

## Activity 15

## Switch access explained

A number of example grids have been made for switch access. It assumes that you are familiar with switch use and how switches are connected to a computer.

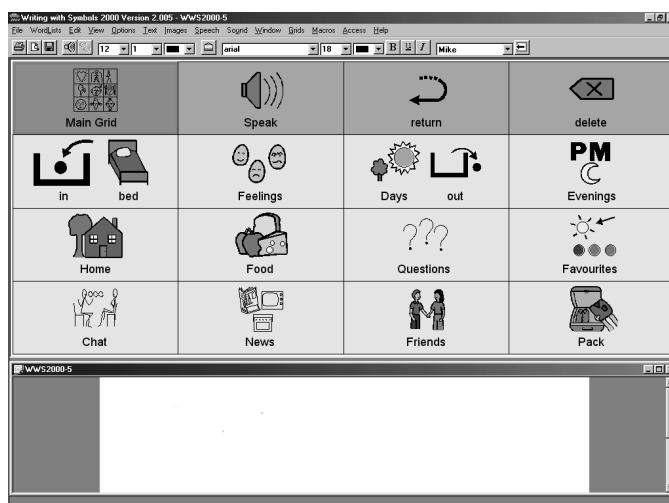
The first part of this activity will look at the switch menus and then relate these to two of the example switch environments. The next activity will show you how to create a switch environment with certain functions to aid navigation.

### 1. Looking at a simple switching environment

It will be assumed that you are familiar with switch scanning methods, and some way of connecting switches to your computer. There is an explanation of scanning in the WWS2000 manual, (Section F, Switch Reference Section).

Open WWS2000, and load the Wizard Environment **Communication**.

This activity is like a dynamic communication aid that also records the text/symbols selected.



The user will scan the grid, and when a cell is selected the grid will change to a topic grid. In the topic grids the cell contents are written to the small document at the bottom of the screen, and then the Speaker icon is selected the sentence is spoken.

### 2. Single or two switch scanning

There is a comprehensive section in your manual which describes different scanning methods. WWS2000 can operate on two switch scanning, where one switch controls the scanning cursor and the other selects, or on single switch scanning, in which the cursor automatically scans, and the user uses only one switch, to 'select' the cell required. Switch 1 refers to the switch that controls the scanning cursor, and switch 2 refers to the switch that makes a selection. If you are using single switch use, then you will need to use switch 2 as the active switch.

### 3. The switch access menu

The first step is to select the correct settings for the switch access you want to use. Or if you don't have switches connected, to select a keyboard alternative to emulate switches.

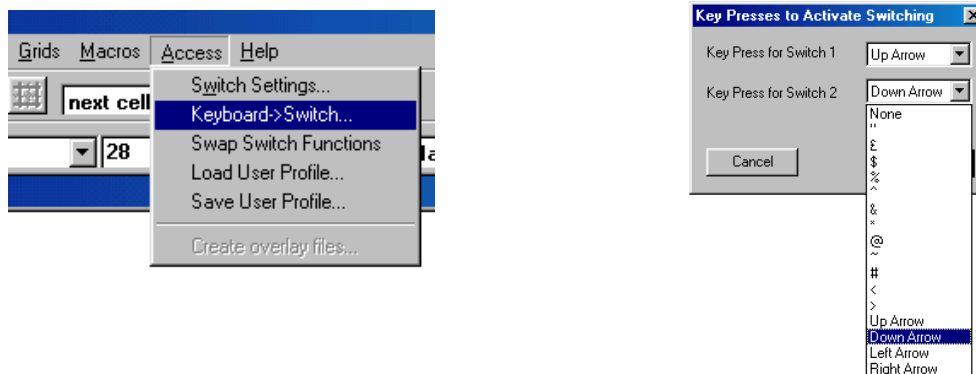
Switches can be connected to the computer in one of three main ways:

- (a) through an interface box connected to a serial (COM) port at the back of your computer, into which you can plug one or two switches.
- (b) through an interface which connects to the Keyboard socket of your computer into which you also plug your keyboard. Under this option two keys are designated to act as switches.
- (c) through a USB port. There are some switch interface devices that act as Joystick buttons. These connect via the USB port.

It is often useful to designate two keys as Keyboard Switch alternatives so that you can set up and test switching without needing to have an actual interface box and switches connected at the time.

### 4. Keyboard Alternatives

From the **Access** menu select **Keyboard > switch**. You will then be given a set of keys you can choose from to act as switch 1 and switch 2. In the example below the Up and Down arrows have been selected.

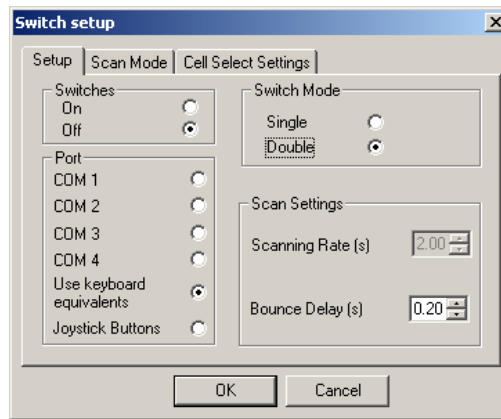


When switching is activated these keys will act as switches and so will not have their normal function. However, reverts back to the normal key function as soon as switching is turned off. For this reason in a word processing program like WWS2000 it is not possible to use the more common **Space Bar** and **Enter** keys as these are needed for writing.

Some keyboard devices will tell you which keys you should select for switch 1 and 2.

The next step is to set the other switch settings and to turn switching on.

From the **Access** menu select **Switch Settings**. There are three tabs: **Setup**, **Scan Mode** and **Cell Select** settings.



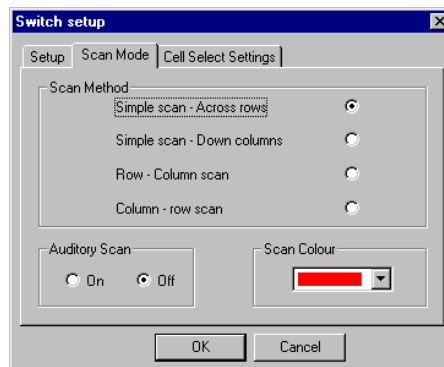
On the **Setup** tab there are 4 boxes: **Switches**, **Port**, **Switch Mode** and **Scan Settings**. Set up switch access as follows:

**Port:** Set the way in which you are connecting your switches. COM1 and COM2 are the most common serial connections. COM3 and COM4 are greyed out on the example above because that computer only had two COM ports available, which is quite common. There is also a setting for USB devices which act as Joystick buttons.

If you are using keys or a keyboard device you should select **Use Keyboard** equivalents.

**Switch Mode:** Select if you are using single or double switch scan. If you select Single switch scanning you will need to set **Scan Settings**: the **Scan Rate** and the **Bounce Delay**. (The bounce delay is a means of reducing the effect of switches with poor contact or a user with a tremor)

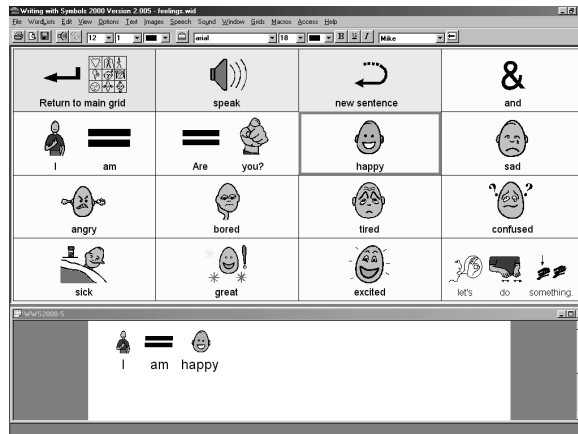
Next, select the **Scan Mode** tab



Choose the type of scanning you want. In grids with a small number of cells it makes sense to choose simple scan, the example **Communication** has large grids which would be suitable for simple or row and column scanning. If you choose simple scanning you can select whether this is across rows first or down rows.

You can also choose the colour of the scanning cursor, and whether you want auditory scanning. When auditory scanning is on you will hear the text from each cell as the cursor passes over it. Switch **Auditory Scan** on now so that you will also see how that works.

Finally return to the **Setup** tab and switch scanning on.



Try out the switch settings you have created, and maybe try changing them so that you are quite familiar with the main settings.

You can turn the switches on and off quite easily while you are working by pressing **CTRL+Y** instead of going to the **Access** menu. **CTRL+Y** is a toggle, which turns the switches on and off. This is useful if you have different people using the computer at the same session. You should also turn switching off while you make any changes to the grid.

## 5. Saving your switch settings

You may want to have different settings for different users or different environments. The switch settings described above are not saved with the environment but are set up at the time of use. You may want to save these settings for a particular user.

There are two different ways in which you can save switch settings:

- a) If you nearly always want the same switch settings, for example if one student regularly uses the same machine, you can simply use **Save Settings Now** from the **Options** menu. The program will then use these settings each time it is loaded.
- b) You can also save **User Profiles**. The idea of User Profiles is to enable the switch settings for a particular switch user to be saved and loaded each time they come to use the program. This saves time, as the settings do not need to be reset each time they use the program. The User Profile must be saved using a unique identifier such as the switch user's name and this is then loaded. The User Profiles only refer to Switch access preferences. Other preferences are saved in the usual manner under 'Save settings now'.

The settings that are saved as part of the User profile include:

Switches	On or Off
Mode	Single or Double
Bounce delay	The value that this is set at
Port	The port where the switches are plugged into
Scan colour	The colour this is set for
Scanning Mode	Simple Scan-Across Rows / Down Columns; or Row-Column/ Column-Row Scan
Scan rate	The speed this is set to
Auditory Scan	On or Off
Key presses	The Keyboard alternatives for switch 1 and 2
Swap Switch	If this feature is checked or not

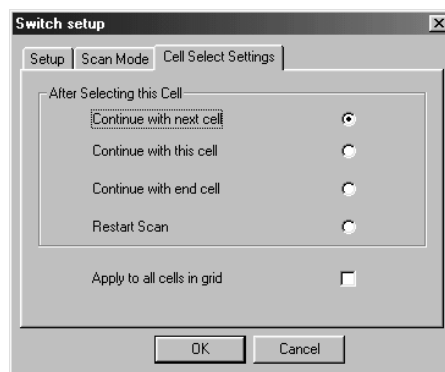
User Profiles are loaded and saved from **Load User Profile** and **Save User Profile** under the **Access** menu. You may also want to save profiles that do not refer to a specific user, but refer to a specific scanning arrangement, which you may want to use with a number of students. In this case your identifier would probably be chosen to remind you of the type of settings.

Save the current settings as a User Profile. Now go to **Access** and select **Switch Settings...** and change the switch set up, for example to **Double** switch. Check this works as you expect and then save the profile for these settings under a different name. Now load the first profile and you will see the settings revert.

## 6. Some extra features - Cell Select Settings

There are also some switch settings that relate to a specific grid, for example, what happens after a cell is selected. These are saved with the grid and not with the user Profiles.

In the **Communication** grids, the normal action when writing to the document from any of the topic grids is for the cursor to then advance to the next cell, ready to continue. However, there are times when this is not what you really want. In the third tab, **Cell Select Settings**, of the Switch Access menu box you may change this setting.



This gives to some choice as to what happens to the cursor after a cell has been selected. In the main grid of **Communication** the **Delete** cell is set to continue with this cell, so that the user can do repeated deletes if necessary.

This property can be set for individual cells, or you can choose to make it apply to all cells in the grid.

## 7. Swap switch function

There is one other switch setting that is occasionally useful. This function is useful when you are using double switch mode. Sometimes when a switch user moves from one program to another, the function of the two switches they are using alters (i.e. the move switch becomes the select switch and vice-versa). Instead of unplugging the switches the **Swap Switch Function** can be checked from the **Access** menu. This has the effect of swapping the function of the 2 switches without having to unplug them.