

Lab Framework

Text: Cord Unit 1

Unit number and title:

Short Description: Using four problem solving steps to troubleshoot

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Date: January 18, 2008

Lab Title

Using four problem solving steps to troubleshoot a PC video problem

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

Use understanding the problem solving step number one, in troubleshoot a failing computer.

Develop a plan to solve the problem

Carry out the plan

Check to see if your plan results in a working computer

- **Statement of pre-requisite skills needed**

How to read a multi-meter

Identification of computer parts

Understand the process of a flow chart

How and why to use a ESD strap

Know meaning of various computer beeps

- **Vocabulary**

ESD

- **Materials List**

Computer with a faulty video card

Working video card

ESD wrist strap

Philips Screw driver

Blank flow chart

- **GLEs (State Standards) addressed**

Math: **1.4.2 Use procedures to compute the probability of dependent and independent events. W**

EXAMPLES

EX Determine the sample space for independent or dependent events.

EX Determine probabilities of dependent and independent events.

EX Determine the outcomes and probability of multiple independent or dependent events.

Reading: (Reading)

Writing: (Writing)

- **Leadership Skills**

Assessing the situation

Delegating assignments to others

- **SCAN Skills/Workplace Skills**

- **Set-up information**

Show work plan in a troubleshooting flowchart

Make sure you follow safety procedures and are aware of ESD.

- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required**)

1. break into small groups of four; assign roles one person specifically in charge of leading and delegating for their respective problem solving objectives; understanding the problem; deciding on a plan; carrying out the plan; and testing the solution. (time: 15 minutes)
2. First person will be in charge of doing or delegating the hook up and check the computer to see if it works and run the troubleshooting flow chart steps to find that the video card is not working. (time: 20 minutes)
3. 2nd person will be in charge of figuring out a plan to solve the problem of fixing the video problem. Is it to replace the monitor, or the video card, or ram on the video card, etc.(time 15 minutes)
4. The 3rd person will be in charge of implementing the solution of fixing the computer by replacing the video card.
5. The 4th person will test the computer after the repair and see if it worked.

- **Teacher Assessment of student learning** (scoring guide, rubric)

Watch as students test and trouble shoot the problem with a computer with a faulty video card.

Watch as students successfully install a video card

Asses if the computer works successfully

Asses if the students worked together as a team by watching.

- **Summary of learning** (to be finished after student completes lab)

-discuss real world application of learning how to solve problems using the four steps of problem solving ideas from the lab

-opportunity for students to share/present learning

Review the solutions with class

- **Optional activities**

Discuss similar applications of problem solving steps in other areas in their lives.

- **Career Applications**

Every career has problem solving situations that these steps would work for. Also specifically in this field, Work as computer technician for CPI; run your own computer repair business; work for POE.

Washington Applied Math Council

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Lab Data Collection

Student: _____ Date: _____

Unit: _____

Lab Title:

Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

Other Assessment(s)

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