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MUSIC FACTORY

1. Installation

Put CD in and autoplay. If it does not start automatically, go to My Computer and double click on the CD-Rom drive icon.

Music Factory is not suitable for running over a network.

Running the program

You will need to have the CD present in the CD Drive when running the program.

Customers who wish to install the software via a network onto local machines that do not have CD drives should contact

Widgit Software Ltd for details.

2. Music Factory introduction

What it is for

Music Factory aims to bring music composition within reach of non-musicians.

The aim is not to teach music, but to allow users to 'play around' with sound, listening to different parts and trying different combinations of sound, with the aim of eventually recording your own sequence. The main aim is to have fun.

You can create music from pre-defined two-bar musical 'patterns'. Compositions are built from sequences of these patterns from all or any of the six instruments that can be in any single music set. Within a music set, the parts are so designed that they can sound effective when put together in almost any combination.

How it works

This section describes the way that Music Factory works, and introduces some basic terms. The next section, Getting started and having a go, will take you through the process.

There are eight different musical styles available on the release version of the program.

- Blues
- Cheeky
- Reggae
- Spooky
- Salsa
- Waltz
- Techno
- The 60s

For each style there are six instruments available, and each instrument can play a number of two-bar musical patterns. The choice of instruments and patterns used is called a Set-Up.

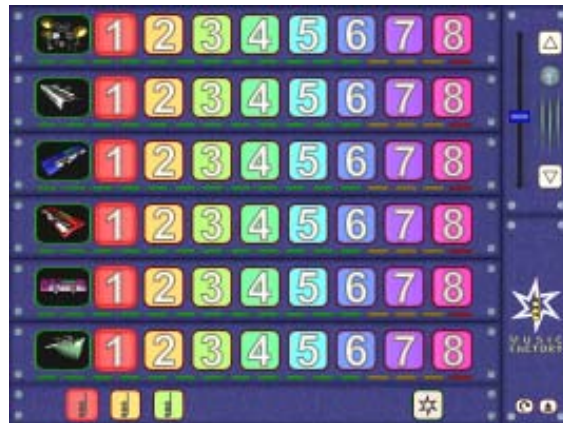
There is more information on these styles on page 24.

You can use ready-made music Set-Ups and you can define your own Set-Ups from the instruments and patterns available in that style.

There are two modes: **Real-time** and **Compose**.

Real-time mode

In Real-time mode you can turn instruments on and off by clicking on the instrument graphic, and you can select or change the current pattern by selecting one of the coloured number squares on the graphic line.



When an instrument is turned on it will start to play the selected pattern at the moment the next two-bar pattern begins. This ensures that all of the patterns are synchronised.

Similarly, when you select a new pattern, it will start to play at the start of the next two-bar phrase.

Compose mode

In Compose mode you can sequence the patterns for each instrument, to build up a composition which you can save and re-play. There are some example compositions on the release CD.

We suggest that you follow the next section **Getting Started** which will explain the process of playing and composing music.

3. Getting started and having a go

This will show you how to:

- 1 play with sounds
- 2 listen to an existing composition
- 3 edit a composition
- 4 make a new composition.

3.1 Playing with sounds

This is the main menu.



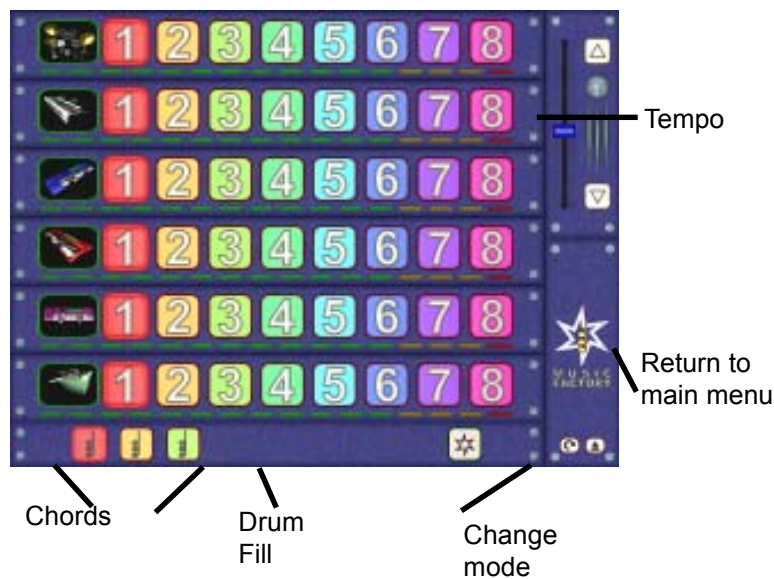
- Select **Load Set-Up**
- Choose one of the default set-ups from the list
- This will open in Real-time mode.
To play music
- Click on one of the instrument pictures on the left (Try the third one). This will turn it 'on'. You can see that the instrument is active because the volume indicator LEDs are flashing.
- The initial pattern that will play is number 1. (This is highlighted by a red frame). Click on a different number to change this. Listen to the different patterns for one instrument.

There is likely to be a slight delay between activating an instrument or changing a pattern and the new pattern starting.

This is because the pattern cannot start until the beginning of the next two-bar phrase.

Note: If it is running too slowly you can change the graphics mode from 16-bit to 8-bit from the video options menu.

- Now you can turn on another instrument. Try the percussion line at the top.
- Experiment with two instruments before adding in more.
- You can experiment with turning instruments on and off and changing the patterns.
- You can change the speed with the slider bar on the top right of the screen.
- You can change the chords and their pitch by clicking on the coloured chord icons along the bottom of the screen.
- You can add a 'drum-fill' by clicking on the white star icon at the bottom of the screen

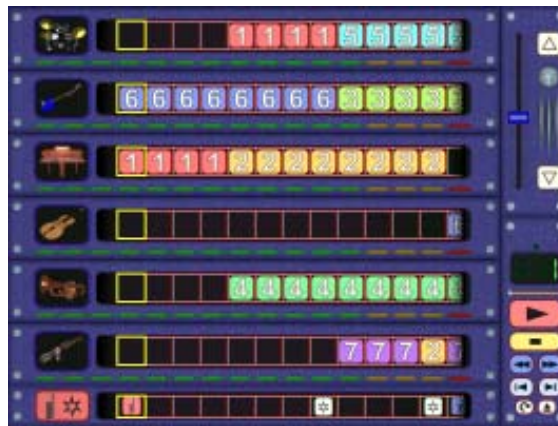


- Click on the **eject** button (bottom right) to return to the main menu.

3.2 Listen to an existing composition

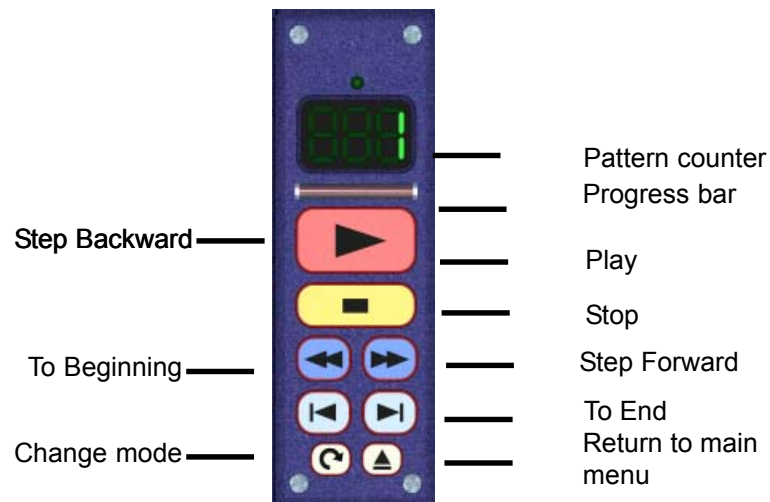
From the main menu select **Load Composition**. Choose one from the list.

This will open the Compose screen with the current composition. The one below is a salsa demo ...



Salsa demo

The first thing is to listen to the composition. Click on the **play** button



The composition scrolls past the yellow frames as it is played. The column in the yellow frames is the current line. The **bar** number is also indicated in the box at the top of the control panel. The Salsa demo, when released, only had 16 bars. The horizontal slider bar below the control panel indicates roughly where you are in relation to the whole composition. As you listen to the composition notice where each instrument is introduced or changes its pattern. The items in the bottom line show the chord changes or where there is a drum fill.

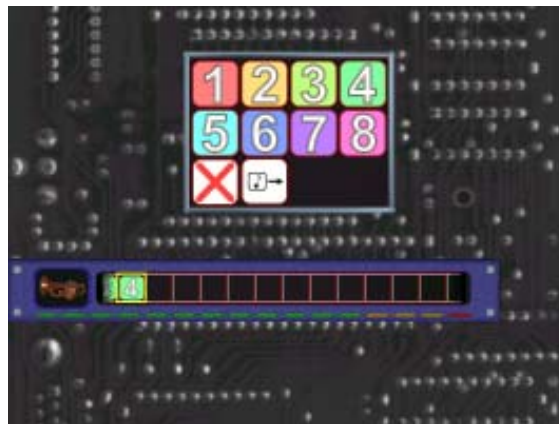
3.3 Editing the composition

You can edit or add to this composition. We will add to this composition

- Click on the **end** button to go to the current end of the composition.
- Step back about 5 squares so that you can listen to the preceding bars
- and hit **play**.

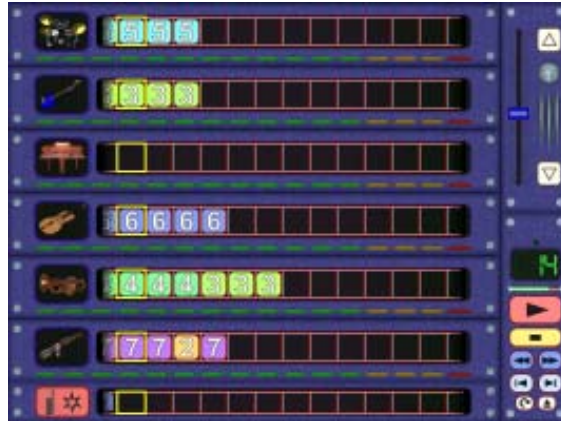


To add a pattern to a square at the end, click in the square that you want to edit. This will give you the pattern set for that instrument. In this example we first add to the trumpet line, by clicking in the first empty square.



Adding a pattern to the instrument line in compose mode

You can listen to each of the patterns by clicking on the number square with the **Right mouse button**. Click on no 4 to listen to the previous one, and then choose another to add to this square. In the example here we chose pattern 3.



This example has a sequence of three pattern 3 in the brass line, and one continuation of the sequence for the strings and woodwind. Step back through the last patterns and then listen to your addition.

Carry on with this until you have added a new section, or an ending to the piece.

To quit, click on the **eject button**, or press **escape**. This shows you the main menu, as shown:



You can choose to carry on with it. To save your changed music select **Manage Composition, Save Composition**. Please give it a new name, so that this demo file is left untouched for future use.

If you choose not to save it, and select **Load Composition or Load Music Set-up**, you will still be asked if you want to save your previous composition – just in case you forgot.

3.4 Making a new composition

To start a new composition, first load the set-up you want to give you the music style, instruments and patterns you want. This will take you into Real-time mode, and in section 1 above. You can explore the sounds at this stage, and decide how you want the composition to start before moving into Compose mode.

You can switch between Real-time and Compose modes at any time. Click on the small circular arrow button to switch modes. Do this now.

You will probably remember a short pattern sequence for one instrument, and possibly the point at which you want to add another instrument. Start the composition with these. You can listen to the work so far. If you want to return to Real-time, to experiment some more, click on the Switch modes button. This will not lose your current composition. You can switch modes, add and edit your composition and even exit as far as the main menu without losing any existing work.

3.5 Saving your work

You can save your composition by selecting Manage Composition from the main menu, or you will be asked if you want to save it if you go to load a new Set-Up or composition, or exit the program.

4. Managing set-ups, Compositions and Inputs

The main menu



Start/continue

This is not available until you have selected a Music Set-Up or composition. It will then show you the name of the item you have selected

Load Set up

Select a music set to work with

Load Composition

Select a composition

Manage Composition

Save a composition – this is automatically presented when you exit, after composing

Clear composition – this clears the current composition from memory ready to start another

Load a composition

Delete a composition

Edit Music Sets

Load a set up

Create a new Set-Up. This is where you define new Set-Ups, choosing the style, instruments and patterns.

Delete a Set-Up.

Program Options

Video – this will let you choose the optimum settings for your computer between 8 and 26-bit graphics. If the program is running very slowly, try changing this setting to 8-bit.

Input devices – This is where you select the input device (release default is mouse). See the section below on Input devices for detailed information on changing the input settings and saving new defaults.

Exit **Select this to quit the program.**

5 Edit music sets

This section allows you to create new music Set-Ups to add to the list of sets, edit or delete Set-Ups from the list.

Creating a new music Set-Up.

Choose the style for your new Set-Up

- Select the instruments that you wish to use from the list shown. There is a maximum of six instruments for each style, but you can make smaller Set-Ups.
- Click Next when you have chosen all the instruments you want.

For each instrument

- Choose up to 8 sound patterns from the list.
- Listen to each pattern by clicking on the button to the right of its name.
- Select the pattern by clicking on the pattern number.



To de-select a pattern click on it again.

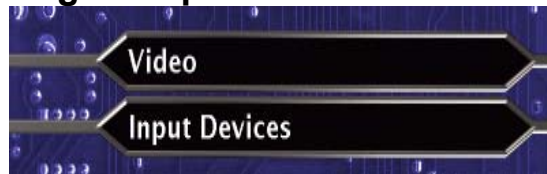
When you have selected all the patterns you want, click on **Next**

When you have entered a Set-Up Name, you will return to the main menu. That name will be shown in the top menu item ready to start using it.

Editing a Set-Up

Set-Ups can be edited in the same way as they are created. You can change the instruments and change the individual patterns used by any instrument. Changing a Set-Up will not affect any previous composition made using that Set-Up because the saved Composition (mfc) file records the actual instruments and patterns used, and does not depend on the original Set-Up data. Similarly, deleting a Set-Up will not damage a pre-saved composition.

6 Program options



6.1 Video Options

When you have selected video options, click on the box to toggle between 16-bit and 8-bit graphics. The display box will show the current setting. If you choose to change options the program will automatically re-start in the new video resolution.

6.2 Input devices

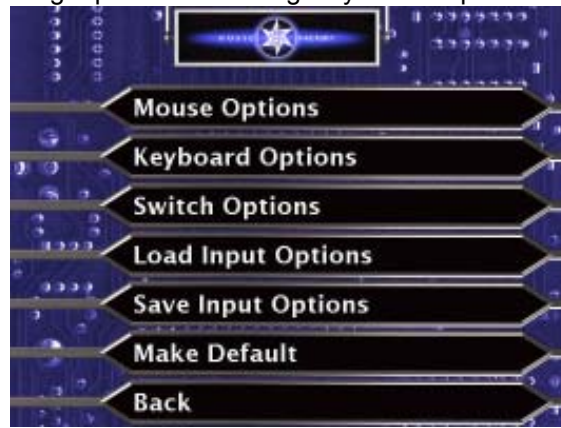
Music Factory can be used with a range of alternative input devices including mouse, touch screen, tracker-ball, switches and overlay keyboards.

Music Factory installed version will operate switches that map to keyboard keys or mouse clicks. You can also choose to install a switch program that will let you use serial port switches. (See page 17 for details.)

There is more information on alternative access on the web site www.widgit.com

To change the inputs, from the main menu select **Program Options** and then **Input devices**

Selecting Input Devices will give you the Input menu:.



The menu items:

Mouse Options

Select to choose either Mouse Cursor Visible or Mouse Cursor Hidden. Clicking on the box will toggle between the two settings. When switches are enabled the user may prefer both to have the mouse cursor visible as it might be visually confusing, however, if the activity was being done by two people you may need both possibilities.

Keyboard Options

This display shows the keyboard key that will perform the same function as the mouse click on an item. The default list is given on page 26.

There are two groups of settings.

- The first two items are the keys used to emulate a switch. Use these settings when using switches connected via a keyboard connecting interface. (See below)

- The remaining keyboard keys map to all of the on screen buttons. These are used when making overlay keyboard grids. They are also useful for persons who cannot use a mouse or trackerball, but can use a keyboard.

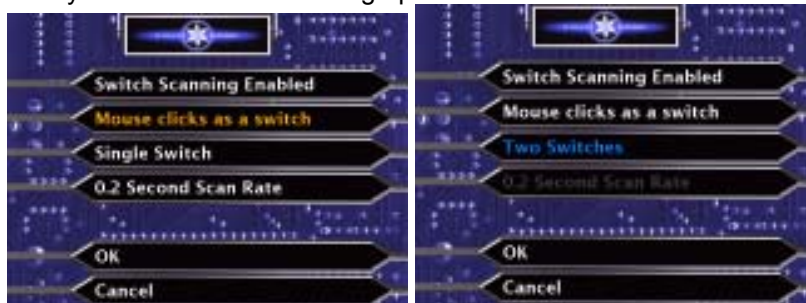
To change the key that is mapped to a button, click on the button name in the list, then press the new key. The default list is given on Page 26.

You can also use Music Factory with direct access from an overlay keyboard. This is discussed in more detail in section 6.4. page 19.

Switch Options

The switch control menu sets the switch connection, number of switches and scanning.

The first item will show whether switch scanning is disabled (i.e. set for standard mouse or keyboard input, in which case the other options will be faded out. If it is set to be switch scanning enabled, then you will have the following options:



- Keyboard input as a Switch/Mouse click as a switch is a toggle. There is also a driver on the CD that will allow you to use a serial switch. See page 18.
- Single Switch/Double switch is a toggle
- When Single switch is selected, you will be able to set the auto scanning rate.

Load Input Options

Load previously saved settings

Save Input Options

Save different input settings for different users or situations

Make Default

Click on this to make the current settings into the new defaults, which will operate when the program is next launched.

6.3 Serial switches

You can install a serial switch driver from the CD. This file is on the CD in the folder **support\serialsw\install.exe**. Click on the file to install it to your hard drive. To use the switch driver, load the switch driver program by clicking on **switchw.exe** before running Music Factory.

Setting up the switch driver

When you load the switch driver you will get the following screen:



- The two switches can be set to emulate key-presses. The drop-down lists below each switch allows you to choose which keys they emulate. We suggest that you use Space and Enter, as shown in the picture.
- Select the port that you use to connect your switch interface box to the computer.
- Select if you want the driver to recognise each press as a single input, or if you want it to register continuously while the switch is pressed. Choose Single Press when using this driver with Music Factory.

Note: You can use this driver to control switches with any switch accessible software that uses keyboard emulation.

6.4 Overlay Keyboards

Overlay keyboards

You can use Music Factory from an overlay keyboard as well as from the on-screen display. On the CD there are installation files for using Music Factory with Intellikeys board, from Intellitools* and with an Overlay Keyboard running Concept Plus or Concept Multimedia, from the Advisory Unit, Hatfield*.

The files are on the CD in the Support directory in a folder called Overlays.

The overlay keyboard files have been created using the default keyboard settings given on page 26.

Overlay files are included for both Real-time and Compose modes, together with the files that you can print to make the paper overlays for the boards.

To use an overlay keyboard, you need to launch the overlay run-file before loading Music Factory. When you use Music Factory you will be able to use the overlay keyboard as a direct access control, either instead of, or alongside a mouse user.

Intellikeys

The files needed to use Intellikeys with Music Factory can be installed by running the file ltools.exe which is in the Support\Overlays folder on the CD.

The Overlay files are called **mfi-compose.oms** and **mfi-live.oms**.

This will also install the programs Overlay Sender and Overlay Printer which you need to print the paper overlays to use on the board. These will be installed into a folder called ltools, unless you specify a different destination.

*Intellitools products are available in the UK through inclusive

Concept Plus

To use these files you will need to have a copy of Concept Plus or Concept Multimedia, from the Advisory Unit, Hatfield. The file conceptm.exe will install the relevant graphic and overlay files into your Concept folder on your hard drive.

The overlay files for Concept Plus are called mf compose.col.ovl and mf live.col.ovl

There are also two files called mf compose.ovl and mflive.ovl which have simple black and white overlays for easier printing.

Load the Concept Editor to view the overlays and to print them, and Load the Concept Driver to use the files.

*Concept Plus, and Concept Multimedia, which have the necessary software, is available from The Advisory Unit, Hatfield. Details are available from <http://www.advisory-unit.org.uk>

7 Using Music Factory

7.1 Using the Fill

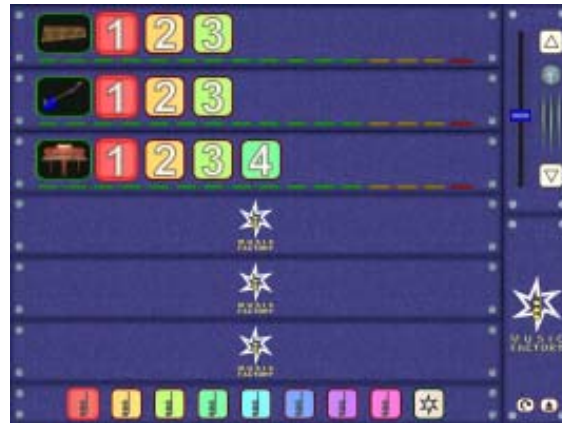


The fill relates to the drums only. It is used to give a single drum fill, ideally between two different drum patterns. In a composition this is shown in the bottom line, alongside any chord changes

7.2 Chord Changes



These buttons will change the chord of the entire instrument set. Each coloured button has a different chord. The best way to explore this is in Real-time mode, with a single instrument, and click through the options. You could then add in some other instruments and hear the changes.

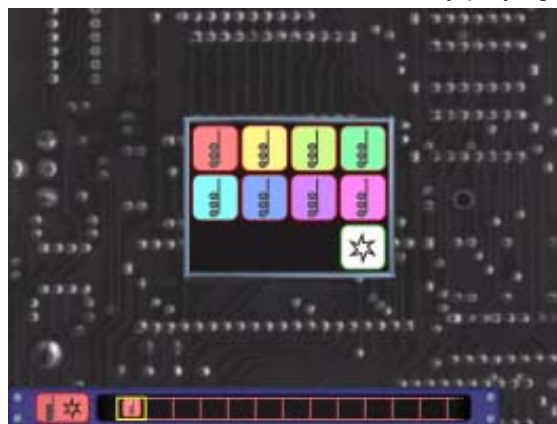


In the Spooky set-up the chord buttons have different sound effects. (See section 8 which gives more information on each of the styles.)

You can use the chord changes in the Blues to create your own 12 bar blues sequence.

The chord changes are also useful in making codas or endings to compositions (See Ending your composition.)

In Composition mode you will get the array of buttons as you would the instrument patterns but will not be able to hear the effect with the right button, as it acts on the music currently playing.



Selecting chord changes in a composition

7.3 Working in groups

The compose mode of Music Factory is ideal for collaborative work as well as somebody working on their own. A group of students working together may be responsible each for their own instrument. This will require co-operation in planning the structure of the piece, listening to each other's ideas and working together to make the composition work.

7.4 Quality of sound

The quality of the sound from Music Factory will depend upon the quality of the speakers. Try connecting in the amplifier and speakers from your hi-fi set, and hear the difference.

7.5 Strategies for starting

Using Music Factory with children, we have found that the most successful way of beginning to play real-time music and build compositions is using smaller set-ups. By using three instruments, the children were more likely to listen carefully to the different sounds, and how they fitted together when there were fewer choices than when they were faced with the large number.

The more instruments that are playing at a time, the more care is needed if the result is not going to sound overloaded or muddy.

7.6 Ending a composition

When building music from a restricted set of musical patterns, thought is needed on how to end a piece satisfactorily, rather than just stopping. There are no specific coda elements. There are two features which can be very useful:

- Using chord changes. If the piece has used chord changes, bringing the music back to the 'home' chord very near the end can give a feeling of rounding the piece off.
- Fading. Instruments can be phased out one at a time, to give a 'closing' feel to the sound.

- Repeated patterns and pauses. Breaking the sequence so that there are two or three sets of pattern and pause can also help with the 'finale'.

There are many other strategies, but these may help you in the beginning.

7.7 Copying compositions from one machine to another

Compositions are saved in your Music Factory directory in the folder called Save. A composition has the file extension **.mfc** (which stands for **music factory composition**). You can copy any mcf file from one machine to another, making sure that the file is placed into the Save directory of the new machine. If you have used new music sets which you have downloaded from our web site, and are not part of the release version, these resources must also be available on the machine you are copying to.

7.8 How to make an audio copy onto cassette tape

Music Factory could be regarded rather like an instrument. The output music is in Microsoft Direct Music™ This enables the music to change speed, and lets you change the pitch and use the chord changes. The output is not therefore in standard wav format. To make an audio copy of your music you will need to make a copy onto a cassette or sample the sound.

Connect the audio-in on the tape recorder to the audio-out on your computer. Press Record on the tape recorder and then press play on the Music Factory Compose screen.

7.9 New music styles

Additional music styles will be created and available to download from the web. You can connect directly to the downloads from the

8 Notes on the music styles and Set-Ups

The instruments used are a combination of sampled instrument sounds and synthesised sounds. The instrument names that are given are there as an indication of the type of sound rather than true-life representations.

Each style has two Set-Ups ready made for you.

- The default Set-ups uses all 6 instruments available for the style and the first 8 patterns of the 12 available for each instrument.
- The small Set-Ups have been created with three or four instruments using a smaller number of patterns. The selection of instruments and patterns have been chosen to go together particularly easily, and make good starting points.

Blues

This includes three chord changes. These allow you to make the classic 12-bar Blues structure. The chord sequence for this is:

4 bars (two squares) of the **1st chord** (Home chord)

2 bars (one square) of the **2nd chord** (Fourth then back to **2 bars** (one square) of the **1st chord** (Home chord) now **2 bars** (one square) of the **3rd Chord**(this is a Fifth dropping to a fourth) and finally **2 bars** (one square) of the **1st chord**.

You can repeat this cycle as often as you like on your composition.

Blues Demo 1 shows this pattern being used. The chord changes are more obvious in some instruments than others. The bass, typical of the Blues, is the most marked.

Cheeky

The basic tune in this is a favourite of young piano players. This Set-Up shows how flexible even a simple theme can be.

Reggae

This is a loping beat from Jamaica where beats 2 and 4 in the bar only the steel pans are stressed. The Steel pans/keyboard instrument line has both styles of sound.

The Reggae Small Set-Up only uses the steel pans sound.

Spooky

Spooky is a fun set-up that is reminiscent of cartoon spook sounds. The Effects line is not a single instrument, but gives a set of sound effects that compliment the musical patterns of the instruments in the Set-Up.

Salsa

Salsa means 'sauce', a tasty mixture of Cuban and Puerto Rican music with a New York Latin Jazz flavour. It is one of the easiest styles to mix-and-match with.

Waltz

This 3 in a bar dance style was most famous in Austria. These themes allow you to create dance rhythms.

Techno

Techno music is mainly electronic. It uses a range synthesised sounds from different keyboards. The percussion is particularly important in this style, and the Techno Small style has four instruments in order to give a range of sounds and percussion.

The 60s

This is not the Beatles, but rather the sounds and rhythms from the early 60s. Many of the popular music of the period had very distinctive tunes, which is not suited to the sequencing approach of the Music Factory. The focus in this music style, therefore is on the sounds and rhythms of the era.

9 Keyboard Commands – default settings

Command		Key
Emulate Switch 1		Space
Emulate Switch 2		Enter
Select Instrument.1	1	
Select Instrument.2	2	
Select Instrument.3	3	
Select Instrument.4	4	
Select Instrument.5	5	
Select Instrument.6	6	
Select Chords	7	
Toggle Instrument on/off	Tab	
Select Pattern.1	q	
Select Pattern.2	w	
Select Pattern.3	e	
Select Pattern.4	r	
Select Pattern.5	t	
Select Pattern.6	y	
Select Pattern.7	u	
Select Pattern.8	i	
Remove Pattern		Backspace.
Up Tempo		=
Down Tempo	-	
Toggle Drum Fill		x
Switch Modes	Shift	
Play		Insert
Stop		Delete
Go to beginning	Home	
Go to End		End
Move Forwards	Pg Up	
Move Backwards		Pg Dn
Return to Menu	Esc	

You can restore the defaults either by editing the keyboard setting to match this list, or you can copy the default file, found on your CD in the Support folder, defaults\Default into the Config folder in