SmartStep User Manual

What Is SmartStep?

SmartStep is an educational multimedia software program that helps K-5 students learn and practice basic math skills. Similar to hopscotch or jump rope, this application uses physical activity to reinforce basic math skills (like skip counting); while honing motor skills, pattern recognition, rhythm and coordination. The software uses a dance pad as an input device.

SmartStep allows teachers to create student rosters and develop unique math exercises; and allows teachers to review student progress. The teachers' program shares a database with the students' program, so lesson plans can be targeted to individual students or groups of learners. The database saves games, manages logins, and records student performance data.

SmartStep is fun for students to use, and therefore increases the time they spend solving math equations. The physical exercise they get from using SmartStep is also beneficial!

SmartStep - Setting Up

What you will need:

A dance pad with a USB connector; or an adapter that switches the video game connector (such as a PlayStation2 connector) of the dance pad to a USB port on your computer.

* *SmartStep has been tested successfully with the MadCatz Beat Pad for PS2 (http://www.madcatz.com) and the SmartJoy Plus USB adapter (http://www.smartjoy.com)*. The cost of this hardware (combined) is around $30 - $35.

You'll need a computer (with a CD-ROM drive and a free USB port) running XP or OS X. The SmartStep software takes up about 22MB of disk space.

You will not need any 3rd party software or drivers to recognize the dance pad. SmartStep has the drivers built-in; it's plug-and-play!

Installing the Software:

1. Insert the SmartStep CD into your CD-ROM drive.

2. Copy the **SmartStep** folder to your hard drive. This is so teachers can save the games they create to the local hard disk, and so that student sessions can also be recorded.

3. Create shortcuts for the 2 program files (inside the SmartStep folder) if you wish:

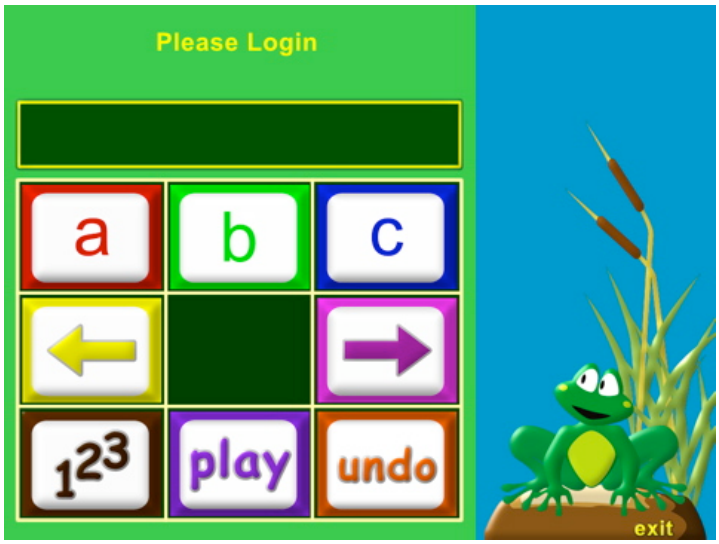
- **SmartStepStudent.exe**
- **SmartStepTeacher.exe**

4. Move the 2 aliases to the desktop. From now on, teachers can start the programs from these desktop icons.

***Important Note* - The contents of the SmartStep folder should always be kept together in a single directory, as they were on the CD.** The software relies on relative paths to the multimedia content and to the database. Moving the files will break those links.

***Troubleshooting (XP)* -** You can check to see if the hardware is working properly, and if it has been recognized by your PC, by plugging the dance pad into a USB port, choosing the **Start** menu, and selecting **Control Panel**. Select **Game Controllers** from the list. In the resulting dialog box, you should see the **SmartJoy Plus USB Adapter** highlighted in the list. Choose the **Properties** tab and select **Test**. You should see the number keys light up as you step on the dance pad, or you should see the cross-hair cursor move up and down or side to side as you step on the arrow buttons on the dance pad. If the pad or the adapter are not recognized, check your connections, and maybe try a different USB port. XP "chimes" when it scans and finds a new hardware device plugged into one of its USB ports. It also "chimes" when the pad is disconnected.

** Other USB devices that are also plugged in, such as printers, do not appear to interfere with SmartStep. However, devices that are similar to SmartStep, such as joysticks, should be unplugged.*



SmartStepStudent login screen

SmartStep Student Game

Before you launch **SmartStepStudent.exe**, plug in the dance pad. If you don't the program will ask you to plug it in, and when you click **OK**, it will quit. If SmartStep doesn't automatically quit, click the **exit** button in the lower right corner of the screen, plug in the dance pad, and relaunch SmartStepStudent.exe by double-clicking on it.

SmartStepStudent game interface

Playing the Game

1. To start, **double-click on SmartStepStudent.exe**. The student should step onto the middle square of the dance pad.

2. The student must first sign in with a login code assigned by the teacher (described in the next section). **The default login is "student".** SmartStep ships with a couple of example games associated with this login.

• To 'type' in your login code, step on the dance pad spaces corresponding to the letters as shown on the screen. **Use the left and right arrow keys on the dance pad to scroll through the alphabet**.

• If you need to 'type' in numbers, step on the lower left square on the dance pad (labeled on screen as "**123**"). To change back to letters, step on the same space (now labeled "**abc**" on screen). Use the left and right arrow keys on the dance pad to scroll through the numbers (0 - 9).

• If you make a mistake, step on the lower right dance pad square (labeled "**Undo**" on screen) to erase the last character in the input field.

• When you are done logging in, step on the lower middle square of the dance pad (the "**Play**" button on screen).

3. When the student signs in, the program retrieves a 'playlist' containing math problems assigned by the teacher. If there is no playlist, an error screen will appear, telling the student to inform the teacher that the playlist is empty. Students answer the equations presented on screen by stepping on the square of the dance pad that corresponds to the answer on screen.

4. The equation to be solved is presented in a field above a grid with eight possible answers, corresponding to the eight buttons on the dance pad. To the right of this grid are three frogs. The top frog is the **Timer frog**, showing how much time is left in the game. The water behind him rises as time runs out. Below the Timer frog is the **Correct Answer frog**, who shows the score for correctly answered questions. In the bottom right of the screen is the **Incorrect Answer frog**, who shows the tally of incorrect answers in the game. The game is over when all the questions have been answered or time runs out.

5. When the game is finished, the student's score will appear on a summary screen. The screen displays the score for correct answers, the score for wrong answers, and the time it took the student to complete the exercise. The results are stored in a database that the teacher can review later on. **Step on any space on the dancepad** (except the center) to start a new game. Students must log in each time they play the game.

6. Click on **Exit** in the lower right of the screen to end the program.

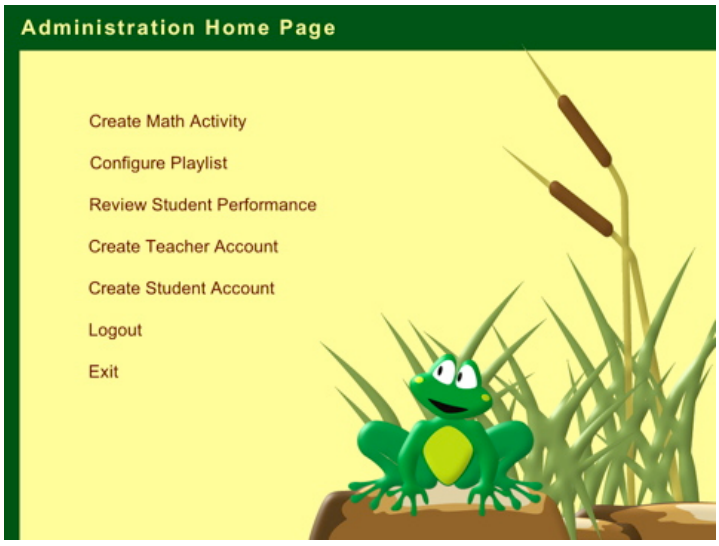
SmartStepStudent game summary screen

Scoring

1. For each correct answer on the first try the student gets 3 points. On subsequent attempts students get one point less on each try for a correct answer. After 3 tries the answer is highlighted on the game board on screen with a graphic of footprints.

2. For each incorrect answer on the first try the student is penalized 1 point. The penalty is incremented 1 point for each try up to three.

3. Time may run out on a student. Each set of problems has a total time for completion, set by the teacher. In the event of time exceeded, the score is recorded as of that point.



SmartStepTeacher main menu

SmartStep Teacher Interface

The Teacher's SmartStep program gets input from the keyboard and the mouse, and does not use the dance pad. Too bad the

students get to have all the fun!

1. To start, double-click on the **SmartStepTeacher.exe** program.

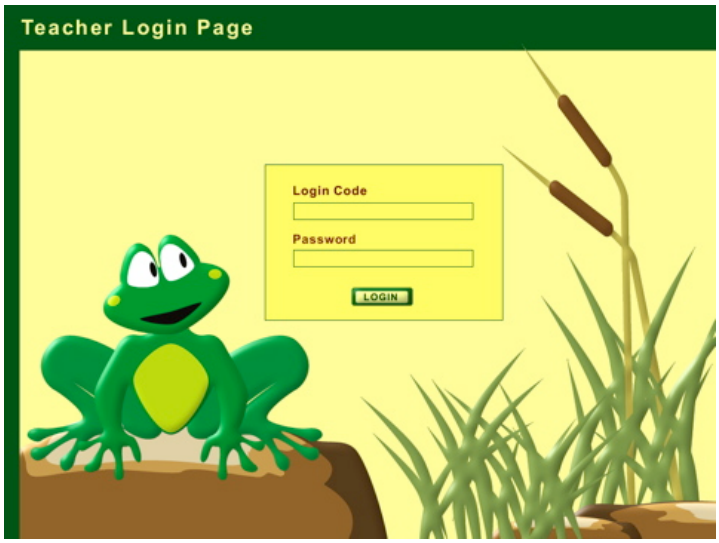
2. Anyone can create a **Teacher Account**. In fact, a teacher with different groups of students can create a different login code for themselves to address each group. An example might be: jones_1, for the teacher login for the 1st period class, and jones_2, for the 2nd period class. Different lesson plans can be associated with each login. ***Teacher login is required for all of the other options in this program (except Exit).***

• Select **Create Teacher Account** from the main menu. Think of a login code and password. The login code must be unique; the password can be anything. Make sure the login code and password are easy to remember. ***Passwords are case-sensitive; login names are not***.

• **The default teacher login code is "teacher"; and the password is "password".** SmartStep ships with a couple of example games associated with this login.

• Click on the blank text field before typing in your login code or password. Click the **Login** button when you are finished typing. (DO NOT type the Return or Enter key, as this will cause an error). SmartStep will confirm that the teacher account has been added to the database. If you wish to add additional logins, you can do so without returning to the main menu. When you are done adding teacher accounts click the **Home** button in the upper right corner of the screen.

• The password must be entered twice, just in case the teacher makes a mistake. If the two passwords do not match, you'll be asked to enter them again.



SmartStepTeacher login screen

3. After logging in, your login name will appear in the upper right of the screen. If you wish to use a different login, you may choose to **Logout** from the main menu.

4. Every teacher creates his or her own **Math Activities**. Select "**Create Math Activity**" from the main menu. If you are not logged in, you will be taken to the teacher login screen first.

• Enter a descriptive **Activity Name** for the new exercise (upper left corner of screen). We also suggest adding **Comments** (in the field below).

• The activity is defined by one or more **expressions**. A form for creating them is below the Comments field, and it is called **Specify and Add an Expression Template**. Expressions include the following:

• **Math operators**: addition (+), subtraction (-), multiplication (*) and division (/). They are alongside the numeric keypad on screen. Parentheses are used to indicate order of precedence in more complex equations, such as (4 * 5) - 2. Click on them to add them to the expression.

• **Literals**: numbers that are clicked on to add them to the expression, using the on-screen keypad.

• **Random numbers** are variables within a range of values. They are accessed by clicking on the **Range** button. SmartStep allows for up to three random variables in an expression! Or you can use three differently configured variables in three different exercises. They are labeled **R1**, **R2**, and **R3**. Click on them to add them to the expression. Click on the **Configure** button to set the range (high and low values of the variable). You can also choose to randomize the values returned (**Randomize**), or to only choose one randomly generated value (**Select Once**) by checking the appropriate box. When you've made your choices, click **Done** to return to the Expression Editor. Otherwise click **Cancel**. The choices you've made will be confirmed in a window in the upper right of the Math Activity screen, called **Number List Property**.

• **Counters** are numbers that start at a particular value, and then increase by regular increments specified by the teacher. They are especially useful in division problems, where you want to divide evenly. They are accessed by clicking on the **Counter** button. SmartStep allows you to use up to three counters in an expression! Or you can use three differently configured Counters in three different expressions. They are labeled **C1**, **C2**, and **C3**. Click on them to add them to the expression. Click on the **Configure** button to set the start value and increment value for each Counter. When you've made your choices, click **Done** to return to the Expression Editor. Otherwise click **Cancel**. The choices you've made will be confirmed in a window in the upper right of the Math Activity screen, called **Number List Property**.

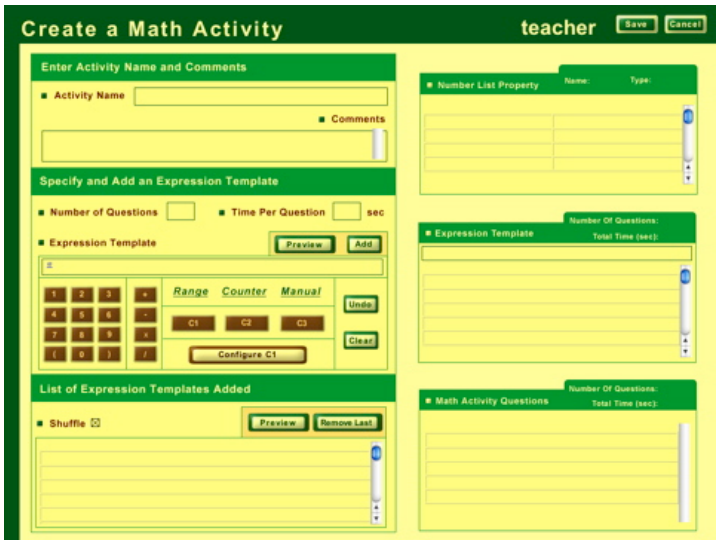
• A **Manual** list of values. They are accessed by clicking on the **Manual** button. SmartStep allows you up to three lists of numbers to be added to your expression! Or you can use three differently configured lists of numbers in three different equations. They are labeled **M1**, **M2**, and **M3**. These are specific numbers that will appear in the math problems. Click on M1, M2, or M3 to add them to your equation. Click on the **Configure** button to set the values for each of these lists. When you've made your choices, click **Done** to return to the Expression Editor. Otherwise click **Cancel**. The choices you've made will be confirmed in a window in the upper right of the Math Activity screen, called **Number List Property**.

• Create an expression, such as 2 * R1, which would be a basic exercise in doubling. Use the **Undo** button for mistakes, and the **Clear** button to erase the whole equation and start over. Enter the **number of questions** (for the exercise you're developing) that the student must solve. Enter the **time per question** (in seconds) allowed. This will calculate a total time for the game.

• The **Preview** button will show you what your expression will generate in a window to the right called the **Expression Template**. Click on the **Add** button. The expression will be added to a list below. You can have many expressions in one game! The **Shuffle** option, if clicked, will mix the order of problems from the multiple exercises you've added to the final game. Use the **Remove Last** button to take expressions out of the list.

• Click on the **Preview** button in the **Expression Template List** to see an example of the problems generated by the list. They will appear in a window to the right called **Math Activity Questions**.

• When you are done, click the **Save** button in the upper right corner of the screen. SmartStep will confirm your game has been saved. The **Cancel** button will delete the math activity you have been working on, and return you to the main menu.



SmartStepTeacher math activity creation screen

5. Every teacher also has a current **Playlist**. Select **Configure Playlist** from the main menu. If you are not logged in you will be taken to the teacher login screen first.

• The list on the right, called **Your List of Math Activities**, shows all of the math activities that a particular teacher has created. The currently logged in teacher's name is displayed in the upper right of the screen. Use the checkboxes to the left of the activities to select all of the math activities that you want to include in the current playlist. Only five activities are visible at one time, but the **Back** and **Next** buttons allow you to see all the activities you have created. Rolling the cursor over the title of a math activity will show the comments for it in the window below.

• When you click on the **Add** button the checked activities will appear in a list to your left, called **Your Current Playlist**. Select any activities you wish to delete from the playlist using their checkbox, and press **Remove**. The **Clear** button erases the entire playlist. The **Shuffle** checkbox, if selected, will randomize the order your activities are presented to the student playing the game. **Back** and **Next** show you additional exercises in your playlist. Below the playlist window is the **Playlist Preview** window. Click the **Preview** button to see examples of the questions generated by your playlist.

• Click on the **Save** button to save this playlist. SmartStep will confirm that your playlist has been updated. The **Cancel** button will leave your playlist as it was before, and will return you to the main menu.

SmartStepTeacher playlist editor

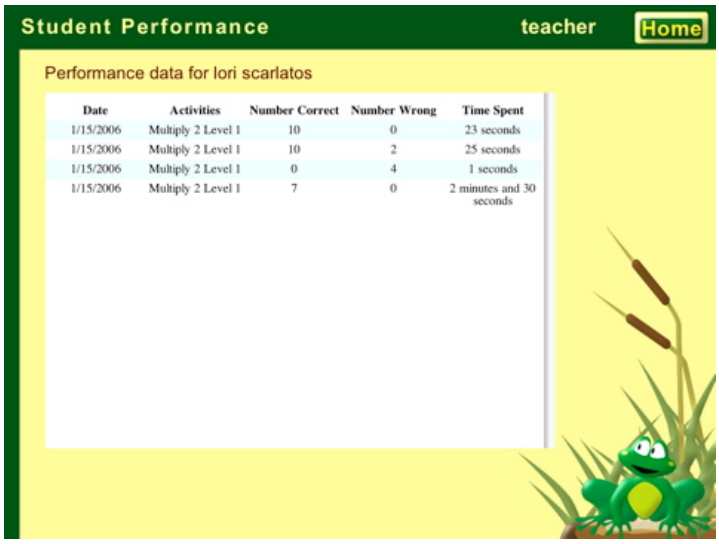
6. A **Student Account** must be created for every student that you wish to keep track of. Students may also sign in as "student" for anonymous use. Select **Create Student Account** from the main menu. If you are not logged in you will be taken to the teacher's log in screen first.

• When you create a **Student Account**, that student will be associated with the teacher indicated in the upper-right corner of the screen, and will be given the current "playlist" for that teacher. **Make sure the student has the correct teacher assigned!** Select **Create Student Account** from the main menu.

• Pick a **student login** that is easy to remember AND to type. The student's initials might be a good choice. Just remember that all student logins must be unique. Login names are not case sensitive.

• The **student name** that you enter will be used later for reviewing performance data. So the student's first and last name is probably a good choice.

• Click **Create** to establish a record for that student in the database. SmartStep will confirm that the student has been added. You can now type in another student login and name and click Create again. You do not have to return to the main menu until you are finished entering student names. Click on the **Home** button in the upper right to return to the main menu.



SmartStepTeacher student record review

7. You can review the performance of your students at any time. Select **Review Student Performance** from the main menu. If you are not logged in you will be taken to the teacher login screen first.

• A list of the current teacher's students will appear. Click on the name of the student that you wish to review.

• The resulting table shows all of the dates that this student has signed in and played with SmartStep. If the list gets too long, you can use the scroll bar. The table will list the math activities that the student practiced, the number of questions they got correct, the number they got wrong, and the time it took them to complete the exercise(s). When you are finished reviewing the student's performance, click the **Home** button to return to the main menu.

8. Click on **Exit** at the bottom of the main menu to end the teacher's program.

Developed with research support from the National Science Foundation (CRCD grant #0203333)

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