

ClassAct



On-line documentation

ClassAct

The background of the slide is a faded, light-colored image of a computer lab. It shows several students sitting at desks with multiple computer monitors. Some students are looking at the screens, while others are looking at papers or talking to each other. The overall tone is educational and collaborative.

Student Workstation Tutorials

ST520/2/1 - PC Workstation

ST520/2/2 - Handheld Data Terminal

ST520/2/3 - Experiment Platform

ST520/2/4 - Intelligent Base Unit

On-line documentation

Class*Act*



ST520/2/1Z

Student PC Workstation Tutorial

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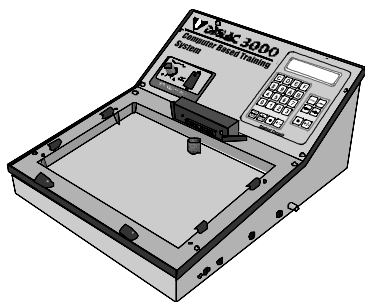
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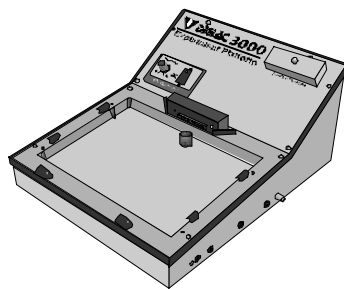
Introduction

This tutorial shows you how to use the Student PC Workstation to log on, select work and enter your answers to questions.

You should follow this tutorial if you are using a student workstation that consists of a personal computer (PC) only. However, if you have a **D3000 Intelligent Base Unit**, a **D3000 Experiment Platform** or a **D3000 Hand Held Data Terminal** at your Workstation, then you should instead follow the workstation tutorial that is provided with the relevant unit. These units are shown in the following diagram:



Intelligent Base Unit



Experiment Platform



Hand Held Data Terminal

IMPORTANT!

Before You Begin....

You will require two numbers from your Instructor before logging on and starting any work, including this tutorial. These numbers will be the same each time you log on at a Workstation.

Class ID Number.

This number identifies the class of students of which you are a member.

Student ID Number.


This 4 digit number personally identifies you within the class. Do **not** use any other number than the one issued to you and do **not** allow another student to log on using your number. If you forget your Student ID number, tell your Instructor.

1.1**Getting Started on the PC Workstation**

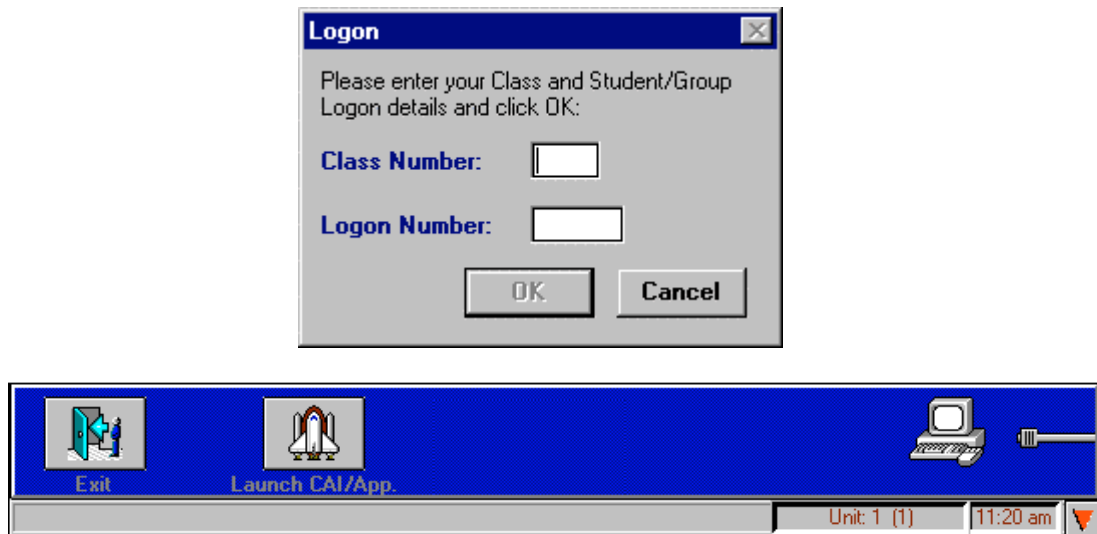
This first section will introduce you to the layout of the PC Workstation. You are probably eager to start straight away: however it is a good idea to go through the following steps first.

Starting the PC Workstation.

Switch on the Workstation computer and start the Windows operating system. The PC Workstation Launcher should start automatically. If not, you

will have to locate and double-click the Launcher icon  in the Windows Program Manager (the Start menu in Windows 95).

Your workstation computer screen should now look similar to the diagram below.



1.2**Logging On to the Workstation**

The Launcher displays the Student Log On dialog box when it starts, as shown in the previous diagram.

To Log On to the Workstation:

1. Type in your **Class ID** number at the entry point and press **Enter** or click the Student ID box.
2. Carefully type in your **Student ID** number at the entry point. The Launcher displays this number as # characters to prevent other students reading it.
3. Click the **OK** button or press **Enter**.
4. If you successfully logged on, the Launcher displays a Welcome message containing your name. After a short time this box will disappear.
5. A message may appear at this point asking if there are any other group members who wish to log on. If you are working in a group select **Yes**, and refer back to step 2.

1.3

Loading Work (this tutorial)

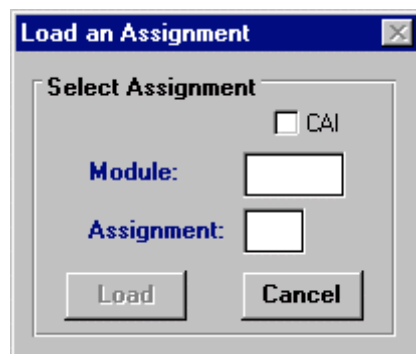


When you start each assignment of a lesson module, you must load the related piece of work to the PC Workstation.

Note: Your Instructor may have set-up the system to replace the term *Assignment* with *Chapter*

Follow these steps to load the tutorial assignment:

1. Click the **Load Assignment** button on the Launcher.
2. The Launcher displays the Load dialog box, shown below.



3. If the dialog box does not show the Tutorial, Module 71.00, Assignment 1, then click on the box you wish to edit and type in the number or, if a pop-up list appears, select the item from the list.
4. When the Module and Assignment entries are correct click the **Load** button.
5. The Workstation will now load the work for this tutorial and start the PC Data Terminal.

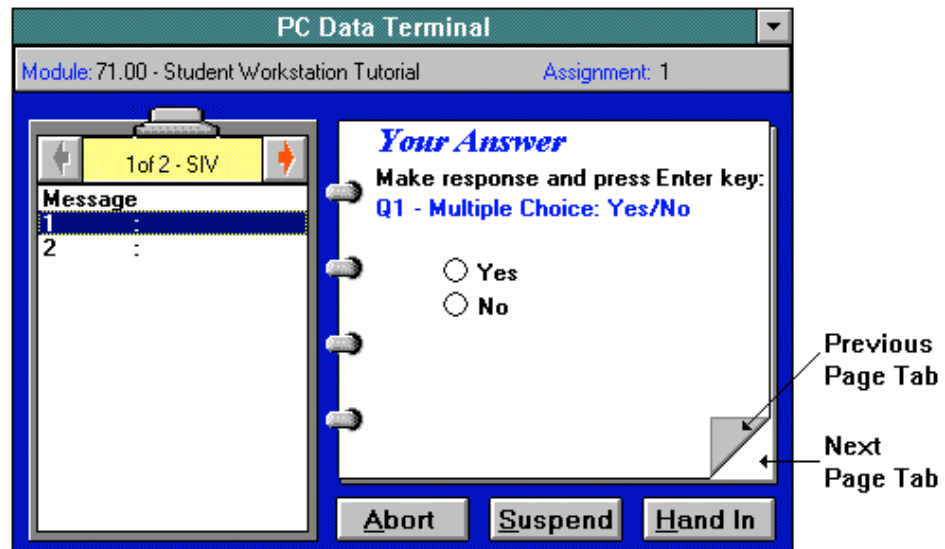
1.4**Launching CAI and other Applications**

Certain lesson modules will require you to load Computer Aided Instruction (CAI) software, or start another application. You should launch CAI and other applications from the Launcher by following these steps:

1. Obtain the unique Launch Code for the CAI package or application to be launched. You will usually find this in the Laboratory Manual.
2. Click the **Launch CAI/App.** button.
3. The Launcher will display the Launch dialog box.
4. Type the Launch Code at the entry point.
5. Click the **Launch** button on the dialog box to start the application or CAI software.

1.5 The PC Data Terminal

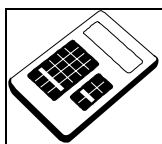
This diagram shows the screen layout of the PC Data Terminal with all the buttons in position. However the PC Data Terminal does not show all the buttons at the same time when running.



Getting Started

When the PC Data Terminal application starts, it will display the title 'page' of the first assignment section on the Workbook. The title page shows the number and type of section you will attempt, and any related notes. Press the **Enter** key on the Workstation keyboard to move to the 'Start Inventory' message. Press the **Enter** key again or click the **Next Page Tab** on the Workbook to then move to the first question.

The PC Data Terminal then displays the first question on the Workbook; including the question number, the question type and the options for your answer. This matches the same question number in the Laboratory Manual. The PC Data Terminal also highlights the current question on the Section Clipboard.



You should use the PC Data Terminal to answer a question each time you see this symbol in the Laboratory Manual.

1.6

Inventory questions



Some lesson modules use **Inventory questions** to go through the launch check list for an assignment. If any items are missing, the PC Data Terminal will warn your Instructor. An assignment usually repeats the Inventory questions in the final section to check whether anything is missing or needs replacing.

The PC Data Terminal should currently display the first section in the tutorial, the Start Inventory section. As a check, the PC Data Terminal should display '1 of 2 - SIV' at the top of the Section Clipboard

Answer the following inventory questions on the PC Data Terminal.

Are the items listed below at your workstation?



1

Student Workstation Tutorial



2

PC Workstation computer

To answer each question, type **Y** (for **Yes**) or **N** (for **No**) or click the appropriate option on the PC Data Terminal. Press the **Enter** key to confirm your response each time.

1.7**Changing Section**

When the inventory is complete, the PC Data Terminal automatically moves on to the next work section.

Note: The Instructor may set a minimum score to achieve in a section. If you do not achieve the minimum section score, the PC Data Terminal may ask you to repeat the section.

The PC Data Terminal displays a new title page on the Workbook when it changes section.

1.8

Task Questions



Lesson modules use **Task questions** to check your progress through the module. The PC Data Terminal *will* grade your answers.

The PC Data Terminal presents task questions in the following formats:

Multiple choice	(appear as A - D or 1 - 5 on the display)
Yes / No	(appear as Yes / No on the display)
Numerical	(appear as ???? on the display)

The PC Data Terminal should now display the Tasks section of the tutorial. As a check, the PC Data Terminal should display '2 of 2 - TSK' at the top of the Section Clipboard



1.1a

Answer the following questions:

What is the capital of Italy?

(Please enter the correct answer : C)

- ☐ a Tokyo
- ☐ b London
- ☐ c Rome
- ☐ d Washington D.C.



1.1b

Which of the following is the mathematical symbol for *equals*?

(Please enter the correct answer : **4**)

1 +

2 <

3 /

4 =

5 >



1.1c

Does the President of the United States live in The White House (Yes or No)?

(Please *deliberately* enter the **incorrect** answer : **No**)

1.9**Changing Answers**

You may wish to move to a different question than that displayed on the Workbook, or edit a previous answer. As your previous answer is wrong, go back to the question by clicking the **Previous Page Tab** so that the Workbook displays question 1.1c. Alternatively, click question 1.1c on the Section Clipboard. To correct your answer, type '**Y**' or click the **Yes** button and then press the **Enter** key.

1.10

Suspending and Retrieving Work



If you do not complete your work, or have to leave the module you are working on, you have the option of suspending your work. This allows you to continue your work later from the point at which you suspended.

Suspending work

Suspend the work you have done in the tutorial by following the steps below:

1. Click the **Exit** button of the Workstation Launcher.
2. As you still have work loaded, the Workstation displays a message to confirm that you wish to exit. Click the **Yes** button on this message box.
3. The Workstation suspends your work in its current state and shuts down the PC Data Terminal.
4. The Workstation will then log you off.
5. The Workstation may ask you for an 'Exit' password. If you have this password, type it at the entry point and click the **Shut Down** button; otherwise click the **Return** button.

You can also click the **Suspend** button on the PC Data Terminal to suspend work.

Retrieving suspended work

Retrieve the work you have done so far by following the steps below:

1. The Workstation may have shut down completely. If this is so, you must restart the Workstation Launcher (If you are not in Windows, type 'win'. If you are at the Windows Program Manager (or Start Menu in Windows 95), locate and double-click the Launcher icon.).
2. If the Launcher is not displaying the Log On dialog box, click the **Log On** button on the Launcher.
3. Log on again by following the steps in Section 1.2 above.
4. The Launcher displays a message asking if you would like to load your suspended work.
5. Click **Yes** to load the work.
6. The PC Data Terminal will start and automatically move to the point where you suspended the tutorial.

1.11

Completing and Handing In the Tutorial



1.1d

I want to paint 9 identical walls, and one wall needs 5 cans of paint to cover it. How many cans of paint do I need?
(Please enter the correct answer: **45**)



1.1e

What is the *exact* value of 0 Kelvin in degrees Celsius?
(Please enter the correct answer: **-273.2**)

You have now completed the tutorial. The PC Data Terminal will display a message box asking if you would like to hand in the work. Check your answers and click the **Yes** button or type '**Y**' to hand in the work.

You can hand in partially completed work by clicking the **Hand In** button. The PC Data Terminal will display a message asking you to confirm the action. Click the **Yes** button (or type '**Y**') to hand in the work; or click the **No** button ('**N**') to cancel the action.

Once the PC Data Terminal hands in the work, it displays the scores attained for each work section. Click the **Close** button to clear the box and shut down the PC Data Terminal.

You now have the option to load another piece of work or log off and close down.

To load a new piece of work, follow the steps detailed in section 1.3 of this tutorial document. Enter the module and assignment numbers for the piece of work you wish to load.

1.12**Closing Down**

1. Click the **Exit** button of the Workstation Launcher.
2. If you have work loaded, the Workstation will suspend it in its current state and shut down the PC Data Terminal.
3. The Workstation will then log you off.

Note: If the Instructor has set an 'Exit' password, the Launcher will not completely shut down until you correctly enter the password. If the Instructor has not given you this password, just leave the Workstation in this state.

1.13

General Conventions

*Launcher*

Exit Button	Logs off from the management system and exits the Launcher.
Launch Button	Launches CAI software or an application using a launch code.
Load Button	Requests and starts a piece of work.
Log On Button	Logs on to the Launcher.
Call Button	Calls the Instructor for help.
Launcher Display Switch	Displays the Launcher on top of any other software. This is always visible at the bottom right of the screen when the Launcher is running.
Report Button	In some modes of operation a simple report can be generated for the Student(s) logged on, covering completed work.

PC Data Terminal

Status Panel	Shows the details for the current work.
Section Clipboard	Shows the responses made in the current work section.
New Section Buttons	Moves to the next or previous section.
Workbook	Displays the current question and response options.
Next Page Tab	Displays the next question.
Previous Page Tab	Displays the previous question.
Hand In Button	Hands in a piece of work as complete and exits the PC Data Terminal.
Suspend Button	Suspends an incomplete piece of work and exits the PC Data Terminal.
Abort Button	Discards a piece of work and exits the PC Data Terminal.

General Terms

Class ID Number	A number used to identify a class of students.
Student ID Number	A number used to identify an individual student
Module Number	A number used to identify a lesson module
CAI	Computer Aided Instruction

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Student Workstation Tutorial Hand Held Data Terminal

ST520/2/2A

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Introduction

This tutorial shows you how to use the D3000 Hand Held Data Terminal at your student workstation to log on, select work and enter your answers to questions.

A picture of the **D3000 Hand Held Data Terminal** is shown below:



IMPORTANT!

Before You Begin....

You will require two numbers from your Instructor before logging on and starting any work, including this tutorial. These numbers will be the same each time you log on at a Workstation.

Class ID Number.

This 2 digit number identifies the class of students of which you are a member.

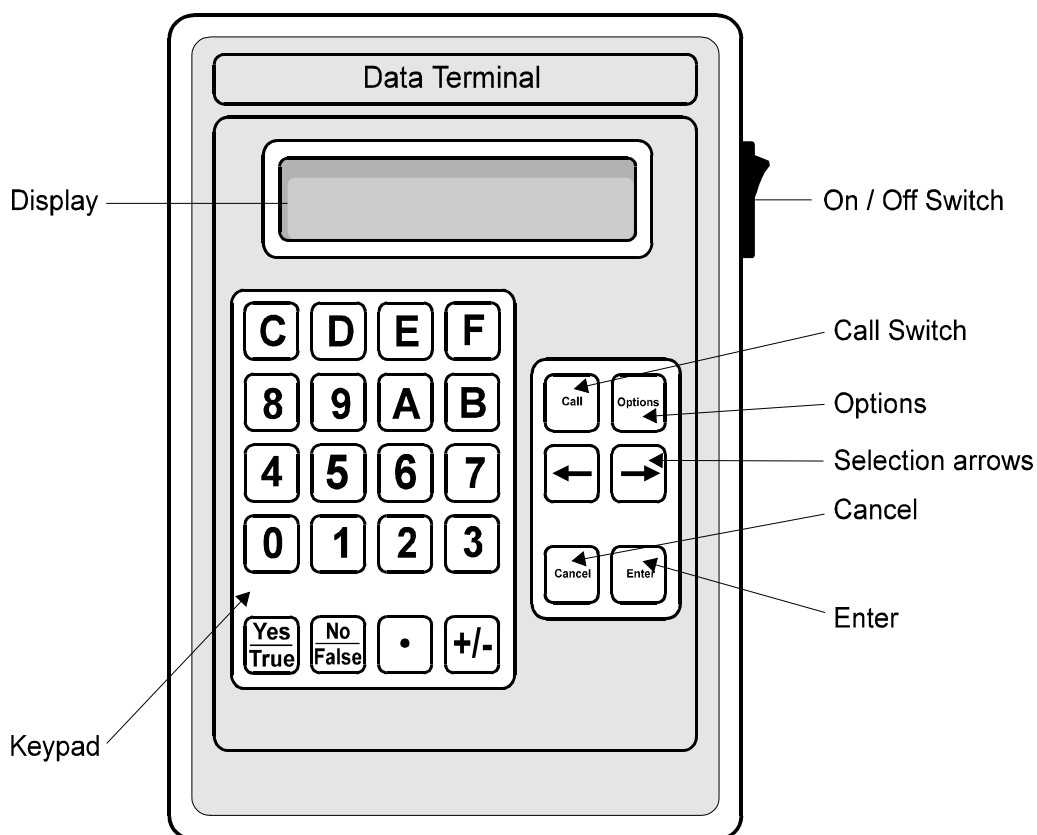
Student ID Number.

This 4 digit number personally identifies you within the class. Do **not** use any other number than the one issued to you and do **not** allow another student to log on using your number. If you forget your Student ID number, tell your Instructor.

1.1

Getting Started on the Hand Held Data Terminal

This first diagram shows the layout of the Hand Held Data Terminal, the keys and a brief description of their function. You are probably eager to start straight away: however it is a good idea to go through the following steps first.



1.2

Logging On at the Hand Held Data Terminal



Switch on the Hand Held Data Terminal at the On/Off switch.

1. The Hand Held Data Terminal will display:
Please enter your
CLASS number: ??
2. Type in your Class ID number at the keypad and press the **Enter** key.
3. If you make a mistake at any time, press the **Cancel** key and retype your entry.
4. The Hand Held Data Terminal will display:
Please enter your
STUDENT number: ????
5. Carefully type in your Student ID number at the keypad. The Hand Held Data Terminal does not display the figures of your Student ID number, to prevent the number being read by other students. Once your Student ID is complete, press the **Enter** key.
6. If you successfully logged on to the management system, the Hand Held Data Terminal displays a Welcome message with your name. Press any key to clear the message.
7. A message may appear at this point asking if there are any other group members who wish to log on. If you are working in a group select **Yes**, and refer back to step 5.

1.3**Using the Options Menu**

The Hand Held Data Terminal displays the Options menu once you have logged on to the management system. To access the Options menu at any other time, press the **Options** key.

The Options menu contains a selection of commands for managing your work. The available commands vary, dependent on the point at which you access the menu and whether the Instructor has disabled certain menu options.

The Hand Held Data Terminal displays the most likely command that you require first. To access the other commands, use the selection arrow keys to move through the menu. Press the **Options** key again to show a more detailed description of the currently displayed command. When the Hand Held Data Terminal displays the required command, press the **Enter** key.

The possible options are as follows:

FINISH Session:	End the work session and log off from the management system.
NEXT Asgnment:	Request and start the next piece of work in the course.
SPECIFIC Asgnment:	Request and start a specific piece of work in the course.
HAND IN Asgnment:	Submit work to the management system for marking.

1.4**Loading Work (this tutorial)**

When starting each assignment of a Lesson Module, you must load the associated work to the Hand Held Data Terminal.

Note: Your Instructor may have set-up the system to replace the term *Assignment* with *Chapter*

Loading the Next Piece of Work

Press the **Options** key and select the 'NEXT Assignment' command. The Hand Held Data Terminal then loads the next piece of work in your course.

The work for this tutorial is specified as **Module 71.00, Assignment 2**. Check that the module and assignment numbers displayed on the Hand Held Data Terminal are correct, then press **Enter**.

If the numbers are not correct follow the 'Aborting ...' and 'Loading Specific...' sections below.

Aborting Loaded Work

If you accidentally load an incorrect assignment, or wish to leave the work without recording any responses, follow these steps:

1. Select 'ABANDON Assignment' from the **Options** menu.
2. The Hand Held Data Terminal displays:
Abandon Asgnment Y/N?
Are you sure you want to discard the current
Asgnment (Asgnment 2 of Module 71.00).
3. Press the **Yes** key to discard the work or the **No** key to cancel the Abort action and continue.

Loading Specific Pieces of Work

1. Press the **Options** key and select the 'SPECIFIC Assignment' command.
2. The Hand Held Data Terminal displays:
Enter Module Number
Mod:
3. Type the required module ID number (**71.00** for this tutorial) and press the **Enter** key.
4. The Hand Held Data Terminal displays:
Enter Assignment Number
Mod: 71.00 Asn:

5. Type the required assignment number (**2** for this tutorial) and press the **Enter** key.
6. If the module and assignment numbers are correct and available from the course, the Hand Held Data Terminal loads the work.

For the tutorial, the display will show:

Module: 71.00 Asn: 02
has been loaded

After a short delay, the display will change to:

Module Name:
71.00 Student Workstation Tutorial

Press any key and the display will then change to:

--START INVENTORY--
Press → to proceed

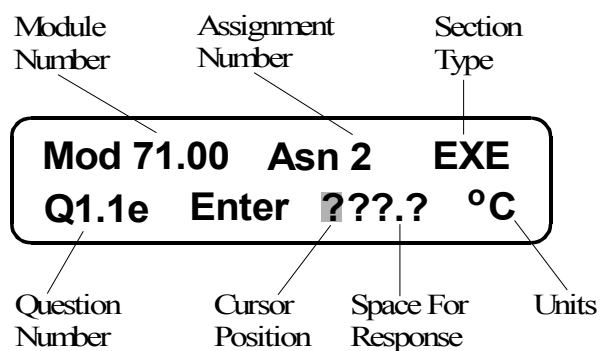
Press the → key.

1.5

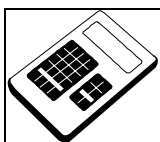
Answering Questions



The Hand Held Data Terminal displays information on your position in the loaded work. This includes the module and assignment numbers, section name, question number and the question prompt. The diagram below shows a typical display.



For each question, type your response on the keypad and press the **Enter** key. Scroll past any messages by pressing the → key.



You should use the Hand Held Data Terminal to answer a question each time you see this symbol in the Laboratory Manual.

1.6

Inventory questions

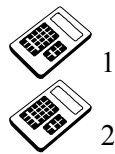


Some lesson modules use **Inventory questions** to go through the launch check list for an assignment. If any items are missing, the Hand Held Data Terminal will warn your Instructor. An assignment usually repeats the Inventory questions in the final section to check whether anything is missing or needs replacing.

The Hand Held Data Terminal should currently display the first section in the tutorial, the Start Inventory section. As a check, the Hand Held Data Terminal should show 'SIV' at the top right of the display.

Answer the following inventory questions on the Hand Held Data Terminal.

Are the items listed below at your workstation?



1 Student Workstation Tutorial

2 Hand Held Data Terminal

To answer each question, press the **Yes** or **No** key on the keypad and press the **Enter** key.

1.7

Changing Section



When the inventory is complete the Hand Held Data Terminal displays:
NEW Section
You are now starting a new section.

Press the ➔ key to move to the next section. This will be the tasks section in the tutorial.

Note: The Instructor may set a minimum score to achieve in a section. If you do not achieve the minimum section score, the Hand Held Data Terminal may ask you to repeat the section.

1.8

Task questions



Lesson modules use **Task questions** to check your progress through the module. The Hand Held Data Terminal *will* grade your answers.

The Hand Held Data Terminal presents task questions in the following formats:

Multiple choice	(appear as a-d > ? or 1-5 > ? on the display)
Yes/No	(appear as Y/N > ? on the display)
Numerical	(appear as ???? on the display)

The Hand Held Data Terminal should now display the Tasks section of the tutorial. As a check, the Hand Held Data Terminal should show 'TSK' at the top right of the display.

Answer the following questions:



1.1a

What is the capital of Italy?

(Please enter the correct answer : C)

- ☐ a Tokyo
- ☐ b London
- ☐ c Rome
- ☐ d Washington D.C.



1.1b

Which of the following is the mathematical symbol for *equals*?

(Please enter the correct answer : 4)

- 1 +
- 2 <
- 3 /
- 4 =
- 5 >



1.1c

Does the President of the United States live in The White House (Yes or No)?

(Please *deliberately* enter the **incorrect** answer : No)

1.9**Changing Answers**

It is possible to step backwards and forwards through the questions using the selection arrow keys.

Correct your previous incorrect answer by following these steps:

1. Scroll back to question 1.1c by pressing the **←** key.
2. Press the **Cancel** key and enter the correct response, **Yes**.
3. Press the **Enter** key to record the new response.

1.10**Suspending and Retrieving Work**

If you do not complete your work, or have to leave the module you are working on, you have the option of suspending your work. This allows you to continue your work later from the point at which you suspended.

Suspending work

Suspend the work you have done in the tutorial by following the steps below:

1. Press the **Options** key.
2. Use the **←** and **→** keys to find the 'FINISH Session' command
3. Press the **Enter** key.

The Hand Held Data Terminal will record the work in its current state and then display:

```
Module: 71.00 Asn: 2  
has been suspended
```

After a short while, the Hand Held Data Terminal will log you off and then display:

```
Switch off / Restart  
You may now switch off. Press any key to  
restart.
```

You could now either switch off the Hand Held Data Terminal or press a key. However, because you are going to continue with the tutorial now, please press a key on the Hand Held Data Terminal.

Retrieving suspended work

You can retrieve suspended work when you log on. If you suspend work at the end of a previous session, the Hand Held Data Terminal automatically loads the suspended work and moves to the point where you suspended it.

Retrieve the work you have done by logging on again, following the steps in Section 1.2 above.

The Hand Held Data Terminal will then automatically load the suspended assignment.

1.11**Completing and Handing In the Tutorial**

1.1d

I want to paint 9 identical walls, and one wall needs 5 cans of paint to cover it. How many cans of paint do I need?
(Please enter the correct answer: **45**)



1.1e

What is the *exact* value of 0 Kelvin in degrees Celsius?
(Please enter the correct answer: **-273.2**)

Once you have answered the final question in a piece of work, follow the steps below:

1. The Hand Held Data Terminal displays:
Hand In (Y/N)?
End of Assignment. Press 'Yes' to hand in,
'No' to return to Assignment.
2. Press the **Yes** key to hand in the work, or press the **No** key to cancel the action.
3. You may also hand in partially completed work by pressing the **Options** key and selecting the 'HAND IN Assignment' command.
4. Once the work is handed in, the console displays a message, followed by the scores attained for each work section. Press any key to clear each message.

The Hand Held Data Terminal will display the most likely command in the options menu. You now have the option to load another piece of work or log off and close down.

To load a new piece of work, follow the steps detailed in section 1.4 of this tutorial document.

1.12**Closing Down**

To finish the current session at any time:

1. Press the **Options** key and select the 'FINISH Session' command.
2. If you currently have work loaded, the Hand Held Data Terminal will suspend it in its current state.
3. Do *not* switch off the unit until the Hand Held Data Terminal displays:

Switch off / Restart

You may now switch off. Press any key to restart.

1.13

General Conventions

*Hand Held Data Terminal*

On/Off Switch	Switches the Hand Held Data Terminal on or off.
Call Key	Calls the Instructor for help.
Options Key	Calls up the Options menu of the Hand Held Data Terminal.
Selection Arrows	Enable you to scroll through the Options menu and questions.
Cancel Key	Cancels the current action or clears a question response.
Enter Key	Enters information to the Hand Held Data Terminal.
Keypad	Alphanumeric and Yes/No response keys.
Display	Displays headings, instructions, questions and answers.

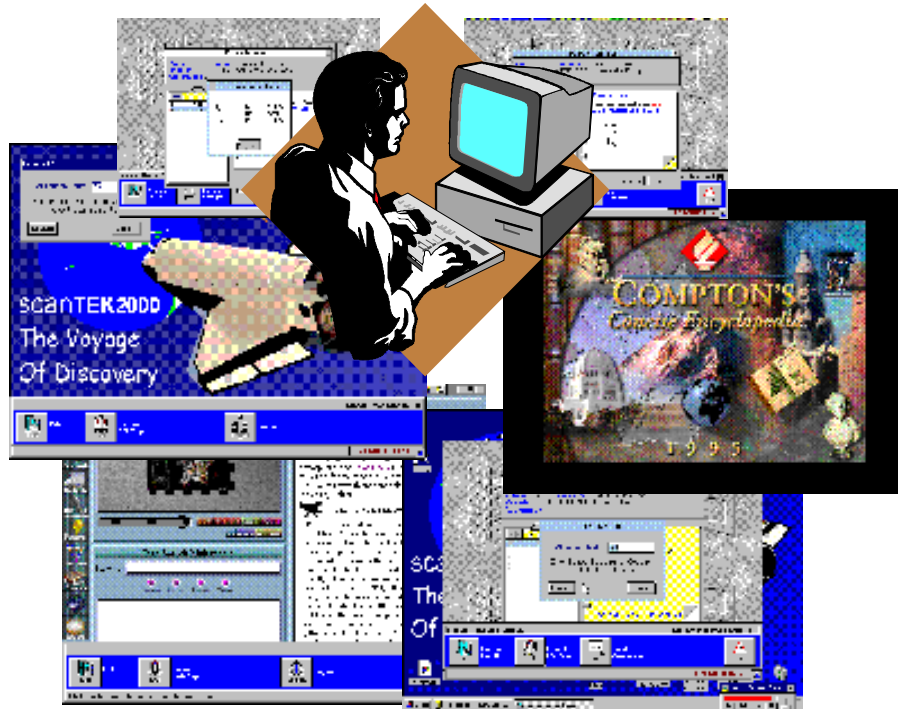
Options Menu

FINISH Session	Logs off a student in a class
NEXT Assignment	Request and start the next piece of work in the course.
SPECIFIC Assignment	Request and start a specific piece of work in the course.
HAND IN Assignment	Submit work to the management system for marking.
CONTINUE Assignment	Continue with the current work.
ABORT Assignment	Discard the current work.

General Terms

Class ID Number	A number used to identify a class of students.
Student ID Number	A number used to identify an individual student.
Module Number	A number used to identify a lesson module.
TSK	Task section heading on the Hand Held Data Terminal display.
SIV / EIV	Inventory section heading on the Hand Held Data Terminal display.
Suspended work	An incomplete piece of work that has been temporarily stored for completion later.

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Student Workstation Tutorial Experiment Platform

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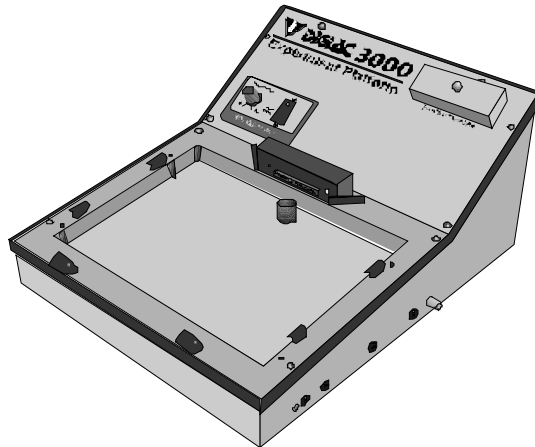
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Introduction

This tutorial shows you how to use a Student PC Workstation connected to a D3000 Experiment Platform to log on, select work and enter your answers to questions.

A picture of the **D3000 Experiment Platform** is shown below:



IMPORTANT!

Before You Begin....

You will require two numbers from your Instructor before logging on and starting any work, including this tutorial. These numbers will be the same each time you log on at a Workstation.

Class ID Number.

This number identifies the class of students of which you are a member.

Student ID Number.


This 4 digit number personally identifies you within the class. Do **not** use any other number than the one issued to you and do **not** allow another student to log on using your number. If you forget your Student ID number, tell your Instructor.

1.1**Getting Started on the PC Workstation**

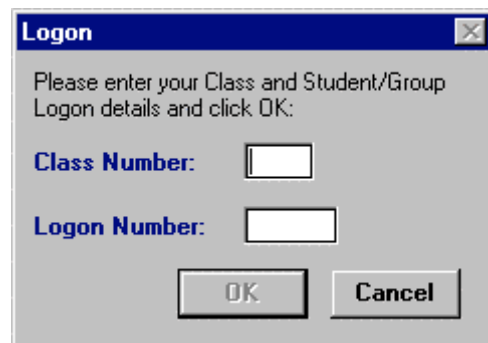
This first section will introduce you to the layout of the PC Workstation. You are probably eager to start straight away: however it is a good idea to go through the following steps first.

**Starting the PC Workstation.**

Switch on the Workstation computer and start the Windows operating system. The PC Workstation Launcher should start automatically. If not,

you will have to locate and double-click the Launcher icon  in the Windows Program Manager (the Start menu in Windows 95).

Your workstation computer screen should now look similar to the diagram below.



1.2**Logging On to the Workstation**

The Launcher displays the Student Log On dialog box when it starts, as shown in the previous diagram.

To Log On to the Workstation:

1. Type in your **Class ID** number at the entry point and press **Enter** or click the Student ID box.
2. Carefully type in your **Student ID** number at the entry point. The Launcher displays this number as # characters to prevent other students reading it.
3. Click the **OK** button or press **Enter**.
4. If you successfully logged on, the Launcher displays a Welcome message containing your name. After a short time this box will disappear.
5. A message may appear at this point asking if there are any other group members who wish to log on. If you are working in a group select **Yes**, and refer back to step 2.

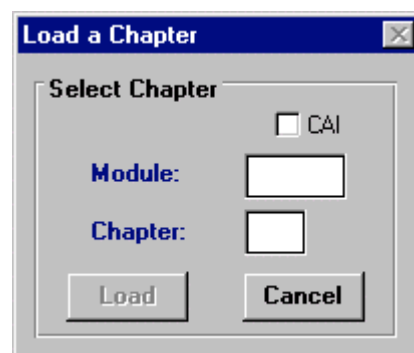
1.3**Loading Work (this tutorial)**

When you start each chapter of a lesson module, you must load the related piece of work to the PC Workstation.

Note: Your Instructor may have set-up the system to replace the term *Chapter* with *Assignment*

Follow these steps to load the tutorial chapter:

1. Click the **Load Chapter** button on the Launcher.
2. The Launcher displays the Load dialog box, shown below.



1. If the dialog box does not show the Tutorial, **Module 71.00, Chapter 3**, then click on the box you wish to edit and type in the number or, if a pop-up list appears, select the item from the list.
2. When the Module and Chapter entries are correct click the **Load** button.
3. The Workstation will now load the work for this tutorial and start the PC Data Terminal.

1.4**Launching CAI and other Applications**

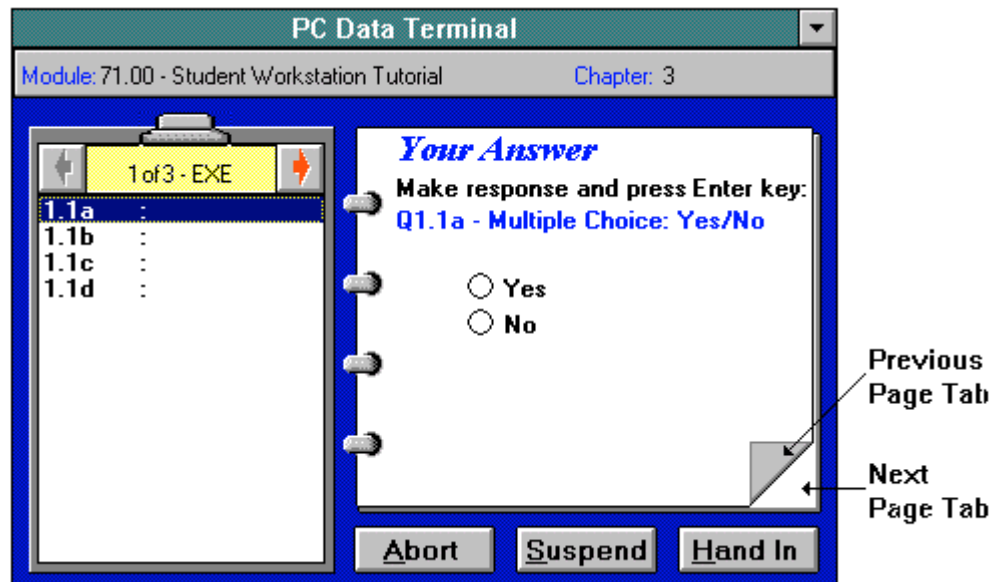
Certain lesson modules will require you to load Computer Aided Instruction (CAI) software, or start another application. You should launch CAI and other applications from the Launcher by following these steps:

1. Obtain the unique Launch Code for the CAI package or application to be launched. You will usually find this in the Laboratory Manual.
2. Click the **Launch CAI/App.** button.
3. The Launcher will display the Launch dialog box.
4. Type the Launch Code at the entry point.
5. Click the **Launch** button on the dialog box to start the application or CAI software.

1.5

The PC Data Terminal

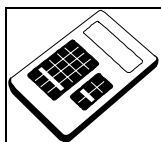
This diagram shows the screen layout of the PC Data Terminal with all the buttons in position. However the PC Data Terminal does not show all the buttons at the same time when running.



Getting Started

When the PC Data Terminal application starts, it will display the title 'page' of the first chapter section on the Workbook. The title page shows the number and type of section you will attempt, and any related notes. To move to the first question, click the **Next Page Tab** on the Workbook or press the **Enter** key on the Workstation keyboard.

The PC Data Terminal then displays the first question on the Workbook; including the question number, the question type and the options for your answer. This matches the same question number in the Laboratory Manual. The PC Data Terminal also highlights the current question on the Section Clipboard.



You should use the PC Data Terminal to answer a question each time you see this symbol in the Laboratory Manual.

1.6

General Questions



The PC Data Terminal should now display the first section of the tutorial, entitled 'Exercise'. As a check, the PC Data Terminal should display '1 of 3 - EXE' at the top of the Section Clipboard.

Exercise sections generally require you to work through some practical exercises in the Laboratory Manual. The Laboratory Manual includes some questions about your observations. You will enter your answers to these questions at the PC Data Terminal.

The PC Data Terminal presents questions in the following formats:

Multiple choice	(appear as A - D or 1 - 5 on the display)
Yes / No	(appear as Yes / No on the display)
Numerical	(appear as ???? on the display)

Please answer the following questions to familiarize yourself with these question formats:



1.1a

The Sun always rises in the East. Is this statement true? (**Yes** or **No**)
(Please enter the correct answer : **Yes**)



1.1b

What is the capital of Italy?
(Please enter the correct answer : **C**)

- ☐ a Tokyo
- ☐ b London
- ☐ c Rome
- ☐ d Washington D.C.



1.1c

How many months are there in a year?
(Please *deliberately* enter the **incorrect** answer : **10**)

1.7

Changing Answers



You may wish to move to a different question than that displayed on the Workbook, or edit a previous answer. As your answer to question 1.1c is wrong, go back to the question by clicking the **Previous Page Tab** so that the Workbook displays question 1.1c. Alternatively, click question 1.1c on the Section Clipboard. To correct your answer, type **12** and then press the **Enter** key.

Now answer the last question in this section.



1.1d

What is the Exact value of 0 Kelvin in degrees Celsius?
(Please enter the correct answer : -273.2)

1.8

Changing Section

A chapter or assignment from a lesson module usually contains between one and three sections entitled Exercise, Worksheet and Assessment.

When one section is complete, the PC Data Terminal automatically moves on to the next work section.

Note: The Instructor may set a minimum score to achieve in a section. If you do not achieve the minimum section score, the PC Data Terminal may ask you to repeat the section.

The PC Data Terminal displays a new title page on the Workbook when it changes section.

1.9

Fault Questions



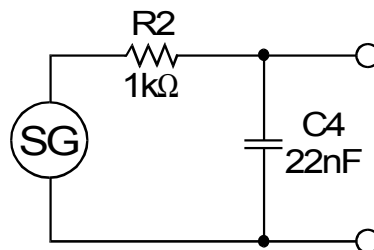
You should have now progressed to the next section of the tutorial, entitled 'Worksheet'. As a check, the PC Data Terminal should display '2 of 3 - WKS' at the top of the Section Clipboard.

Worksheet sections contain Fault questions. These involve connecting an electronic circuit board to the Experiment Platform and introducing one or more faults. You will analyze and diagnose each fault, entering your results at the PC Data Terminal.

However, for this tutorial you will progress through two typical fault questions without needing to connect a board to the Experiment Platform.

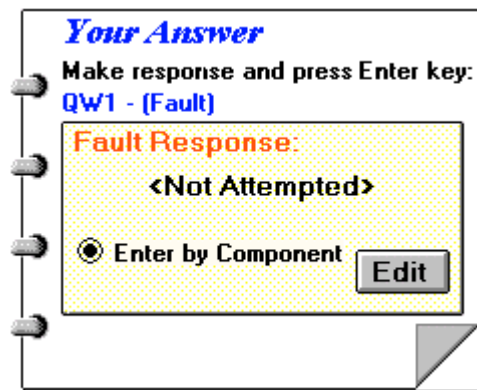
Question QW1:

A typical fault question asks you to arrange links on the circuit board to create a circuit. The PC Data Terminal then introduces a fault that you diagnose by carrying out a series of tests and measurements.



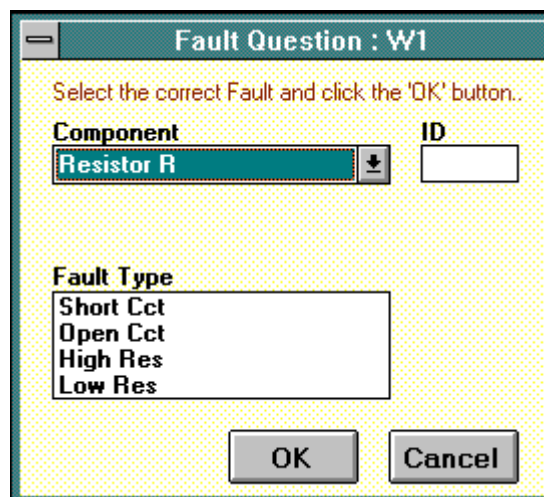
For the tutorial, assume the fault is that the capacitor C4 has a capacitance value that is too low. Follow the steps below to enter the fault response at the PC Data Terminal.

1. The PC Data Terminal displays the fault question on the Workbook as shown below:



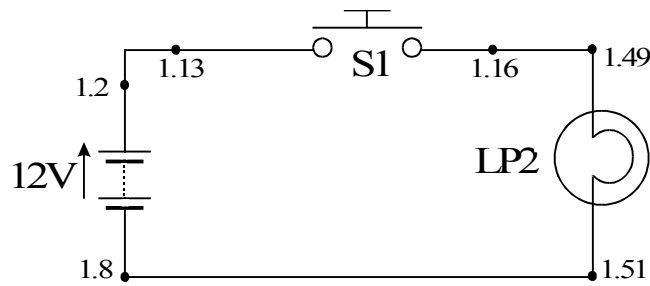
Your Answer
Make response and press Enter key:
QW1 - (Fault)
Fault Response:
<Not Attempted>
☒ Enter by Component **Edit**

2. Click the **Edit** button. The PC Data Terminal will then display the Fault Question edit box, shown below:



Fault Question : W1
Select the correct Fault and click the 'OK' button..
Component **ID**
Resistor R
Fault Type
Short Cct
Open Cct
High Res
Low Res
OK **Cancel**

3. Select '**Capacitor C**' from the drop-down component list.
4. Enter the component ID from the circuit into the '**ID**' entry box; which in this case is **4**
5. Select the type of fault from the displayed list, i.e. '**Low Value**' for this question.
6. Click the **OK** button.

Question QW2:

Certain fault questions require you to specify the fault using the test points, or nodes, either side of the fault. As an example, assume that investigations have found that the lamp LP2 in the above circuit is broken and is therefore open circuit.

Follow the steps given below to specify and enter this fault using the node references:

1. Select the 'Enter by Node' option and click the **Edit** button.
2. In the Fault Question edit box, select node number **1.49** for the first node and node number **1.51** for the second node.
3. Select '**Open Cct**' for the fault type and click the **OK** button.

You have now completed the Worksheet section of the tutorial.

1.10

Suspending and Retrieving Work



If you do not complete your work, or have to leave the module you are working on, you have the option of suspending your work. This allows you to continue your work later from the point at which you suspended.

Suspending work

Suspend the work you have done in the tutorial by following the steps below:

1. Click the **Exit** button of the Workstation Launcher.
2. As you still have work loaded, the Workstation displays a message to confirm that you wish to exit. Click the **Yes** button on this message box.
3. The Workstation will suspend your work in its current state and shut down the PC Data Terminal.
4. The Workstation will then log you off.
5. The Workstation may display a message asking you for an 'Exit' password. If your Instructor has given you this password, type it in at the entry point and click the **Shut Down** button; otherwise click the **Return** button.

You can also suspend work by clicking the **Suspend** button on the PC Data Terminal.

Retrieving suspended work

You can retrieve suspended work when you log on. Retrieve the work you have done so far by following the steps below:

1. The Workstation may have shut down completely. If this is the case, you must restart the Workstation Launcher (If you are no longer in Windows, type 'win'. If you are at the Windows Program Manager (or Start Menu in Windows 95), locate and double-click the Launcher icon.).
2. If the Launcher is not displaying the Log On dialog box, click the Log On button on the Launcher.
3. Log on again by following the steps in Section 1.2 above.
4. The Launcher displays a message asking if you would like to load your suspended work.
5. Click **Yes** to load the work.
6. The PC Data Terminal will start and automatically move to the point where you suspended the tutorial.

1.11

Completing the Tutorial



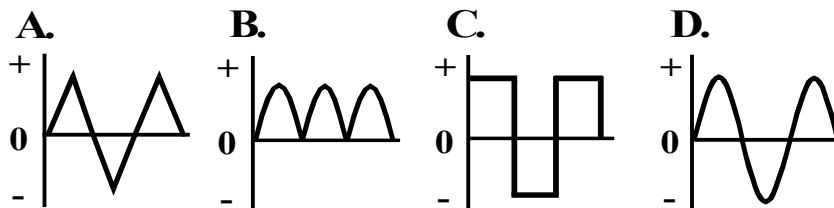
You should now be at the third section of the tutorial, entitled 'Assessment'. As a check, the PC Data Terminal should display '3 of 3 - ASM' at the top of the Section Clipboard.

Student Assessment sections within a Laboratory Manual require you to apply the theories you have learnt in the chapter to answer a series of questions. You will enter your answers to these questions at the PC Data Terminal.

Please answer the following questions to familiarize yourself with the format of typical assessment questions and to complete this tutorial.

**Student Assessment 1**

1. Select the alternating sinusoidal waveform from the diagrams below.
(Please enter the correct answer : **D**)



2. The peak-peak value of a Saw Tooth wave is 282V. Its rms. value is:
(Please enter the correct answer : **A**)

☐ a 100V ☐ b 120V ☐ c 141V ☐ d 200V

3. The periodic time of a sine wave is 1ms. Its frequency is:
(Please enter the correct answer : **C**)

☐ a 100Hz ☐ b 500Hz ☐ c 1kHz ☐ d 2kHz

4. The frequency of a sinusoidal alternating voltage is 4kHz. The time for one cycle is: (Please enter the correct answer : **B**)

☐ a 25 μ s ☐ b 0.25ms ☐ c 2.5ms ☐ d 25ms

1.12**Handing In Work**

You have now completed the tutorial. The PC Data Terminal will display a message box asking if you would like to hand in the work. Check your answers and click the **Yes** button or type '**Y**' to hand in the work.

You can hand in partially completed work by clicking the **Hand In** button. The PC Data Terminal will display a message asking you to confirm the action. Click the **Yes** button (or type '**Y**') to hand in the work; or click the **No** button ('**N**') to cancel the action.

Once the PC Data Terminal hands in the work, it displays the scores attained for each work section. Click the **Close** button to clear the box and shut down the PC Data Terminal.

You now have the option to load another piece of work or log off and close down.

To load a new piece of work, follow the steps detailed in section 1.3 of this tutorial document. Enter the module and chapter numbers for the piece of work that you wish to load.

1.13**Closing Down**

1. Click the **Exit** button of the Workstation Launcher.
2. If you have work loaded, the Workstation will suspend it in its current state and shut down the PC Data Terminal or any loaded CAI software.
3. The Workstation will then log you off.

Note: If the Instructor has set an 'Exit' password, the Launcher will not completely shut down until you correctly enter the password. If the Instructor has not given you this password, just leave the Workstation in this state.

1.14

General Conventions

*Launcher*

Exit Button	Logs off from the management system and exits the Launcher.
Launch Button	Launches CAI software or an application using a launch code.
Load Button	Requests and starts a piece of work.
Log On Button	Logs on to the Launcher.
Call Button	Calls the Instructor for help.
Launcher Display Switch	Displays the Launcher on top of any other software. This is always visible at the bottom right of the screen when the Launcher is running.
Report Button	In some modes of operation a simple report can be generated for the Student(s) logged on, covering completed work.

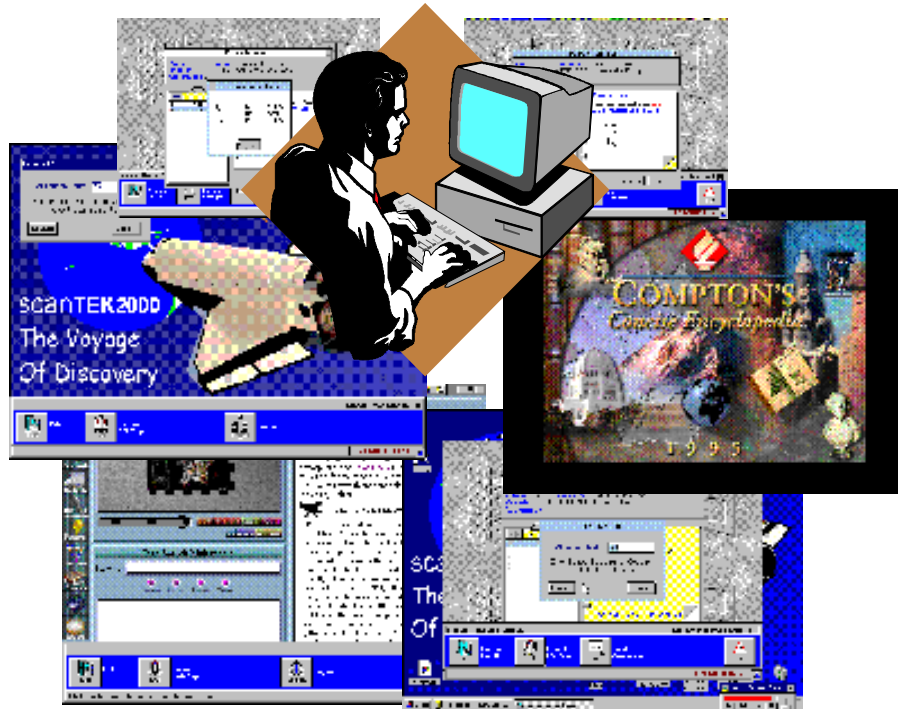
PC Data Terminal

Status Panel	Shows the details for the current work.
Section Clipboard	Shows the responses made in the current work section.
New Section Buttons	Moves to the next or previous section.
Workbook	Displays the current question and response options.
Next Page Tab	Displays the next question.
Previous Page Tab	Displays the previous question.
Hand In Button	Hands in a piece of work as complete and exits the PC Data Terminal.
Suspend Button	Suspends an incomplete piece of work and exits the PC Data Terminal.
Abort Button	Discards a piece of work and exits the PC Data Terminal.

General Terms

Class ID Number	A number used to identify a class of students.
Student ID Number	A number used to identify an individual student
Module Number	A number used to identify a lesson module
CAI	Computer Aided Instruction

Class*Act*



Student Workstation Tutorial Intelligent Base Unit

ST520/2/4A

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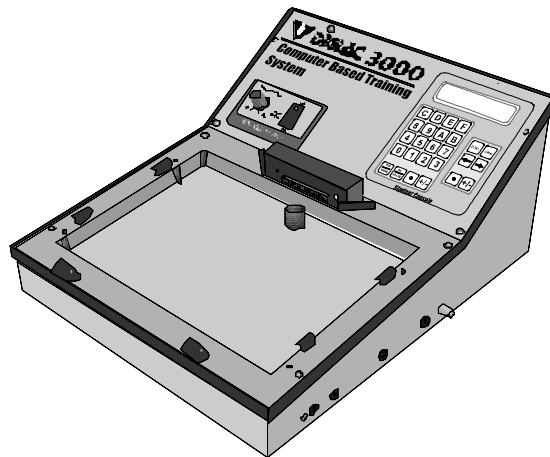
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Introduction

This tutorial shows you how to use the D3000 Intelligent Base Unit at your student workstation to log on, select work and enter your answers to questions.

A picture of the **D3000 Intelligent Base Unit** is shown below:



IMPORTANT!

Before You Begin....

You will require two numbers from your Instructor before logging on and starting any work, including this tutorial. These numbers will be the same each time you log on at a Workstation.

Class ID Number.

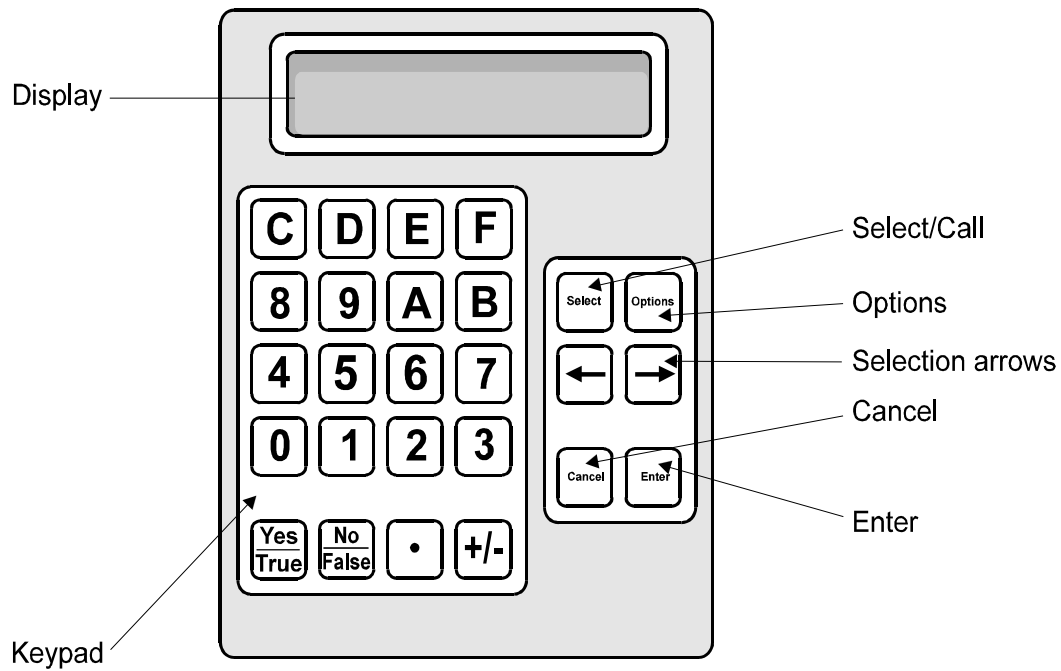
This 2 digit number identifies the class of students of which you are a member.

Student ID Number.

This 4 digit number personally identifies you within the class. Do **not** use any other number than the one issued to you and do **not** allow another student to log on using your number. If you forget your Student ID number, tell your Instructor.

1.1**Getting Started on the Base Unit**

This first diagram shows the layout of the Base Unit console, the keys and a brief description of their function. You are probably eager to start straight away: however it is a good idea to go through the following steps first.



1.2

Logging On at the Base Unit



Switch on the Base Unit at the On/Off switch.

1. The Base Unit will display:
Please enter your
CLASS number: ??
2. Type in your Class ID number at the keypad and press the **Enter** key.
3. If you make a mistake at any time, press the **Cancel** key and retype your entry.
4. The Base Unit will display:
Please enter your
STUDENT number: ????
5. Carefully type in your Student ID number at the keypad. The Base Unit does not display the figures of your Student ID number, to prevent the number being read by other students. Once your Student ID is complete, press the **Enter** key.
6. If you successfully logged on to the management system, the Base Unit displays a Welcome message with your name. Press any key to clear the message.
7. A message may appear at this point asking:
Any more students to
Log On (Y/N)?
If you are working in a group select **Y**, and refer back to step 5.

1.3

Using the Options Menu

The Base Unit automatically displays the Options menu once you have successfully logged on to the management system. To access the Options menu at any other time, press the **Options** key.

The Options menu contains a selection of commands for managing your work. The available commands vary, dependent on the point at which you access the menu and whether the Instructor has disabled certain menu options.

The Base Unit displays the most likely command that you require first. To access the other commands, use the selection arrow keys to move through the menu. Press the **Options** key again to show a more detailed description of the currently displayed command. When the Base Unit displays the required command, press the **Enter** key.

The possible options are as follows:

FINISH Session:	End the work session and log off from the management system.
NEXT Chapter:	Request and start the next piece of work in the course.
SPECIFIC Chapter:	Request and start a specific piece of work in the course.
HAND IN Chapter:	Submit work to the management system for marking.

1.4

Loading Work (this tutorial)



When starting each chapter of a Lesson Module, you must load the associated work to the Base Unit.

Note: Your Instructor may have set-up the system to replace the term *Chapter* with *Assignment*

Loading the Next Piece of Work

Press the **Options** key and select the 'NEXT Chapter' command. The Base Unit then loads the next piece of work in your course.

The work for this tutorial is specified as **Module 71.00, Chapter 4**. Check that the module and chapter numbers on the Base Unit display are correct for the tutorial, then press **Enter**.

If the numbers are not correct follow the 'Aborting ...' and 'Loading Specific...' sections below.

Aborting Loaded Work

If you accidentally load an incorrect chapter, or wish to leave the work without recording your responses, follow the steps below:

1. Press the **Options** key and select the 'ABANDON Chapter' command.
2. The Base Unit displays:
Abandon Chapter Y/N?
Are you sure you want to discard the current
chapter (Chapter 4 of Module 71.00) .
3. Press the **Yes** key to discard the work or the **No** key to cancel the Abort action and continue.

Loading Specific Pieces of Work

1. Press the **Options** key and select the 'SPECIFIC Chapter' command.
2. The Base Unit displays:
Enter Module Number
Mod:
3. Type the required module ID number (**71.00** for this tutorial) and press the **Enter** key.
4. The Base Unit displays:
Enter Chapter Number
Mod: 71.00 Chap:

5. Type the required chapter number (**4** for this tutorial) and press the **Enter** key.
6. If the Module and Chapter numbers are correct and available from the course, the Base Unit loads the work.

For the tutorial, the display will show:

Module: 71.00 Chp: 04
has been loaded

After a short delay, the display will change to:

Module Name:
71.00 Student Workstation Tutorial

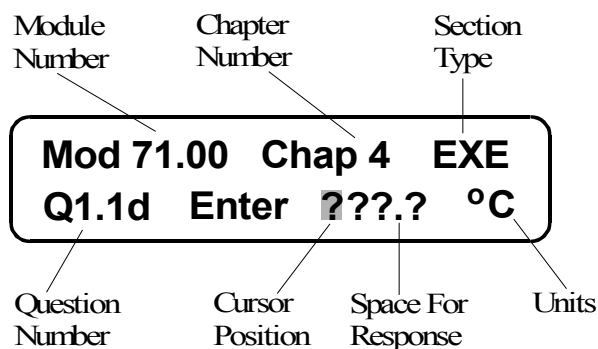
Press any key to start the tutorial

1.5

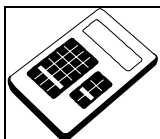
Answering Questions



The Base Unit displays information on your position in the loaded work. This includes the module and chapter numbers, section name, question number and the question prompt. The diagram below shows a typical display.



For each question, type your response on the keypad and press the **Enter** key. Scroll past any displayed messages by pressing any key except the **Call** key or **Options** key.



You should use the Base Unit to answer a question each time you see this symbol in the Laboratory Manual.

1.6

General Questions



The Base Unit should now display the first section of the tutorial, entitled 'Exercise'. As a check, the Base Unit should show 'EXE' at the top right of the display.

Exercise sections generally require you to work through some practical exercises in the Laboratory Manual. The Laboratory Manual includes some questions about your observations. You will enter your answers to these questions at the Base Unit.

The Base Unit presents questions in the following formats:

Multiple choice	(appear as a-d > ? on the display)
Yes/No	(appear as Y/N > ? on the display)
Numerical	(appear as ???? on the display)

The Base Unit should now display the first question of the Exercise section. Please answer the following questions to familiarize yourself with these question formats:



1.1a

The Sun always rises in the East. Is this statement true? (**Yes** or **No**)
(Please enter the correct answer : **Yes**)



1.1b

What is the capital of Italy?
(Please enter the correct answer : **C**)

- ☐ a Tokyo
- ☐ b London
- ☐ c Rome
- ☐ d Washington D.C.



1.1c

How many months are there in a year?
(Please *deliberately* enter the **incorrect** answer : **10**)

1.7

Changing Answers



It is possible to step backwards and forwards through the questions using the selection arrow keys.

Correct your incorrect answer to question 1.1c by following these steps:

1. Scroll back to question 1.1c by pressing the **←** key.
2. Press the **Cancel** key and enter the correct response, **12**.
3. Press the **Enter** key to record the new response.

Now answer the last question in this section.



1.1d

What is the Exact value of 0 Kelvin in degrees Celsius?

(Please enter the correct answer : **-273.2**)

1.8

Changing Section



When a section is complete the Base Unit displays:

NEW Section

You are now starting a new section.

Press any key except the **Call** key or **Options** key to move to the next section.

Note: The Instructor may set a minimum score to achieve in a section. If you do not achieve the minimum section score, the Hand Held Data Terminal may ask you to repeat the section.

1.9

Fault Questions



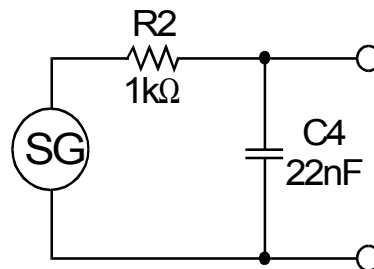
You should have now progressed to the next section of the tutorial, entitled 'Worksheet'. As a check, the Base Unit should show 'WKS' at the top of the display.

Worksheet sections contain Fault questions that involve connecting an electronic circuit board to the Base Unit and introducing one or more faults to the board. You will analyze and diagnose each fault and then enter your results at the Base Unit.

However, for this tutorial you will just progress through two typical fault questions, without needing to connect a board to the Base Unit.

Question QW1:

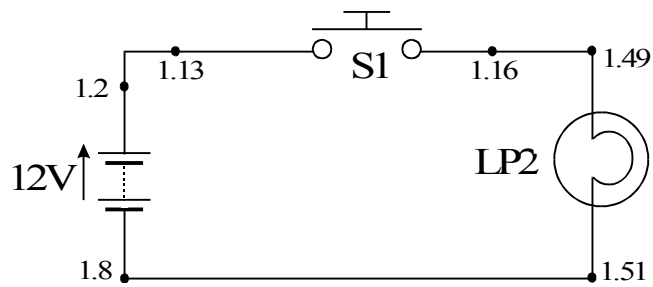
A typical fault question asks you to arrange links on the circuit board to create a circuit. The Base Unit then introduces a fault that you diagnose by carrying out a series of tests and measurements.



For the tutorial, assume the fault is that the capacitor C4 has a capacitance value that is too low. Follow the steps below to enter the fault response at the Base Unit.

1. The Base Unit displays:
 FAULT Question QW1
 Carry Out (Y/N)?
2. Press the **Yes** key.
 You may hear the click as the Base Unit switches on the fault relay
3. The Base Unit then displays:
 Select Component
 >R<..C

4. Use the **←** and **→** keys until the >...< symbols are around 'C', then press the **Enter** key.
5. The Base Unit will display:
Enter Component ID:
Capacitor C
6. Enter the component ID from the circuit, which in this case is **4**, then press the **Enter** key.
7. The Base Unit then displays:
Select Fault Type:
Short Cct **→**
8. Use the **←** and **→** keys until the Base Unit displays the required fault type, i.e. '**Low Value**' for this question.
9. Press the **Enter** key.
10. The Base Unit should then display:
Confirm Fault: (Y/N) ?
C4 - Low Value
11. If the fault response is incorrect, press the **No** key and re-enter the details.
12. When you are happy with the response, press the **Yes** key to progress to the next fault question.

Question QW2:

Certain fault questions require you to specify the fault using the test points, or nodes, either side of the fault. As an example, assume that investigations have found that the lamp LP2 in the above circuit is broken and is therefore open circuit.

Follow the steps given below to specify and enter this fault using the node references:

1. Highlight the 'Nodes' option when prompted to enter how you wish to specify the fault.
2. When prompted with 'Enter Node 1 number', type **1.49** for the first node and press the **Enter** key.
3. When prompted with 'Enter Node 2 number', type **1.51** for the second node and press the **Enter** key.
4. Use the **←** and **→** keys to scroll through the menu and select '**Open Cct**' as the fault type.
5. Press the **Enter** key.
6. Confirm that your fault response reads 'TP1.49 - 1.51 Open Cct' and press the **Yes** key.

You have now completed the Worksheet section of the tutorial.

1.10

Suspending and Retrieving Work



If you have not completed your work, or you have to leave the module you are currently working on, you have the option of suspending your work. This allows you to continue your work later from the point at which you suspended.

Suspending work

Suspend the work you have done in the tutorial by following the steps below:

1. Press the **Options** key.
2. Use the **←** and **→** keys to find the 'FINISH Session' command
3. Press the **Enter** key.

The Base Unit will record the work in its current state and then display:

```
Module: 71.00 Asn: 4  
has been suspended
```

After a short while, the Base Unit will log you off and then display:

```
Switch off / Restart  
You may now switch off. Press any key to  
restart.
```

You could now either switch off the Base Unit or press a key. However, because you are going to continue with the tutorial now, please press a key on the Base Unit.

Retrieving suspended work

You can retrieve suspended work when you log on. If you suspend work at the end of a previous session, the Base Unit automatically loads the suspended work and moves to the point where you suspended it.

Retrieve the work you have done by logging on again, following the steps in Section 1.2 above.

The Base Unit will then automatically load the suspended chapter.

1.11

Completing the Tutorial



You should now be at the third section of the tutorial, entitled 'Assessment'. As a check, the Base Unit should show 'ASM' at the top of the display.

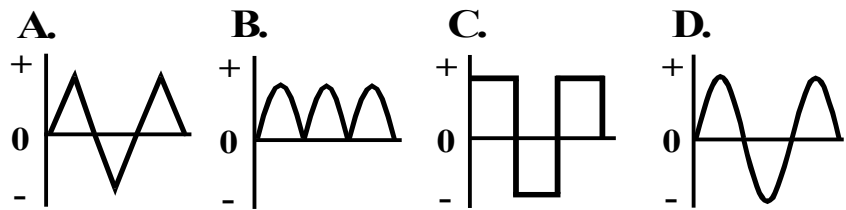
Student Assessment sections within a Laboratory Manual require you to apply the theories you have learnt in the chapter to answer a series of questions. You will enter your answers to these questions at the Base Unit.

Please answer the following questions to familiarize yourself with the format of typical assessment questions and to complete this tutorial.



Student Assessment 1

1. Select the alternating sinusoidal waveform from the diagrams below.
(Please enter the correct answer : **D**)



2. The peak-peak value of a Saw Tooth wave is 282V. Its rms. value is:
(Please enter the correct answer : **A**)

☐ a 100V ☐ b 120V ☐ c 141V ☐ d 200V

3. The periodic time of a sine wave is 1ms. Its frequency is:
(Please enter the correct answer : **C**)

☐ a 100Hz ☐ b 500Hz ☐ c 1kHz ☐ d 2kHz

4. The frequency of a sinusoidal alternating voltage is 4kHz. The time for one cycle is:
(Please enter the correct answer : **B**)

☐ a 25μs ☐ b 0.25ms ☐ c 2.5ms ☐ d 25ms

1.12

Handing In Work



Once you have answered the final question in a piece of work, follow the steps below:

1. The Base Unit displays:
Hand In (Y/N)?
End of Chapter. Press 'Yes' to hand in, 'No' to return to Chapter.
2. Press the **Yes** key to hand in the work, or press the **No** key to cancel the action.
3. You may also hand in partially completed work by pressing the **Options** key and selecting the 'HAND IN Chapter' command.
4. Once the work is handed in, the console displays a message, followed by the scores attained for each work section. Press any key to clear each message.

The Base Unit will display the most likely command in the options menu. You now have the option to load another piece of work or log off and close down.

To load a new piece of work, follow the steps detailed in section 3.4 of this tutorial document.

1.13

Closing Down

To finish the current session at any time:

1. Press the **Options** key and select the 'FINISH Session' command.
2. If you currently have work loaded, the Base Unit will suspend it in its current state.
3. Do *not* switch off the unit until the Base Unit displays:
Switch off / Restart
You may now switch off. Press any key to restart.

1.14

General Conventions

*Base Unit*

Select / Call Switch	Calls the Instructor for help.
Options Key	Calls up the Options menu of the Base Unit
Selection Arrows	Enable you to scroll through the Options menu and questions.
Cancel Key	Cancels the current action or clears a question response.
Enter Key	Enters information to the Base Unit.
Keypad	Alphanumeric and Yes/No response keys.
Display	Displays headings, instructions, questions and answers.

Options Menu

FINISH Session	Logs off a student in a class
NEXT Chapter	Request and start the next piece of work in the course.
SPECIFIC Chapter	Request and start a specific piece of work in the course.
HAND IN Chapter	Submit work to the management system for marking.
CONTINUE Chapter	Continue with the current work.
ABORT Chapter	Discard the current work.

General Terms

Class ID Number	A number used to identify a class of students.
Student ID Number	A number used to identify an individual student
Module Number	A number used to identify a lesson module
Suspended work	An incomplete piece of work that has been temporarily stored for completion later.

