PLATO® Courses

Computer Applications and Technology

Teacher's Guide

PLATO

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Computer Applications and Technology

Overview

PLATO Courses were developed to give the educator a variety of ways to engage different learning modalities and to give the learner an opportunity to experience a range of standards and objectives to ensure academic success.

PLATO Courses integrate PLATO courseware, offline learning activities, and interactive activities. An array of assessment tools allows the educator to correctly place students at the appropriate learning level, to evaluate strengths and needs, to create individualized learning goals, and to determine proficiency. Reports assist the learner in understanding where he or she needs to focus to be academically successful as measured against objectives. Guidelines and tools are provided to track student progress and to determine a final course grade.

PLATO Courses give the educator control over the instructional choices for individual learners as well as for the classroom. The educator may use all of the components as sequenced or select specific activities to support and enhance instruction. PLATO Courses can be used in a variety of ways to increase student achievement.

PLATO Courses contain newly created tutorials and explorations and may contain minimal or no pre-existing courseware.

PLATO Courses Components

Learning Activities—Two types of learning activities are available in the PLATO Computer Application and Technology Course:

- **Tutorials**—The tutorials are online activities with direct instruction and interactions such as drag-and-drops, multiple-choice questions, and fill-in-the blank questions that all help learners check their progress at mastering new concepts. Some tutorials also include web links to informational sites, games, and videos, which are designed to broaden learners' access to information on the topic. Each tutorial has optional read-the-screen audio for the main instructional text.

- **Explorations**—The explorations are offline activities that include a variety of activity types, including direct instruction, open-ended questions, fill-in questions, matching activities, and multiple-choice questions. The explorations include web links where appropriate that provide additional information on the topic at hand, as well as opportunities to engage in multiple forms of media, such as videos and games related to the concepts being taught. Each student activity in the explorations has an answer key that provides answers for single-answer questions and sample answers for open-ended questions. Answer keys can be used to check student work or can be given to students so they can check their own work. Some students may need guidance to successfully self-check open-ended questions against a model.

Learning aids assist the student within the courseware activities. In Computer Applications and Technology, these learning aids, or tools, include the following:

- **Tutorials**

  - **Notebook**—The Notebook is an online version of a paper notebook. Learners can take notes on important points, edit them, and refer to them to refresh their knowledge.

  - **Calculator**—The Calculator, which supports basic operations, is available in case learners do not have access to a handheld calculator.

Assessment and Testing—Best practices in assessment and testing call for a variety of tools to evaluate student learning. Multiple data points more accurately present an evaluation of student strengths and needs. Note that assessment items are available for each tutorial, exploration, and courseware lesson in PLATO Courses. In support of this model of evaluation, PLATO Courses include the following:

- **Unit pretests** are provided for each course unit. The purpose of these assessments is to determine the student's existing knowledge. If the student scores the prescribed percentage on a unit pretest, he or she may be exempt from completing the related courseware.

- **Unit posttests** help teachers track how well students have mastered the unit's content. The tests are multiple-choice and are provided online and offline.

- **Mastery tests** at the end of the tutorials and explorations provide the teacher and the student with clear indicators of areas of strength and weakness. These tests are taken online.

- The **Course Project** is a cumulative assessment that covers many of the course's learning outcomes and gives students an opportunity to synthesize the concepts of the course as they demonstrate their learning in the form of a project.

- **End-of-semester tests** assess the major objectives covered in the course. By combining the unit pretest and unit posttest information with the end-of-semester test results, the teacher will gain a clear picture of student progress.

Computer Applications and Technology Overview

Instructional Approach
Computer Applications and Technology is organized into units of lessons on related topics. It is designed to be completed in one semester. The course, as well as each unit in the course, is based on a researched scope and sequence that covers the essential concepts of computer applications and technology.

Instructional Strategies
Common instructional strategies include a structure that provides in-depth, individualized instructional time. Students will be presented with a variety of computer applications and technology concepts and will then demonstrate their understanding of those concepts through problem solving.

Computer Applications and Technology Pacing Guide

The Pacing Guide provides a general time line for presenting this unit. This guide is designed to fit your class schedule and is adjustable.

Unit 1: Introduction to Computers

Summary
This unit covers approximately two weeks of instruction. It provides an overview of the parts of a computer and the basic tasks performed on a computer. In this unit, the student will determine the purpose and functions of a computer's input devices, output devices, hardware components, operating system, and software applications. This unit also demonstrates basic computer tasks such as managing folders and files and maintaining a computer.

Day	**Activity/***Objective*	Type
1 day: 1	**Syllabus and Plato Student Orientation** *Review the Plato Student Orientation and Course Syllabus at the beginning of this course.*	Course Orientation
1 day: 2	**Computer Accessories** *Recognize and discuss the use of computer accessories.*	Tutorial
1 day: 3	**Computer Hardware** *Recognize the hardware components of a personal computer and summarize each component's purpose.*	Exploration
2 days: 4–5	**Operating Systems** *Describe the purpose of operating systems and demonstrate the use of key functions.*	Tutorial
1 day: 6	**Application Software** *Explore the functions and uses of different types of application software.*	Tutorial
2 days: 7–8	**File Management** *Perform basic file management tasks.*	Tutorial
2 days: 9–10	**Computer Maintenance** *Summarize and list priorities for computer maintenance.*	Tutorial
1 day: 11	**Posttest—Unit 1**	Assessment

Unit 2: Getting Connected with Technology

Summary
This unit covers approximately two weeks of instruction. It illustrates the use of computers in our everyday lives. Students will explore online tools and resources to search the Internet, send email, and connect with people. The unit will explore the advantages and disadvantages of using computers and how computers have influenced society in recent times.

Day	**Activity**/*Objective*	Type
3 days: 12–14	**Searching the Internet** *Demonstrate how to search the Internet to find research information.*	Exploration
2 days: 15–16	**Electronics Communities** *Compare and contrast the purposes and benefits of commonly used electronic communities.*	Tutorial
2 days: 17–18	**Using Email** *Demonstrate the use of email and recognize appropriate and safe uses of email.*	Tutorial
2 days: 19–20	**Computers in Society** *Describe the impact of computers in today's society and related social issues.*	Tutorial
1 day: 21	**Posttest—Unit 2**	Assessment

Unit 3: Word Processing

Summary
This unit covers approximately four weeks of instruction. In this unit, students will work with word-processing software and its key components, and they will perform basic manipulation functions. Students will demonstrate how to create, modify, and print a document, as well as how to use various text editing and formatting tools. The unit explores how to track changes in a document and how to add, edit, and remove comments. It also explains how to create and format a table and insert and format images or graphics in a document. Students will explore reference tools, such as footnotes and endnotes, design a title page for a research paper, and demonstrate how to save a document as a webpage.

Day	**Activity**/*Objective*	Type
1 day: 22	**Introduction to Word Processing** *Perform basic functions using a word processing application.*	Tutorial
3 days: 23–25	**Creating and Formatting Documents** *Demonstrate the ability to set up and format documents.*	Tutorial
3 days: 26–28	**Editing Documents** *Demonstrate the ability to edit documents.*	Exploration
3 days: 29–31	**Tracking Changes in Documents** *Demonstrate the ability to work with track changes and inserting comments.*	Exploration
3 days: 32–34	**Creating Tables in Documents** *Demonstrate the ability to create and modify basic tables in documents.*	Exploration
3 days: 35–37	**Graphic in Documents** *Demonstrate the ability to insert and format graphics in documents.*	Exploration
3 days: 38–40	**Creating Research Papers** *Illustrate how to create and print a 2-3 page research paper utilizing the Internet as one research source.*	Exploration
1 day: 41	**Posttest—Unit 3**	Assessment

Unit 4: Spreadsheets and Databases

Summary
This unit covers approximately three weeks of instruction. In this unit, students will explore the types of documents that are appropriate to create using spreadsheet software and work with spreadsheet software and its key components. They will also perform basic spreadsheet manipulation functions. This unit illustrates creation, naming, and formatting of a worksheet and how to create and insert simple formulas and functions. It covers how to create, modify, and publish charts, as well as how to integrate spreadsheet data into word processing and presentation documents and sort and filter fields in a table. This unit also addresses the benefits of storing information in a database.

Day	Activity/*Objective*	Type
1 day: 42	**Introduction to Spreadsheets** *Identify the components and basic functions of a spreadsheet application.*	Tutorial
3 days: 43–45	**Formatting Spreadsheets** *Demonstrate the ability to format and print spreadsheets.*	Tutorial
3 days: 46–48	**Formulas and Functions** *Illustrate how to use formulas and functions in a spreadsheet.*	Exploration
3 days: 49–51	**Displaying Data in Charts** *Demonstrate how to collect, organize, and present numerical data to create, edit, and print charts.*	Exploration
3 days: 52–54	**Integrating Spreadsheet Data into Other Applications** *Integrate spreadsheet data and graphs into other applications.*	Exploration
3 days: 55–57	**Sorting and Filtering Data** *Illustrate how to sort and filter fields in spreadsheets.*	Exploration
1 day: 58	**Posttest—Unit 4**	Assessment

Unit 5: Presentations

Summary
This unit, which covers approximately four weeks of instruction, will familiarize students with presentation software and its key uses. Students will discover how to create effective presentation documents and determine the formatting. They will also explore how to use images, sounds, and animations in presentation documents, as well as gain familiarity with drawing and flowchart tools. This unit shows students how to print and distribute a presentation, how to run a slideshow, and how to save the presentation as a web page. Students will use the information in this unit to develop and present their own electronic slideshow.

Day	**Activity/***Objective*	Type
2 days: 59–60	**Introduction to Presentation Software** *Use electronic presentation applications to create and save a presentation.*	Tutorial
3 days: 61–63	**Editing Presentations** *Edit and format presentations properly.*	Tutorial
3 days: 64–66	**Slide Show Presentation Guidelines** *Recognize effective style and design rules when creating a presentation.*	Tutorial
3 days: 67–69	**Multimedia Effects** *Illustrate how to add multimedia effects to presentations.*	Exploration
3 days: 70–72	**Drawing Tools** *Demonstrate the use of drawing tools to create flowcharts and visual aids.*	Exploration
3 days: 73–75	**Creating Presentations** *Demonstrate various ways to present and publish a presentation.*	Exploration
3 days: 76–78	**Delivering Presentations** *Create a presentation following various presentation and publication methods and guidelines.*	Exploration
1 day: 79	**Posttest—Unit 5**	Assessment

Course Project: Computer Applications and Technology

Summary
The course project is designed to take approximately one week. Because the activities included in the project relate directly to many of the course objectives, it is possible to assign the project to be worked on incrementally during the semester.

Day	Activity/*Objective*	Type
8 days: 80–87	**Course Project**	Offline
1 day: 88	**Semester Review**	
2 days: 89–90	**End-of-Semester Test**	Assessment