

TI-83 Plus Decimal Defender

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What is the Decimal Defender Application?

The Decimal Defender application lets you practice multiplying and dividing numbers by powers of 10 in a fun setting. This number sense skill is a foundation for learning multiplication and division algorithms, as well as helping students to understand topics such as scientific notation, the metric system, and more.

In the Decimal Defender application, your space ship encounters decimal numbers while exploring a strange and distant galaxy. To find your way past the decimal numbers, you must solve multiplication and division problems, and then fire the decimal point into the numbers. You have to solve 10 problems to make your way back to Earth.

The Decimal Defender application is a concept application that TI wants to share with our customers, educators, and students before the product definition and testing are complete. It is an alpha software version, and as such, it may contain imperfections, or the coding may be incomplete.

TI invites your feedback concerning the functionality and educational value of the Decimal Defender application. Please send your comments and questions to concept@list.ti.com.

What You Need

Note

In this user guide, any information that pertains to the TI-83 Plus also pertains to the TI-83 Plus Silver Edition, unless otherwise noted.

Hardware and software	Notes
TI-83 Plus or TI-83 Plus Silver Edition with version 1.14 or higher of the operating system software	You can download a free copy of the operating system software from education.ti.com/softwareupdates . Follow the link to Operating Systems.
Computer with Microsoft® Windows® 95/98/2000, Windows NT®, or Apple® Mac® OS 7.1 or higher installed	
TI-GRAPH LINK™ computer-to-calculator cable	If you do not have this cable, call your distributor, or order the cable from TI's online store .
TI™ Connect software. TI Connect works with all supported models of Flash-based TI graphing calculators. —or— TI-GRAPH LINK software that is compatible with the TI-83 Plus	You can download free copies of TI Connect and TI-GRAPH LINK software from education.ti.com/softwareupdates . Follow the link to Connectivity Software.

Where to Find Installation Instructions

Detailed instructions on installing this and other applications are available at education.ti.com/guides. Follow the link to Flash installation instructions.

Getting Help

The instructions in this guidebook are only for this application. If you need help using the TI-83 Plus, refer to its comprehensive guidebook at education.ti.com/guides.

Starting and Quitting the Application

Starting the Application

1. Press **[APPS]** to display the list of applications on your TI-83 Plus.
2. Select **DecDfend**. The application's information screen is displayed.
3. Press any key to continue. The developer's screen is displayed.
4. Press any key to continue. The instructions for using the application are displayed on the next three screens.
5. Press any key to display subsequent instruction screens. The SELECT AN OPERATION menu is displayed.

Note

The application instructions are only displayed the first time you run the application. To display the instructions again, select **Instructions** from the SELECT AN OPERATION menu.

Quitting the Application

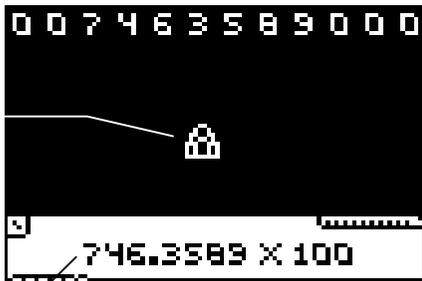
From the SELECT AN OPERATION menu, select **QUIT** or press **[2nd]** **[QUIT]** until the home screen is displayed.

Playing the Game

Before you can play the game, you select the operation type for the problems that will be presented in the game – **Multiplication**, **Division**, or **Both** multiplication and division.

On the game screen, the problem is displayed at the bottom of the screen. Your ship, in the middle of the screen, points toward digits at the top of the screen. You insert a decimal point between two digits to solve the problem.

Your ship fires the decimal point into the digits above to create your answer.



Problem to solve

To play the game, use the arrow keys to move the ship to the location where the decimal point should be to solve the problem, and fire a decimal point from the ship.

1. From the SELECT AN OPERATION menu, select **Multiplication**, **Division**, or **Both**. The game screen is displayed.



2. Press \leftarrow or \rightarrow to move the ship to the correct location for the decimal point, and then press \uparrow to insert the decimal point.



The application verifies your solution and displays **Correct!** or **Incorrect!** before displaying the next problem.

Tip

- If your answer was correct, the digits fade away.
- If your answer was incorrect, the digits fall to the bottom of the screen and smash your ship. You can see where the decimal point should have been inserted as the digits fall.

After you have answered 10 problems, your score is displayed, along with the top three high scores for the game that have been played on your TI-83 Plus.

3. If your score is a high score, enter your initials at the cursor location, and then press **ENTER**. (Alpha-lock mode is already turned on.)

Tip

You accumulate points for your combination of speed and accuracy, as well as the difficulty of the operation. More points are awarded when the operation is **BOTH** than when it is **MULTIPLICATION** or **DIVISION**.



```
Your score: 4420
You have a high score!

High Score:
1. EFS 4420
2. MSP 2040
3. RHM 520
```

Deleting the Application

1. Press **[2nd] [MEM]** to display the MEMORY menu.
2. Select **Mem Mgmt/Del**.
3. Select **Apps**.
4. Move the cursor to **DecDfend**.
5. Press **[DEL]**. A confirmation message is displayed.
6. Select **Yes** to delete the application.

Installation Error Messages

Low Battery

Do not attempt to download a Flash application if the low-battery message appears on the home screen. Low battery indication is shown on the initial screen. If you receive this error during an installation, change the batteries before trying again.

Invalid Signature or Certificate

Either this calculator does not have a certificate to run the application, or electrical interference caused a link to fail. Try to install the application again.

Error in Xmit

This problem is usually associated with the unit-to-unit cable and its connection between the calculators. Make sure the cable is firmly inserted in the link port of each calculator.

Link Transmission Error

This error indicates that the TI™ Connect or TI-GRAPH LINK™ software is unable to communicate with the calculator. The problem is usually associated with the TI-GRAPH LINK cable and its connection to the calculator or to the computer.

- Make sure the cable is firmly inserted in the calculator link port and the computer.
- Verify that the correct cable type is selected in the software link settings.
- Verify that the correct communications port (Com Port) is selected in the software link settings.

Archive Full

This error occurs when the TI-83 Plus does not have sufficient memory for the application. In order to make room for another application, you must delete an application or archived variables from the TI-83 Plus. Before you delete an application from the TI-83 Plus, you can save it on your computer using TI Connect software or TI-GRAPH LINK software for the TI-83 Plus. You can reload it to the TI-83 Plus later using TI Connect or TI-GRAPH LINK software.

Other Errors

See pages B-6 through B-10 in the [TI-83 Plus manual](#) for information about the specific error.

Checking Version Numbers and Free Space

Verify Operating System Version and ID Number

The Decimal Defender application is compatible with the TI-83 Plus operating system 1.14 and higher.

To verify your operating system version number:

1. From the home screen, press **2nd** **[MEM]**.
2. Select **ABOUT**.

The operating system version number is displayed below the product name and has the format x.yy. The ID number appears on the line below the product number.

Verify Flash Application Version

The version number appears on the information screen below the application name. To display the information screen, do one of the following:

- Press **[APPS]**, and then select **DecDfend**.

—or—

- Select **INFO** from the SELECT AN OPERATION menu.

Check Amount of Flash Application Free Space

1. From the home screen, press **[2nd]** **[MEM]**.
2. Select **Mem Mgmt/Del**.

The Decimal Defender application requires at least 16,384 bytes of ARC FREE (Flash), or one space, to load the application.

For more information about memory and memory management, refer to the [TI-83 Plus manual](#).

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