establish "ownership" over a lesson. For example, at the beginning of a new project, it may be helpful to give students an opportunity to explore some of the web material individually to help them better understand the project.

Review computer lab rules and school's AUP

You should review computer lab rules and any school policies regarding computer use at least once before using the computer lab. Ideally, you should review the rules and policies every time prior to using the lab. If possible, have some of the rules printed on posters for display in the computer lab. Students should be focused on completing the assigned work in the computer lab and should not engage in any inappropriate activities while in the lab. Enforcement of your school's rules and policies is critical.

FAQ #2 What if students have different computer skill levels?

Make provisions for students of different computer skill levels

- It will make it easier for everyone, but particularly students with poor keyboarding skills, if you visit the lab in advance and Bookmark (or file under Favorites) the sites you'll be using that day.
 - Use computer-literate student helpers who can circulate within the lab and help other students who are having trouble. You may find that some of your students are "experts" in different phases of Internet use.
 - Pair up two students of different ability levels on one computer.
-



Additional resources for using computer labs can be found at:

<http://www.k12science.org/training/projectmgtv3/computerlabresources.html>



Computer Lab Worksheet

Project:
Activities that Will be Done in the Computer Lab:
Activities that Will be Done in the Classroom:
Other Considerations for Lab (schedule, assistance, etc.):
Student Instructions:

Backup Plan:

Teacher "To Do" List to Prepare for Project:

Internet Resources Used to Help Develop Implementation Plan:

Other:



Saving Online Information



Key Concepts

- Good when technology resources are very limited
 - Important to identify parts of project that use Internet
 - Important to identify parts of project that use computers but not Internet
 - Data and information can be saved on disks or printed
-



Questions to Ask Yourself

As you think about implementing an Internet-based project, consider these questions:

- What technology resources do you have available in your classroom and school?
 - What technology resources do you have available at home?
 - What activities will require the use of the Internet?
 - What activities will require the use of computers but not the Internet?
 - How frequently will you need to use computers and/or the Internet?
 - How will the availability of technology resources impact the implementation of the project you have selected?
-

FAQs

Frequently Asked Questions

FAQ #1 What techniques can I use to save online information to use at another time?

Print Internet Resources

You can print resources from the Internet to make hard copies for the classroom. You can print out web pages, graphics, data, or e-mail letters. Photocopy these printouts or transfer them to an overhead transparency. CAUTION: A web page may be much larger than you think. You can end up with one "page" that prints out to 10 sheets of paper. So when you print, you may want to print a page at a time. Also

remember that just like information from any other source, information from the web may be copyrighted. It is important to observe copyright laws.

Save Internet Resources on a Disk, Hard Drive, or Zip Drive

You can save individual web pages simply by using the "save as" feature on your net browser. You have a choice of saving "text" or "HTML." Selecting "text" allows you to later open the document in a word processor. Depending on the word processor that you use, some or all of the formatting will be retained. If you select "HTML" you get all of the colors and formatting. This saves it as an HTML document which can be opened with a web browser such as Netscape Navigator or Internet Explorer *without being connected to the Internet*.

When you save web pages, the graphics are not automatically saved with the page. You must save each of the images separately. With a PC you do that by placing the mouse arrow over the graphic and pressing the right mouse button. A dialogue box appears. For a MAC, click and hold for a few seconds until the dialogue box appears. You can select the option "Save this image as..." You can now open these documents in the web browser or another appropriate program *without being connected to the Internet*.

Even if you have an Internet connection in the classroom, there are advantages to saving pages to be used with a disk, hard drive or Zip disk:

- Web pages can be accessed much faster from the hard drive than from a distant server.
- You avoid getting a "Server Down" message when you are trying to access a page, since it will always be there on your disk, hard drive or Zip disk. (However it will be the version that you saved, not the latest version available on the web.)
- Students are limited to only the pages that you have saved on the hard drive and can't get into forbidden areas.
- If you save pages or graphics on a disk, you can easily load the files on a number of computers for many students to view (such as in a computer lab).

Use Web Whacker Software or Other Web Collection Utility

Downloading text and graphics of various pages can be tedious. An easier way is to use a web collection utility that collects, organizes, converts, and saves all the information you find on the web. While browsing the page you want to save, simply click on the web saving utility, and it will automatically download the entire page and all of its associated graphics. In addition, you can specify how many levels you want it to download. That is, if you specify this page and one more level, it downloads the specified page and all the pages that are linked to it. Selecting two more levels downloads this page, all pages linked to it, and all pages linked to those pages. CAUTION: You must be very careful about downloading more than one level. Some sites have so many links that there is insufficient time or space on your hard drive to do this. Once you have saved the sites that you want, you can access those sites right from your computer without being connected to the Internet. Web Whacker Software is available for about \$50.

FAQ #2 How can students access previously saved information?

- Use non-Internet computers to display web material offline
- Use overheads or transparencies with web material
- Use printouts of web material



Additional resources for saving online information can be found at:

<http://www.k12science.org/training/projectmgtv3/savinginforesources.html>



Saving Online Information Worksheet

Project:
Activities that Need Internet Access:
Activities that Can be Done Using Computers without Internet Access:
Plans for Saving/Using Online Information:
Student Instructions:

Backup Plan:

Teacher "To Do" List to Prepare for Project:

Internet Resources Used to Help Develop Implementation Plan:

Other:



Learning Centers



Key Concepts

- Can be used to rotate groups of students through different activities
 - Good technique to use when there are a limited number of computers available
 - Each group takes a turn working at a different activity or learning center
 - Groups can rotate through the centers during one class or over a period of time
-



Questions to Ask Yourself

As you think about implementing an Internet-based project, consider these questions:

- Can learning centers be used for any parts of the project you have selected? If so, which parts?
 - What learning centers will be established?
 - How will the groups be rotated through the centers?
-

FAQs

Frequently Asked Questions

FAQ #1 What are some of the issues involved in designing learning centers?

Learning center activities should not be dependent on other activities

One of the most significant changes in instruction that learning centers bring to the classroom is the need for multiple lessons that will be implemented simultaneously at each station. The added challenge here is that students will not work on the lessons in the same order since they will all start at different stations and rotate around. This means that one lesson cannot depend on another since you cannot be sure that a given group has already gone through a prerequisite lesson at a different learning station. When developing learning centers it is always important to keep this issue in mind and to come up with lessons that are not

dependent on one another. For example, if you were developing a set of learning centers for use with the **Stowaway Adventure** you would not want to make one of the stations collecting ship data and another station the analysis of that data. If you did try this you would run into trouble when one of the groups who had yet to collect ship data got to the station at which they needed to do the analysis since they would have no data to analyze (unless groups were using data collected on a previous day).

Need for appropriate rotation plan

Another important aspect of designing your learning centers concerns the length of time students spend at each station. Some approaches have students rotating through all of the stations within one class period of approximately 50 minutes. From a technology perspective this is nice because it allows all of the students time on the computers (provided they are at one of the stations) within the same class period. Especially for younger grades this can be important since often students all want their turn on the computers. The downside to this is that the time spent at each station is very small. With five stations you would have only ten minutes per station. This is hardly enough time to accomplish even a small task. In addition, if a problem is encountered, such as a computer crashing, the time it takes to get back up and running can really throw off your schedule. A better approach is to give each group a full class period at each station. Although this means you will need to develop more extensive lessons for each station, it will greatly enhance the impact that the technique has on the students.

Classroom configuration and group organization

Learning Centers are often best used in mid-size to large classrooms with between 4-6 computers. The size of the classroom is a factor because of the need to reorganize the classroom configuration of desks and chairs. You will want to separate the learning stations enough so that the students can work at them without disturbing others. Often a good configuration is to have centers in each corner of the room and then one or two in the middle. The numbers of computers is important because you need to utilize them as part of one of the stations. If you have groups of five (5) students each and want them each to be able to use a computer then you would need at least 5 computers for your station. Thus, the number of computers usually needs to be the same as the number of students per group if you want to

utilize learning centers. You can double students up on computers but this can diminish the impact of using the technology. Finally, Learning Centers can be especially effective if you need to cover a number of prerequisite skills prior to starting work on a project. Prerequisite skills lend themselves to this classroom management model because each skill is not dependent on the others and thus they make ideal activities for learning stations.

FAQ #2 How can I keep things organized when using learning centers?

By nature, using learning centers requires a more open classroom in which many different activities can be taking place at the same time. If you have not prepared properly, this can easily lead to chaos in the classroom which can interfere with the learning process. Here are a few things you can do to keep things organized while utilizing learning center:

Use activity charts

These are wall charts that display the days of the week and the assignments for each group on any given day. Setting up a chart like this allows the students to quickly determine what they should be doing and which station they should be at when they first come into the classroom. This may seem like a minor point but it can avoid wasting valuable time when students first arrive and need to begin their work. It also conditions students to start their tasks as soon as they arrive. Here is an example Activity Chart:

	Mon	Tues	Wed	Thurs	Fri
Group #1	Car/Ramp Experiment	Research	Practice Data Analysis Sheets	Collecting Internet Data	Whole Class Presentations
Group #2	Collecting Internet Data	Practice Data Analysis Sheets	Research	Car/Ramp Experiment	Whole Class Presentations
Group #3	Practice Data Analysis Sheets	Collecting Internet Data	Car/Ramp Experiment	Research	Whole Class Presentations
Group #4	Research	Car/Ramp Experiment	Collecting Internet Data	Practice Data Analysis Sheets	Whole Class Presentations

Provide detailed student instructions for each station

Student instructions are important to develop since they are often not included with Internet-based projects. When working with Learning Centers the need for student instructions becomes even more important. As we have mentioned, you will not be able to be at each station all of the time so you will need to provide students with detailed instructions on what to do at each station. If you do not include these instructions, or if they are not detailed enough, students will reach a point where they do not know what to do next. They will then have to pause and wait for you to assist them. If you are working with another group at the time, the students will simply waste time just waiting for your assistance. This can easily lead to a lot of chaos as you will lose the students' attention and they may begin to do other things.

Ensure that all students have prerequisite skills

It is critical that all students have the necessary prerequisite skills when using learning centers. Each group must be fairly equal in their ability at each learning center. If not, one group might complete their lesson well ahead of the others and thus have to sit and wait for the others to finish. In addition, you do not want a group to get stuck on something basic and then have to wait for you to come around before they can move on. A good example is with computer skills. If one group is not familiar with how to use a web browser then it might take them twice as long as an experienced group to complete the computer/Internet task. By providing basic Internet training prior to going into the learning centers, you could avoid this problem.

Select group members carefully

This is mostly common sense but should definitely not be overlooked as it is very important. Simply allowing students to self-select their own groups never works well. Try to select students who will work well with each other and who are at about the same academic ability. Once you select groups, do not feel that you cannot change them. If problems arise, try switching group members around.

Establish student behavior rules

No matter what type of classroom structure you have, you will always have to deal with student behavior problems. When using Learning Centers, student behavior problems can more severely interfere with the instructional process than when you are working with the whole class at once. Because of this it is very important that you set up specific rules and policies for the students that clearly spell out what is allowed and what is not allowed. It will then be very important for you to enforce these policies. One useful technique is to not allow students who have violated the policy to work with their groups.

FAQ #3 What guidelines should I follow when using learning centers?

Choose an appropriate rotation plan

- Self-contained class: Groups of students rotate from one station to another (probably 4-5 students to a station) throughout the entire school day or during a portion of the day, such as in the afternoons for 2 or 3 days.
- Departmentalized setting: In a situation where the class has a scheduled science period every day, each of 5 groups would spend that class period on a given activity, finishing all 5 stations by the end of the week.

Note: In either case, the computer is one of the learning stations and each student is guaranteed computer access at least once a week.

Station assignments should relate directly to curriculum

Station assignments should relate to project or the curriculum area so that students don't perceive them as busy work or try to use the time to catch up on assignments.

Provide for a range of learning styles

In planning, take into consideration a range of learning styles. Each student should participate in at least one activity that appeal to his or her interests or strengths.

Choose activities that require minimal help from the teacher

Leave detailed written instructions for students at each station. Require students to consult "FAQ's" left at each station or another group before posing a question to you.

Consider other locations besides the classroom for a station

A computer in the school library or computer lab might be a good choice.



Using learning centers is often not easy when you first attempt it. You have to keep in the back of your mind the idea that it is not just a new approach to instruction for you but also, in most cases, for the students. You should expect that it will take time for them to get used to it and develop an understanding of what is expected of them. The first time around should be viewed as an experiment during which you expect things to not go as smoothly as you would like. This is just part of the learning process and should be seen that way. Remember, a mistake is only a failure if you don't learn from it. You may also wish to start small and expand your use of Learning Centers over time. This will allow your students to adjust to the new instructional process.

Additional resources for saving online information can be found at:

<http://www.k12science.org/training/projectmgtv3/learningcenterresources.html>



Learning Center Worksheet

Project:
Learning Centers to be Established:
Rotation Plan:
Resources Needed:
Student Instructions:

Backup Plan:

Teacher "To Do" List to Prepare for Project:

Internet Resources Used to Help Develop Implementation Plan:

Other:

The Savvy Cyber Teacher[®]

Using the Internet Effectively in the K12 Classroom



Handout 4: Week Seven Reinforcement Activity



Goal: To complete work on your Technology Implementation Plan.

Activity: The reinforcement activity will simply be a continuation of the workshop activities. You should spend additional time reviewing the Online Development Guide for the Technology Implementation Plan that you began during the workshop. You will need to complete any sections of the Technology Implementation Plan worksheet that you did not get to finish. It will be important for you to complete this work before the next workshop when you will begin working on your web site which will contain content from your workbook.

NOTES:

The Savvy Cyber Teacher®

Using the Internet Effectively in the K12 Classroom



Workshop Leader's Handout: Worksheet Examples

*NOTE: This handout is available in the
Workshop Leader's Guide ONLY*

Technology Implementation Plan Workbook



Cooperative
Learning Groups



Learning Centers



Teacher
Presentations



Computer Lab
Access



Saving Online
Information



Cooperative Learning Group Worksheet

Example Answers

Project:

Musical Plates Project

Activities that Will Use Cooperative Groups:

- *Plot real-time earthquake data and answer related questions*
- *Research and write about the effects of earthquakes on people and communities. Write a letter to the president explaining what was learned.*
- *Research an historical earthquake and explain the science behind the earthquake*
- *Design and build a model of an earthquake-proof building*

Roles for Cooperative Group Members:

- *Internet Data/Information Collector*
- *Group Manager/Facilitator*
- *Recorder*
- *Timekeeper*
- *Reporter*

Group Management/Rotation plan:

Groups will be used throughout the entire unit. Roles will rotate on a daily basis. Each group will meet together at the beginning of each class, discuss the assignment for the day and then break out into their roles. Groups will reassemble at the end of the class to discuss what they have accomplished.

Student Instructions:

Need student instructions for:

- *Group rotation and responsibilities*
- *Specific activity instructions*
- *Review of AUP*

Backup Plan:

- *Have back-up printouts of real time data that groups could use for earthquake plotting. I will make copies each morning prior to school just in case the Internet connection fails.*
- *Students will use traditional resources for research in addition to Internet resources*
- *Have printout of entire web site on hand if needed for instructions or lesson planning*

Teacher "To Do" List to Prepare for Project:

- *Determine group assignments*
- *Establish role rotation and assignments*
- *Identify homework requirements*
- *Write up instructions for each activity*
- *Get a copy of current AUP*
- *Determine grading policy for each assignment*

Internet Resources Used to Help Develop Implementation Plan:

1. *Doing Cooperative Learning*
<http://www.wcer.wisc.edu/nise/cl1/CL/doingcl/DCL1.asp>
2. *Using Cooperative Learning in Science Education*
<http://www.ericse.org/Bulletins/SEB92-1.html>

Other:



Teacher Presentation Worksheet

Example Answers

Project:

Musical Plates Project

Activities for Interactive Teacher Presentation:

Science Class

- *Introduction of project*
- *Display/discuss real-time data for initial activity*
- *Display/discuss student-designed earthquake proof buildings*

Social Studies Class

- *Read different historical accounts of earthquakes linked on the project web site*
- *Write account of how earthquakes affect communities.*

Roles for Students During Your Presentation:

- *Plot earthquakes on world map while data is displayed*
- *Student volunteers bring up the web site and access the data*
- *Student volunteers read aloud historical accounts of earthquakes from web site*
- *Student explain/describe their building designs displayed using projector*

Resources for Students to Use During Presentation:

- *World map*
- *Handouts of historical earthquake accounts*

Student Instructions:

Student instructions needed for:

- *How to conduct research for impact of earthquakes on community (what resources to use)*
- *Research activity involving historical earthquake*
- *Hands-on activity for building earthquake-proof building*
- *Scanning of building designs*

Backup Plan:

I plan to make print-outs of new real time earthquake data on subsequent days of this activity using either the computer in the library or Teacher's lounge. I will make transparencies of this data and display it using an overhead projector. We will do subsequent activities that involve answering questions and looking for pattern using printouts that I'll make of the site.

The social studies teacher will also make copies of the historical accounts for student volunteers to read aloud if the computer doesn't happen to be available for some reason

The language arts and research lessons will be done using offline resources. We will compile handouts from some of the recommended resources linked on the web site and also have students conduct their research in the library.

Teacher "To Do" List to Prepare for Project:

- *Find out exactly when computer will be available to me and social studies teacher*
- *Make back up printouts of web site*
- *Compile research materials*
- *Coordinate assignments with social studies teacher*
- *Ask technology teacher for help in scanning building designs*
- *Make printouts of maps and other materials students will use in class*

Internet Resources Used to Help Develop Implementation Plan:

1. *Presentation Software: Tips and Caveats*
<http://www.llrx.com/columns/guide29.htm>
2. *Hardware for Classroom Presentations*
<http://www.k12science.org/training/projectmgtv3/hardware.html>

Other:



Computer Lab Worksheet

Example Answers

Project:

Musical Plates Project

Activities that Will be Done in the Computer Lab:

- *Access real-time earthquake data*
- *Explore some of the links provided on the Musical Plates web site*
- *Conduct research*
- *Send and check e-mail*

Activities that Will be Done in the Classroom:

- *Use printouts of new real-time earthquake data to add to maps on subsequent days of this activity*
- *Use printouts of site instructions to answer additional project questions*
- *In the language arts/social studies activity, individual students will be called upon to read aloud different historical accounts of earthquakes that I will print out ahead of time*
- *Much of research activities will be done offline in the school library*
- *Students will design and build a model of an earthquake-proof building in class*

Other Considerations for Lab (schedule, assistance, etc.):

Will plan on using lab at least 3 times during unit. Students will be encouraged to use lab during free periods and after school. Will see if technology teacher can be available during any of the lab times. Review AUP with students prior to going to lab each time!

Student Instructions:

Student Instructions needed for:

- *Review of AUP for using computer lab and equipment*
- *First day's assignment to plot earthquakes*
- *How to write account of how earthquakes affect people in the community, including homework assignment*
- *Guidelines for composing e-mail messages*
- *Hands-on activity to design and build earthquake-proof building*

Backup Plan:

- *Save copy of web site on school server so that web site and instructions can be accessed offline from the computer lab if Internet connection fails.*
- *Make a printout of real time data each morning in case Internet goes down during lab time. Make transparencies of data to display on overhead projector in lab, if necessary.*
- *Have offline library resources available for research efforts.*

Teacher "To Do" List to Prepare for Project:

- *Determine lab and technology teacher availability*
- *Make copies of world maps for students*
- *Get copy of school's AUP*
- *Determine homework assignments and grading policy*
- *Review instructions for hands-on activity*

Internet Resources Used to Help Develop Implementation Plan:

1. *Student Management in the Computer Lab*
http://www.d.umn.edu/~kkleckne/teacher/lab_disasters.htm
2. *Techniques for Saving Internet Information*
<http://www.k12science.org/training/projectmgtv3/savingtechniques.html>

Other:



Saving Online Information Worksheet

Example Answers

Project:

Musical Plates Project

Activities that Need Internet Access:

- *Access to real-time earthquake data*
- *Access to e-mail*
- *Access to Musical Plate web site at least once in order to print out/save*

Activities that Can be Done Using Computers without Internet Access:

- *Access static information/instructions on Musical Plates web site*
- *Compose e-mail messages*

Also, activities that don't need computers at all:

- *Plotting earthquake data on maps using previously printed out data*
- *Researching historical earthquakes in library*
- *Designing and building earthquake-proof building*

Plans for Saving/Using Online Information:

- *Use my home computer to print out Musical Plates web pages to copy on transparencies*
- *Use home computer to print out real-time earthquake data every day*
- *Save Musical Plates web pages on disk and install on hard drives of computers in class to use offline*
- *Print out accounts of historical earthquakes to read in class*
- *Copy all student e-mails on disk to send out using my home computer*
- *Print out some of the research material available on Musical Plates site and put in special folder in library*

Student Instructions:

Students instructions needed for:

- *How to access Musical Plates site offline*
- *How to use MS Word to compose e-mail messages*
- *How to conduct research in the library and resources to use*
- *Designing and building earthquake-proof building*
- *Homework assignments*

Backup Plan:

- *Print out copy of Musical Plates web site well ahead of time*
- *Print out 2 weeks worth of data well ahead of time to use only in real emergency*
- *Save electronic version of web site on disk and transfer to computer in classroom*

Teacher "To Do" List to Prepare for Project:

- *Get extra paper and ink for home printer!*
- *Get transparencies from school supply cabinet*
- *Make electronic and paper copy of Musical Plates web site*
- *With help from librarian, assemble appropriate library resources for research*
- *Assemble materials needed for hands-on activity*

Internet Resources Used to Help Develop Implementation Plan:

1. *Techniques for Saving Online Information*
<http://www.k12science.org/training/projectmgtv3/savingtechniques.html>
2. *WebWhacker*
<http://www.bluesquirrel.com/>

Other:



Learning Center Worksheet

Example Answers

Project:

Musical Plates Project

Learning Centers to be Established:

- *Station 1: Students use the computer to access real-time data and plot earthquake data on their maps.*
- *Station 2: Students review previously assembled research material to research historic earthquakes.*
- *Station 3: Students compose "letters to the president" describing what they had learned about earthquakes.*
- *Station 4: Students design and build a model of an earthquake-proof building.*
- *Station 5: Students read historical accounts of earthquakes and write journal entries about the effects of earthquakes on community members.*
- *Station 6: Students practice using triangulation to locate the epicenter of an earthquake.*

Rotation Plan:

(2-hour class periods)

Each day the groups will rotate twice to a different station. The first hour of each class will be spent at one station and the second hour spent at another station. Each group will visit each station twice during this time period

Resources Needed:

- *Wall map with sticky dots*
- *Individual student maps*
- *Printouts of real-time earthquake data during 2 weeks prior to start of activity*
- *Rules and compasses (for triangulation activity)*

Student Instructions:

Student instructions needed for:

- *Rotation plan and assignments*
- *Individual learning station instructions/assignments*
- *FAQ's for each activity*

Backup Plan:

I plan to have a copy of the entire Musical Plates project on hand. Additionally, I will download and print out real time data in the 2 weeks prior to the activity since we will only be plotting data during class for 6 days. If the Internet connection fails and we cannot access real data during class, I will have recently occurring earthquake data.

Teacher "To Do" List to Prepare for Project:

- *Make a hard copy of Musical Plates web site*
- *Print out 2 weeks worth of earthquake data*
- *Set up rotation plan and group assignments*
- *Write up detailed instructions for each learning station*
- *Write up list of FAQ's for each learning station*

Internet Resources Used to Help Develop Implementation Plan:

1. *Designing Web-based Learning Stations*
<http://www.essdack.org/stations/sld001.htm>
2. *Classroom Management Techniques*
<http://www.stemnet.nf.ca/~jscaplen/integration/english/prep2.html>

Other: