



MathPad for Macintosh Workshop Tutorial



Introduction

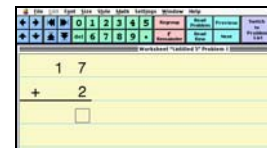
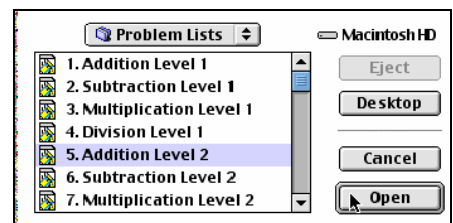
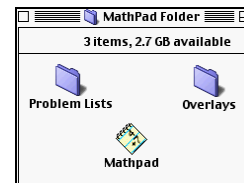
MathPad is an ideal tool for students who have difficulty writing math computations with pencil and paper. Students use MathPad to solve basic addition, subtraction, multiplication and division problems directly on the computer. The National Council of Teachers of Mathematics (NCTM) promotes math computation as a way of understanding how to construct number meanings from real life situations. MathPad allows students to practice math computations, enter math algorithms and solve them independently. Only one problem is presented at a time to avoid distractions. Using this tutorial you will explore the features that allow students to successfully access MathPad to enter math problems and check their work using the regular keyboard, mouse, IntelliKeys or a switch.

Getting Started

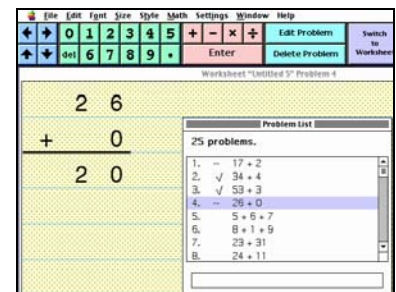
MathPad ships with 12 sample Problem Lists organized according to the level of difficulty. You will start by exploring the sample files and then create your own problem list.

1. Opening a Sample Problem List

- Locate the MathPad Folder. Inside the folder are overlay files if you wish to reprint or customize overlays for your students, a folder with pre-made Problem Lists where you can also develop individual student files and the MathPad application.
- Double Click to open the MathPad application.
- Go to the **File** menu and select **Open Problem List**. Choose Addition Level 2.
- Go to the **Settings** menu, verify that **Auto-Navigation** is checked.
- Using the mouse and regular keyboard enter the answer to the problem. Notice that the cursor automatically moves to the left after a number is entered due to the Auto-navigation setting.
- Note the Toolbar on the top of the screen.
- Select **Next** to go answer another problem. Answer the next 5 problems. Be sure to answer some problems correctly and some problems incorrectly.
- To check your answers select **Switch to Problem List** from the Toolbar. To check your work, correct problems have a check mark ✓ and incorrect problems have a dash -.



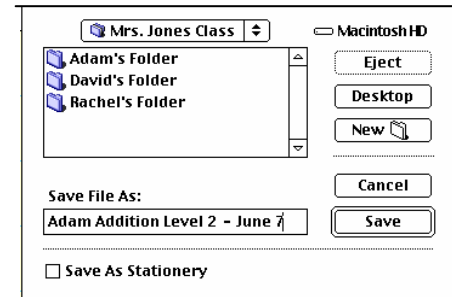
Toolbar



2. Saving Files for Student Portfolios

This file was originally saved as Stationery. Stationery files always open as 'Untitled' so each student can be presented with the same list and renamed by the user. Files can be stored inside the student's folder, to build a portfolio for each student.

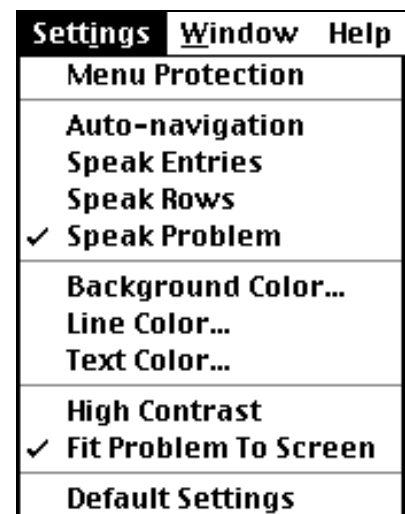
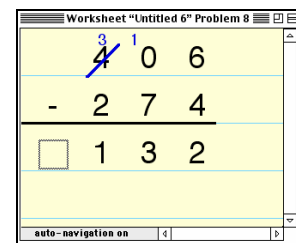
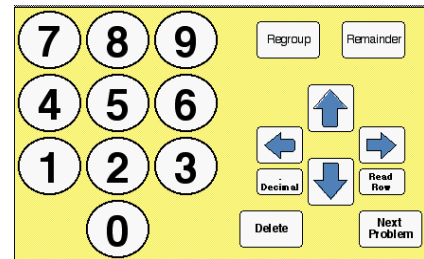
- Go to the File menu and choose **Save** or **Save As**.
- Choose **New** and create a new folder for your class and for each student. Name your file so you can identify the content, and save the file inside the student's individual folder.



3. Using the MathPad Regular Overlay

MathPad ships with a dual sided overlay. The Standard or Regular Overlay allows students to input answers and go to the next problem. The other side, Advanced Overlay allows students to enter their own problems and check their answers independently. You will access MathPad using the both overlays. More complex problems require students to regroup. You will explore the navigation feature of MathPad that assists students as they learn to regroup when they borrow and carry numbers.

- Go to **File** and select **Send Overlay**. Choose **Regular Overlay** and select **Open**. Place the Standard Overlay on IntelliKeys.
- Go to File and select **Open Problem List**. Choose Subtraction Level 3 and click on **Open**. This list has problems that require students to regroup.
- Choose **Switch to Problem List** and choose problem number 8. Use the overlay to solve this equation. After you put in the '2' for the ones column the highlight box moves to the left.
- Since you can not subtract from 7 you will need to regroup. Press the **Regroup** key on your overlay.
- Notice that the student is prompted through the regrouping process. Press 3 and complete the problem.
- Students can also use the arrow keys to regroup. Go to the **Settings Menu** and turn off **Auto-Navigation**. The check mark will disappear.
- Go to the Math menu and choose **Reset Problem**.
- Complete the ones column, 4 from 6 is 2. Use the arrow keys on the overlay to move to the number 4. Press **Regroup** on the overlay and complete your problem.
- Select the **Settings Menu**. Explore the options available for customizing the visual and auditory feedback. Auditory feedback ranges from speaking the entire problem to no feedback at all. Try each of the options as you work on the next few problems.



4. Using the MathPad Advanced Overlay

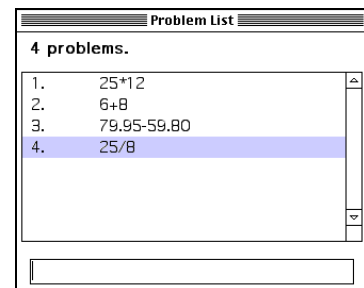
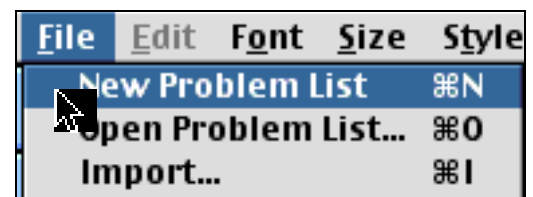
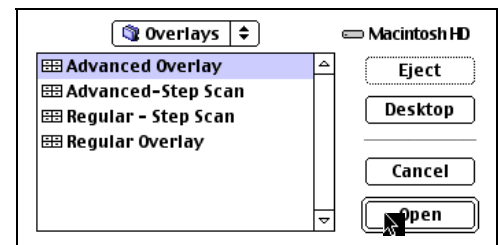
The MathPad Advanced Overlay is on the flip side of the Standard Overlay. Once this overlay is sent to the IntelliKeys, the user has access to the Problem List Window. This overlay enables students to enter their own problems. You can also enter problems using a mouse and the keyboard, or a switch.

Students often are asked to solve word problems and need to create the math equations on a separate piece of paper. MathPad provides the work environment for creating and solving custom math equations. Using the MathPad Advanced Overlay you will create the equations and solve the following special MathPad problems.

Using MathPad, create the equations and answer the following questions.

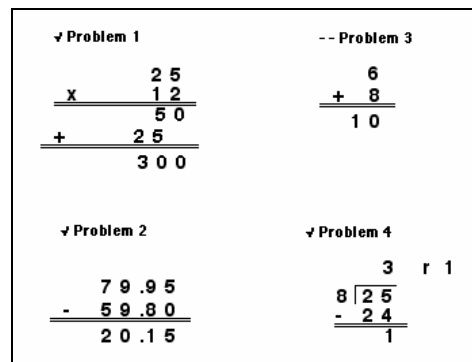
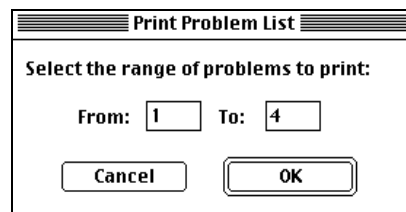
- *MathPad includes 12 Sample Problem lists. Each list has 25 problems. How many sample problems are there all together?*
- *IntelliTools has keyguards for each of the six standard IntelliKeys overlays. The regular MathPad overlay is designed to work with the Numbers Keyguard and the MathPad Advanced Overlay can be used with the Alphabet Keyguard. There are also 8 keyguards for custom designed overlays. How many keyguards are available all together?*
- *MathPad sells for \$79.95 a single copy. A Five Pac is \$299 or \$59.80 per copy. How much money do you save on each copy of MathPad when purchased in the Five Pac?*
- *Only one problem is viewed at a time. You can print from 1 to 8 problems per page, corrected with all work shown. If you choose 8 problems per page, how many pages will it take to print 25 problems?*

- Go to the **File** Menu. Select **Send Overlay**.
- Choose the **Advanced Overlay** and click **Open**. Turn the Overlay to the side that says Advanced.
- Go to the **File** Menu and select **New Problem List**. This will open a new file for entering these math equations.
- Use the number keys on the overlay to enter 25x12. After you input the numbers for each equation, select **Enter** on the overlay.
- If you make a mistake press the **Edit Problem** key to change the currently selected problem on the Problem List.
- To complete the computations, use the arrow keys to go to the first equation. **Press Switch to Worksheet** on the overlay.
- Complete the computations and check your work using the Overlay. *Note: The double arrows on the Toolbar and overlay allow you to quickly go to the top or bottom of the page.*
- Students can complete their computation and then use IntelliTalk to write about their findings in their daily math journal.



Printing Options

- MathPad allows you to print just the problems accomplished each day. You decide the range of problems to print. If the student has only done 3 problems you can print problems 1-3. The next day you might choose to print problems 4 to 8.
- If you are connected to a printer while using this tutorial you can go to File and choose to print a selected number of problems. Go to **File** and choose **Print**. Notice that you can decide the range of problems to print.
- The sheet of work printed includes all of the student's work and a check if the problem is correct. If the problem is correct then there is a checkmark \checkmark , if incorrect there is a dash -.



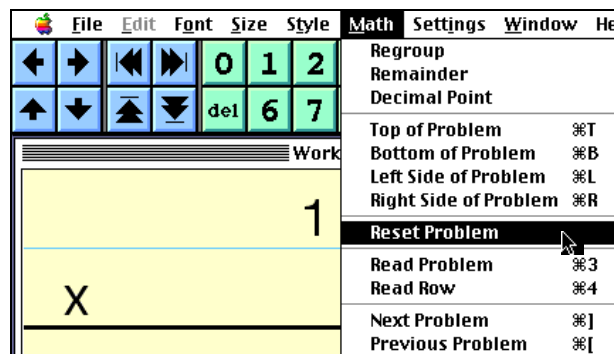
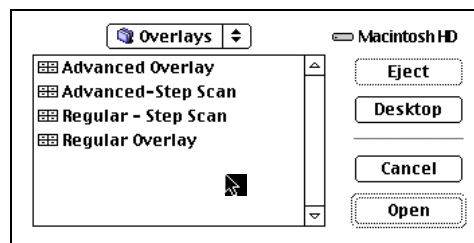
Using MathPad with a Switch

MathPad is designed to work with automatic scanning, as well as with Step Scanning. The overlays already have the switches defined for scanners with either automatic scanning or Step Scanning. This allows students to work collaboratively in an inclusive setting. The overlays have switch content defined.

MathPad Toolbar



- Go to the File menu and select **Send Overlay**. Choose **Regular Overlay** and click on **Open**. This overlay and the Advanced Overlay are setup for Automatic Scanning. There are two other overlay set-ups with the option for Step Scanning.
- Use the **Reset Problem** feature found under **Math** Menu at the top of the screen to reset one of the problems you have completed.
- Go to the **Settings** menu and select **Auto-navigation** or choose **Default Settings**.
- Press a switch attached to the IntelliKeys and solve the problem. Change the speed of the scan by pressing a number from 1 (slowest) to 9 (fastest) on the standard computer keyboard. The default is about 6. Hit the Escape (esc) key on the standard keyboard to stop scanning.



InfoUse developed MathPad in association with The Center for Accessible Technology and in collaboration with IntelliTools. Funds for this project were made available by the National Institute of Child Health and Human Development. MathPad is available for both Macintosh and Windows.