Sequentix P3 Sequencer

User Guide

Version 1.04

Introduction

Welcome to the P3 User Guide, written independently of the P3 Operation Manual. This is my small attempt to pay Colin back for the endless patience he has shown as I have continually pestered for updates and new features.

The P3 Sequencer has given me unparalleled freedom whether playing live or constructing complex, evolving patterns in the studio. Quite simply, I've been searching for something like it for years. I realise that the power lurking inside isn't immediately obvious and ask that you set aside time to master the basics. The rewards will be worth it; this is a deep machine.

Hopefully this guide will suggest some practical ways the P3 can be used in your music and the tips and examples can be turned to your own advantage. It is not a replacement for the Operation Manual (and my diagrams aren't as good) and I don't try to cover all the parameters in detail; Colin has already done that. Perhaps this different perspective will help open up some areas you never considered before.

If you spot any mistakes or have examples you think would benefit others, drop me a line at paul@softroom.co.uk I'm already aware that a few new features have been added since I started writing this but that's the nature of the beast and it's a good thing that new stuff gets added, I think.

Enjoy your sequencer journey!

Paul Nagle

Revision History

Version	
0.4	Attempted some crude diagrams and corrected a few typos.
0.4a	Some diagrams didn't work in Wordpad (although fine in Word)
0.5	Diagrams still weren't quite right damn. Also started to organise the tips better. Added preliminary TOC and Index.
0.6a	Some text improvements
0.7	Tweaked the tips as some example MP3s seem to have been lost. Added scales gfx as only available in Word format earlier. Almost ready for publishing; perhaps I should trim some of the silliness...
0.8	Started to go through the text soberly and to make this more readable. Added (feeble) scaling explanation.
0.9	Added some quick reference stuff for starting off....
0.9a	Another tip (Note Reveal) added. I should also add something about the new accumulator behaviours introduced recently and some other stuff but I reckon I'll wait a while.
0.9b	Error spotted by Boele, new "knob" tips. Fnar fnar.

0.9c	Another knob tip glistens proudly for all to see…
0.9d	And more including one from Bleep
0.9e	Added mention of shuffle and Accumulator Behaviour screens
0.9f	Updated for enhanced Playlists, P3 OS version 3.1.005
1.0	About time I did a version 1 - I added a glossary at the end in this version.
1.01	Added simple tip “assign knob to MIDI CC” thanks to Tom Adam for pointing out I’d forgotten it!
1.02	Tweaked Playlist Edit description to include the new QCPPC function <g> - 'quick contiguous pattern playlist creation'.
1.03	Improved description of “consecutive part play” – thanks to Jim Combs for pointing out how poor my earlier attempt was.
1.04	Added new tip for setting same notes quickly

Contents

Chapter Zero - Quick Reference Guide

1. From the main play screen, looking something like this:

11/12	off	**P**
bank	FTS	tune

Mute/Unmute Tracks	Push the keys 1-8
Select Parts	Push the keys 9-16 (if during playback, the new part will play once the old one ends)
Select Multiple Parts Consecutively	Push a Part key to mark the start of the playback loop. Without releasing it, push another Part key to the right. Now release.
Select a new Bank	Hold F1 and a key corresponding to the bank number
Select a Scale	Hold F2
Edit a Scale	Func + F2
Enter various config screens	Func + Page
Access additional Part data/functions	Page
Record into a track	Rec+Track key
See selection of LED displays	Step Mode key
Enter Playlist Edit	Func+Track Key (leave this mode using Func Key)
Enter Pattern Edit	Edit + Track key (leave this mode using Edit key)
Transport keys, tempo knob	As you'd expect
See Current GBar & Access Playlist Hold	Hold Upper Mode button (playlist hold can be activated for each track - green means no hold, red means hold is active for that track)

2. From Playlist Edit, looking something like this:

```
C: 1    R: 1  Xps: 0  L
step    chg: P     leng
```

See Current GBar value & access Playlist hold	Hold Upper Mode button (same as access method from Main Play screen)
Change Pattern Sync for this step (Gbar/Pattern)	F2
Edit Pattern Length	F3+Playlist Step key (max length is 8 steps)
Quick playlist define	Hold down a range of pattern keys – sets length accordingly and all repeats and transposes to zero. Min length 2 playlist steps.
Edit Pattern	Edit + key corresponding to pattern number (leave this using Edit key)
Move playlist edit cursor	Turn data entry or use F1 (step) and playlist step key.
Select Pattern to play at this step	Hit relevant pattern key

3. From Pattern Edit, looking something like this:

```
   16                  E
-  tbase  +          sync
```

Alter timebase for pattern	F1 and F2
Resync pattern	F3
Access additional menu items |(direction, last step etc.)	Page and Func+Page
Mute/unmute tracks without leaving edit	Func+Edit, release Edit, perform mutes, release Func.
Quick access to Aux	Func+Mode (twice for Aux define)
Leave edit	Edit

Chapter One - Creating Your First Pattern

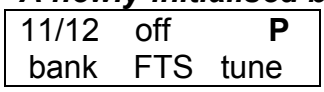
As a general rule throughout this guide, we'll keep the P3 running - it's designed to be used that way. I hope you have a tolerant partner or good soundproofing in your studio because, hard as it may be for us to imagine, not everyone appreciates hearing sequencers play for hours on end.
I'd recommend keeping a drum machine synced-up too, ready to be auditioned should you need something to tap along to. And I suggest keeping your sounds simple so you don't get distracted - a piano or electric piano that is velocity sensitive will be fine.

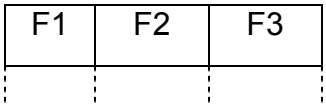
In this chapter we'll create a simple pattern, look at altering the direction of playback, the timebase, playing with individual steps - essentially the easy stuff you've probably worked out already for yourself. I may even forget to cover some of this cos that's the kind of guy I am. I'll assume you've already read the proper Operation Manual and know how to set up MIDI Channels, how to turn on Clock output etc. Incidentally, don't miss out on the useful MIDI thru functionality if you are working with a MIDI controller and using the P3 to route data to your modules. When determining the MIDI thru channel, Func and the softkey allows you to send notes through Force To Scale processing or not. Very handy and probably not widely known.

Bank Initialise

Start by initialising a bank. From the main play screen Func+Page, then hit Page, Hit F1, then hit F1+F2 simultaneously to confirm. All 8 tracks will then be shown in green - they are active but contain no notes. For clarity, turn off each one except Track 1 - that's all we're going to use in this chapter.

A newly-initialised bank - bank 11.





Note: Each screen has up to three areas that you access using the F1-F3 softkeys. In future I won't attempt to illustrate the softkeys but you know they're there...

Hit Run.

To get something happening, hit Edit (the middle key on the 9-key keypad) and the Track key simultaneously. There's going to be a lot of this simultaneous stuff

so I'll mostly write something like Func+Track1 - you'll soon get the idea.

Pattern Edit: Timebase & Sync

16	**E**
- tbase +	sync

The screen you see now has a flashing LED travelling at the current tempo between steps 1 and 16. The screen shows an inverse video E (to represent Edit) in the top right hand corner. It also shows *tbase* 16 - experiment with F1 and F2 to see the various clock divisions available. A tbase of 32 is the fastest and there are also triplets.
Also in this first screen, F3 is *sync* - and hitting this resyncs your pattern. Sometimes you may want to do this if you have been using random directions or messing with skip etc. N.B. this is the skip function of the P3 and not some Australian marsupial you may remember from childhood TV.

Hitting the Page key from here shows the next main edit screen you'll use. On this screen F1 and F2 set the direction with F3 setting the last step. Look at the various directions on offer by pushing F1 or F2. *Note that the direction only changes at the <u>end</u> of the pattern*. Push F3 and one of the step keys simultaneously to set the last step. Each time you push F3 the last step is shown in amber.

Pattern Edit: Direction & Last Step

forward	**E**
- drctn +	last

So far so good. Let's leave the menu system alone for a moment and get some notes happening. Fortunately this is easy-peasy.

Generate Some Notes!

Hit some step keys. LEDs light and you should hear some notes - C5 actually. To see the note value at any point, hold Func+ step key. In our newly-initialised Pattern, note velocity is maximum, length is set to 6, delay set to zero.

Pattern Edit: View Step Value

Step 13	Note C 5
V:127 L:	6 D: 0

It's time to change some note values; we can even do this for steps we have not yet activated. To do this, turn the knobs on the lower row. Each of these corresponds to a step and works very much like an old analogue sequencer - a Korg SQ10, ARP 1621, Moog 960 etc.

Setting Note Range

You will see that the range of each knob is quite large. Probably too large to be useful. Let's alter this before we do anything else.
To alter the range of the knobs, use Func+Page. Ignore the screen you get next and hit Page again. Ignore that too. Hit Page again. And Again. Don't worry there isn't much of this kind of thing, and we'll get to all those pages before this chapter is over. It's almost as if I had a plan.
Anyway, you should arrive at a page with the following on it:

Pattern Edit: Accumulator Config, Note Range, Apply FTS

Acc	note	Apply**E**
conf	rng	FTS

Push F2 - for *note range*. This is used to set the lowest note you can select with the knobs. Set it to C3 using the data entry knob.

Pattern Edit: Note Range

base	note =	C 3
enter		cancel

Hit enter

Then use Func+F2 and you get a new screen - *note span*. It has possible ranges of 1-4 but this 1-4 business doesn't mean octaves. Oh no. Set the span to 1 and hit enter (F1).

Pattern Edit: Note Span

note	span =	1
enter		cancel

Now you should see that turning a knob gives you a range of notes from C3 to D#4 - just over an octave. A note span of 2 gives you C3 to G5 and so on. It's pretty useful although not totally intuitive but it makes using the knobs for fine tuning pretty easy. It's also good for those wide sweeps of notes you feel compelled to play with from time to time.

Randomize

While we're in this sub-menu of the main edit screens, let's explore some of the options we bypassed just now. Hit Page until you reach the "Randomize" screen. Not sure why we have the American spelling but there you go.

Pattern Edit: Randomize Note

Randomize:		**E**
note	base	range

Now, as the P3 plays, hold down F1 and listen to the random values that are written into the notes. You will spot that F2 and F3 offer the same kind of control over the range of notes that we just looked at for the knobs. A range of zero imposes no limits on the values generated.

Hint: Setting All notes to same value. Setting the range to 1 is a quick way to use Randomise to set all notes to the value specified as the Base.

The range goes all the way up to 127 so you can generate random notes that are *very* random if you want to.

Note: the randomisation applied is always above the value of the base note.

Hitting Page again allows you to randomise the upper row in exactly the same way as for notes. If the upper row is currently velocity - you hear the dynamic changes in your piano sequence instantly. Push the selection button to change the upper row to control length, delay or a controller - i.e. one of the four controllers that the P3 holds in each Pattern. We'll get to those later but remember this as a good way to play with them, especially as they don't have to be just MIDI Continuous Controllers but something unique to the P3 - Auxilliary Events. OK, I won't digress into those just yet. Even though I want to.

Pattern Edit: Randomize Upper

Randomize:		**E**
upper	base	range

Sculpt & Tap

Our final page before leaving these menus is Sculpt. The Page button will take you here.

Pattern Edit: Sculpt

Sculpt:		**E**
note	upper	tap

The Sculpt page has three softkeys, two of which are concerned with sculpting values. Sculpting is performed by holding the relevant softkey and turning the data entry knob. Go on, try it. F1 and the knob writes notes into the pattern, F2 and the knob writes whatever the upper row selection is set to. So it could be velocity, length, delay or one of the four controller rows. You could simulate the recording of knob movements, albeit quantised to 16 steps, and record filter changes and stuff like that. Experiment and you'll understand.

The third key on this page - F3 (tap) - is a fun way of tapping in a rhythm. There are other ways of doing this using a MIDI keyboard; we'll come to those later. So to try it out, hit F3 in time to your drum machine. Perhaps you should clear any existing gate events first to clarify what is happening. Tap entry doesn't alter the existing note value so it is a good way to "reveal" previously stored notes and can be easier to "get" a rhythm than by judging the gate spacings of steps to activate. Having poked around in those menus for a while, you could mess around here for ages. I often do.

Copy/Paste & Shift

Func+Page takes you back to the main edit menus and when there, you can try out some of the options we ignored earlier. Page to the clr/copy/paste page. Go on.

Pattern Edit: Clear, Copy, Paste

		E
clr	copy	paste

F1 - Clear - is useful to wipe the pattern.
F2 is Copy. Hit it and the P3 asks for the start of your selection. Hit the first step key. You are then prompted to select the last step. Hit the fourth key for now. The P3 tells you it has copied 4 steps. Now you can paste - either within this pattern or another. For now we'll stay here. Hit F3 - the screen tells you it will paste notes. You can paste other stuff too - F1 says "select" and if you hit this several times you see the various selections that can be pasted. Sweet huh? We'll stick to notes for now.
As the paste operation is ready, all you have to do is hit a key where the paste should start. Picking step 5 will give us a pattern where steps 1-4 are replicated in steps 5-8.
If you paste into a step where all the notes you want to paste don't fit, any additional notes are wrapped around.

Now hit Page again and see the Shift screen.

Pattern Edit: Shift & Shuffle

		E
< - shift	- >	Shf

You can shift the notes in the pattern forwards or backwards in single steps. Use Func+shift and the shift occurs confined within the boundaries of the pattern length - useful if using patterns of less than 16 steps. Again, this is pretty obvious so I won't labour the point.
F3 gives access to the Shuffle function - this is a preset way of quickly varying note delays across a whole pattern. To use it, hold F3 and a step key. For example, F3 and key 6 gives a shuffle value of 6 where every even step gets a

delay value of 5. To reset shuffle, hold F3 and key 1 - every step gets a delay of zero.

Mode Button

Tie

Our pattern is now pootling around happily and we already know we can switch steps on and off using the buttons. At least I'm pretty sure we do, yes? If we push the Mode button, we can make the step buttons do things other than set Gates - such as tie notes together, skip steps, or eXclude steps from transposition. We haven't transposed our patterns yet but we will. Press the Mode button until the LED next to *tie* lights. Select some steps to tie by pushing their buttons. You can see the Gates and ties at once using the cunning tri-colour LEDs. Gates are red but amber if also tied. Steps that are green have ties but no Gates.
If two consecutive steps have the same note value, a tie will extend them. If they are different notes, they will play legato - this is good for introducing portamento on bass patches, and highly effective on any patch with envelopes set to single trigger mode. See your synth manual for more on this kind of thing. Not now, later.

Skip

Skip is fun and highly popular with Moog and ARP sequencer users. Or people who always aspired to a Moog. Skip simply marks steps you do not want to play. The sequencer skips gaily past them as if they did not exist - and it's a good performance trick to play with this gratuitously.

Hint: Adjusting length using Skip. Using Skip can also be a fun way to adjust pattern length. Setting Skip active for steps 1-4, for example, means the pattern really starts playing at step 5 and runs until the end, as specified by "last step". You can change the last step too by skipping that to shorten the pattern.

If you skip all notes, guess what will happen? Yep, they don't play anymore.

CCA-CCD

We'll end by a very quick look at controllers. You know, mod wheel, breath control, all that malarkey. The P3 can send up to four of these per step in each Pattern.
There's a quick way to define which controllers to send. Func+Mode leaps to the first controller, which is neat. Func+Mode a *second time* puts you into the setup screen for controllers - you get quick at this, trust me. Actually, my mum always said never to trust anyone who says "trust me".

Pattern Edit: Controller Define

cc # 0 enter next cancel

So you now see a screen that looks something like my rendition above. Its

softkeys are set to *enter*, *nxt* and *cancel*. The F2 key (next) allows you to increment the controllers one at a time or you could use the data entry knob - or a combination of the two. We'll be boring for the time being and select CC #1 - mod wheel. Hit F1 and CC row A is set to send out mod wheel events on each step we activate.

Now then, depending on a *User Config* setting - yeah, I know I haven't talked about those - you can either turn one of the upper knobs and see the step become active automatically. *Or* you can turn the knob and then activate it yourself.
I have my User Config set up so that when I turn a knob, I *don't* get the event activated automatically. I set the value I want and *then* activate the step manually. This is because I use Aux events far more than I use MIDI CCs and, although this behaviour is excellent for controllers, it is often no good when dealing with Aux events. I think it's chapter four or something before we talk about those so be patient. I'm rambling, aren't I?

OK, you have some controller stuff happening now, one way or the other. In my example, my piano patch isn't actually set to respond to the mod wheel (doh!) - so I quickly hit Func+Mode and turn the data entry knob until my CCA row is set to send MIDI controller 105 instead. This is cutoff frequency on a Supernova, which is the synth I happen to be sequencing. Your mileage will vary.
Now I can set a different cutoff frequency for each step of my pattern - or just set a few controller events active on specific steps if I choose. It sounds jolly nice. I can set up the other controllers by repeatedly hitting the Mode button whilst holding down Func so can do different things like set osc levels, effects sends, envelope settings etc. You'll be exploring your synth manual quite a lot for controller definitions (and hoping your synth doesn't use NRPNs instead of CCs) and having fun with this.

Perhaps you will try setting up one track to play notes and another track set to the same MIDI channel but only sending controllers. These tracks may be running patterns of different lengths - resulting in those evolving patterns that remind us what a clever devices the Polymorph and Evolver are.

That's enough for now on pattern creation. There's more to come but all in good time, eh? You exit your pattern using the same key you began the edit with - the Edit key.

Chapter Two - Playlists

Whoopee, your P3 now makes noises. Well, OK, your synth makes the noises. Anyway, your 16 step patterns are rattling along nicely. You can make them shorter using the length option and you can run multiple tracks, each maybe set to a different MIDI channel or, indeed, the same one. A User Config option tells the P3 whether one set of channel defintions counts for all - but you should look at the Reference Manual for that stuff. I'm not too much into details you see.

Moving swiftly along, let's suppose you want to create a pattern *longer* than 16 steps. Well you can't, so there. Don't panic though because the P3 lets you string patterns together. Yes, I was only teasing. In fact, as you are probably starting to expect by now, the P3 can do far more than just string Patterns together. You can define a play order for them specifying a repeat number for each one, a transposition value and some other stuff I don't want to go into now. This functionality is known as a *Playlist*.

Playlist Edit

You can see the Playlist for each track using the Function key + the Track key. So in our case Func+Track 1 key plunges us into a screen that looks, well, slightly complicated; I have to admit it. This screen has an inverse video L reminding us we are in Playlist mode. And, as our bank was only recently initialised, the playlist consists of just one pattern with no transposition or anything clever at all.

Playlist Current Step Display

```
C: 1   R: 1  Xps: 0   L
step   chg: P    leng
```

In Playlist edit, the current play position is indicated by a flashing playlist step LED.
Here, the F1 key is marked 'step' and if you hold this and press a Playlist Step (production P3s are marked thus in black text) you can then enter the pattern number that you wish to play at that step; just press a Pattern button and you'll see what I mean. When editing the playlist in this way, the display changes to :

Playlist Edit

```
E: 1   R: 1   Xps: 0   L
step   chg: P    leng
```

- in this case, you are editing the first playlist step.

The top line of the screen shows us the Current Step or Edit Step, repeat and transpose settings for that step.

- When in Edit, the pattern number for the edited step is shown is shown by a lit pattern LED. Hey, that sentence sounds like I didn't quite translate it from the Japanese!
- When not in Edit, the current step changes as the playlist progresses with the pattern for that step changing too.
- As an extra visual indication you are in edit mode, all the mode LEDs freeze, which is nice.

Using The Data Entry Knob

A slightly slicker alternative, IMHO, to using the F1 key, is to simply turn the data entry knob. As soon as you do this the P3 leaps into Playlist Edit with data entry controlling edit position - you'll see a red LED moving as you turn it. This is surely the most intuitive incarnation of playlists yet, methinks. It's simple: turn data entry and for each step it selects, quickly set the pattern number you want.

Misc Notes on Playlists

- Having read through the above you can probably see that setting the playlist length involves using F3 and the 8 Playlist Step keys (corresponding to the length you want). Don't do this now though or we'll get hopelessly sidetracked.
- To return to displaying the current playlist postion (which also gets the LEDs flashing again - am I obsessed with flashing LEDs?) at any point, hit the F1 key. You can jump in and out of edit freely.
- See how F2 is set to 'chg: P'? I'm going to totally avoid this until Chapter Four, so don't sweat it now.
- The default playlist when you first initialise a bank is 1 step long; in our case it plays the pattern created earlier.
- You can enter pattern edit directly from here. Hit edit and the first step key (labelled Pattern in blue text) and you're in! Come out of Pattern edit again when you're ready by hitting the Edit key; choose whether to save any changes at this point, of course. When back in Playlist edit, hit key 2. You'll hear your Pattern is no longer playing because your single step Playlist now points to a Pattern (number 2) that has no data in it yet. Don't worry if it all seems weird; it isn't so bad once you get acclimatised.

QCPPC ('quick contiguous pattern playlist creation')

You can blame Colin for that mouthful. But it is an addition to Playlist Edit that appeared in version 3.1.006 of the OS and makes knocking up a long playlist (with no transposes or repeats) far easier than any other method. It makes creating patterns longer than 16 notes as easy as pie and works like this:

When in Playlist Edit, hold down a pattern key – for example key 1. Then hold down a second key and release both of them. It's a technique that may be familiar and what it does is automatically set the length parameter according to how many consecutive patterns you've selected *plus* it positions each pattern in

turn to each consecutive step in the playlist *and* it sets all repeats and transposes to zero.
So try holding down key 2 and key 4 and you get a three step playlist that cycles through patterns 2, 3 then 4 repeatedly. It up to you, of course, to populate the patterns how you like.. ☺
Yes, I *should* have inserted QCPPC at the start of this Playlist Edit section: for many it will be the only part of Playlist Edit that they need/use. But isn't all the other stuff fascinating too?

Number of Patterns Available
You have a finite number of possible patterns per track - the number depends on the memory configuration you selected for your P3. I use the configuration that gives me 12 Banks so this means I get 4 patterns in every track - plenty for my purposes.

Hint: Playlist Creation as a performance tool. You can edit/create patterns that are not even playing directly from the Playlist edit screen, cueing them up ready to be activated. Simply enter Pattern Edit as we've described then make any edits you like. Now remember when you save the pattern it saves to a specific pattern number and... hmm, I didn't really explain that before did I? Well, OK, now's a good time. When you save a pattern by hitting the Edit key you get the Save Back Lose options, yes? The Pattern number is shown at this point and if you hit another key *prior to saving*, the screen updates to "Save to n" where n corresponds to the new Pattern number. You can save to any of the available patterns.

Pattern Edit: Save

```
Pattern:  2
save    back     lose
```

So the above shows you are saving a Pattern as Pattern 2. As an experiment, hit key number 3 at this point and the screen changes to "Save to: 3" - meaning you are leaving your old pattern intact and putting any changes into a new Pattern. To hear this new Pattern play, it has to be included in your Playlist, logically enough.

Right, after that rather naff explanation you are ready to create a whole selection of Patterns ready to go. Use the Edit and Pattern number function of the Playlist and make Patterns however you like. Having done so, hold down F3 and a step key corresponding to the length of the Playlist. The screen shows a row of LEDs in green representing the length. Your playlist starts to blossom and your sequences grow in complexity. Ah, bliss.

As the Playlist progresses you can manually override Pattern selections for each step. This is where you might wish to hold the playlist - to do this push and hold the upper mode button. As you hold this down, you see a screen that looks like this:

```
Gbar   pos  =  16
1 - 8   =  plist  hold
```

This shows us that the Global bar has a length of 16 (more about this later) and that steps 1-8 indicate Playlist Hold FOR ALL 8 TRACKS. If these LEDs are green there is no playlist hold active. If any are red, those tracks have their playlists held at the current point. A useful performance trick actually.

<u>Repetitions and Transposition</u>
When in Playlist edit, the knobs are used to set pattern repetitions and transpositions.

The top knob above each Playlist Step sets the number of repetitions. Turn it and you see that the range is from 1 to 8. The screen confirms which step you are editing.
The lower knob sets the transposition of the Pattern - from -31 to +32 with zero at the knob's middle point. That's really all there is to it.

The Playlist screens and related LED displays juggle some fairly complex information. They *are* daunting at first but, when you're used to them, playlists are really handy, especially if you want to string several 16 step patterns together in series. You can probably think of some good applications and that's even before we get into recording MIDI input and using the P3 as a MIDI looper.

Track Mute from Within Playlist Mode
Just as you can mute and unmute tracks from within Pattern Edit, so you can do the same from Playlist Mode. Hold down the Step Mode button and the display's bottom line shows:

```
E: 1     R: 1  Xps: 0   L
1 - 8 =  track  mute
```

Set the track muting via the keys as usual (green means the track is active)

Chapter Three - Record & Force To Scale

You now know how to create Patterns using a technique similar to a traditional analogue sequencer. Plus, you can string Patterns together to form sequences longer than 16 steps, or even use the same Pattern with different transpositions. Award yourself some beer and, when you're ready, let's explore some additional ways to get loops happening.

MIDI Input - Realtime Record

There are several ways to record notes into the P3 via MIDI - and we're going to keep one of them until the end of this chapter just to maintain an air of suspense. Let's begin with the most obvious method. If you have a drum machine synced up and chugging along, turn up its volume. Take a freshly initialised bank and, as before, set any tracks you are going to use to the same channel, ready to play our bog-standard piano sound. Switch off all tracks other than track 1 and enter pattern edit for this track.

As in chapter one, activating a few gates would give you some C5 notes and, of course, you could then twiddle some knobs to change their pitch. However, this time we will try MIDI recording instead. For this to work, connect a MIDI keyboard (or guitar or drum controller or whatever) to the P3's MIDI input.
Hit the Rec button.
The top right hand of the screen shows <<REC>> thus:

Pattern Edit: Record

```
          off  <<REC>>
          mthru      del
```

The screen also shows the MIDI thru setting that can be toggled using F2 and 'del' above F3.
If you want to hear the notes you play sent thru to the synth receiving the notes, set thru to *on* using F2. For some sounds - especially mono synth sounds - setting thru on can sound naff because the notes you play compete with the notes the P3 sends. You'll soon work out which works best in each situation.

Play some notes along with the drum machine. If you cock up, hold down F3 to watch the notes get deleted. Remember you can always use the gate buttons, the knobs etc. even whilst recording. When you're happy doing this, hit the Page button.
You will see a screen showing three more recording options - ties, FTS and NDub. Hit F3 - NDub to toggle Note Overdub status to On.

Pattern Edit: Record Page 2

```
 off        on        on
ties       FTS    NDub
```

Now, hit some more notes. *Aha*, you think as you notice that you can replace the values of notes that exist - i.e. whose Gates are active - but you *cannot* enter any new notes. This is very handy when you want to keep a rhythmic structure you like and simply replace the pitches.

Hint: Quirky Note Entry. A really sneaky way of introducing shifting changes to a pattern is to enable NDub and have your MIDI notes entered by, say, the output of an arpeggiator. It can actually be cooler if the arpeggio *isn't* synced because the notes then get into the pattern at different places on each pass. The basic feel doesn't change though as you're not entering new gates.

Having played with this, turn NDub to Off. We'll ignore the FTS setting for now as we haven't looked at Force To Scale yet - that's later in this chapter. Instead we'll look at F1 - *ties*.
You'll remember ties from the introduction to Patterns. They're a handy means to slur two notes - maybe for that portamento sweep we all know and love. Hit F1 to set recording of ties to on.
For extra clarity, hit the Mode switch until the LED next to TIE is lit. Play some notes; some staccato, some legato. You'll see that when you play legato, the tie LEDs are activated and notes are sustained for several steps. Experiment for a while as this is a nice way to get a mixture of sustained notes and short notes. I realise our electric piano sound isn't the best way to demonstrate this - try it with a synth bass if you like, with the envelopes set to single triggering or portamento activated by legato playing. Sweet eh?
Hit Rec again to turn off recording. You can clear all gates and ties too because we're now going to look at an alternate way of recording notes:

MIDI Input - Arpeggio Record

Hitting Func + Rec enters arpeggio record mode. The screen shows <<ARP>> and looks a little odd, I guess. There's no second page and just two softkey options so it's nice and easy to use.

Pattern Edit: Arpeggio Record

```
P:  1     off <<ARP>>
clr       rong
```

F2 is 'rong' which means Reset On New Group - meaning a group of notes. Set rong to On and hold down a three-note chord. You'll see that the Pattern length is set to 3 and the three notes you entered are written to the first three steps. Play one note. The pattern is then a one-note pattern. Each time you enter a chord, the number in the top left hand corner shows how many notes you entered - OK it doesn't, it shows one more than the number you played - the P therefore stands for the next step that recording will go into, I suppose. Not intuituve maybe but no worries.

At any point hit F1 - *clr* - and this eliminates your input and resets the length to 1. Now hit F2 to set rong to off. Play a three note chord. Release the keys. Play a different three note chord. Now you see the pattern is six steps long as the second chord is entered *after* the first. Good huh? Keep doing it if you like as the recording wraps round until it is a 16 step pattern with the start point for note entry continually shifting. You can see it in action better than understand my explanation I expect.

Hint: Step Time Record (old-style). This application of *arpeggio record* is a great way to enter a pattern of individual notes in step time. With rong=off you can play in step time and each note is recorded into the next available location. Always remember to try recording with different velocities too and, of course, you can adjust those with the knobs as you record, plus switch gates on and off too. There's no NDub option for arpeggios.

Hit Rec again to leave arpeggio record.

Righty, that's almost all the available ways to put notes into your pattern. Hit the Edit button to save your pattern and return to the main screen.

11/12	off	**P**
bank	FTS	tune

Force To Scale

Now Force To Scale is COOL. I've resisted talking about it so far but the time has come. On the main screen you will see that F2 is marked FTS and set to off as it is after a bank initialise.

Hit F2 and see the screen shown below.

Force To Scale: Scale Selection

C	all notes	
save	apply	lose

You'll see the default scale and root - in this case *all notes* are allowed and the root is C (not that it matters when all notes are allowed).
Turn the data entry knob. This lists all the different scales that are available. As you turn the knob, an asterisk appears next to F2 - apply - so hit F2 to enable that particular scale. Try a few different ones. Depending on the notes you entered earlier, you may not hear a lot of difference. If necessary go back into your Pattern and enter some wildly different notes. Then return to the scale selection with renewed enthusiasm.

Force To Scale: Scale Selection

G	arabian	
save	*apply	lose

Change the root of the scale by pushing one of the trigger buttons - these work up to button 12 which corresponds to B in the scale (the lowest button is C). As you push each button, the screen shows the note this corresponds to and the apply softkey gets an asterisk, showing it is ready to be applied when you want. When you're happy you can hit F1 to save it for this Part (we'll get to Parts next). Or F3 to lose all the changes you made.

Note: the main screen display is a handy reminder of what key you're in!

Scale Edit

It gets even more interesting when you realise you can create up to 9 user scales! From the scale select screen, turn the data entry knob far to the right. Here you see the user scales. Select one of them - it may not do anything exciting at the moment. Hit save (this performs the apply and save together). Now the main screen will show your scale as Unn where nn = 01-09.

11/12	G u01	**P**
bank	FTS	tune

Hit Func + F2 to enter Scale Edit

Force To Scale: Scale Edit

	Scale	edit
save	exit	lose

There are three softkeys - F1=save, F2=exit, F3=lose. Nice and self-explanatory. The scale is edited using the step trigger keys.

Think of this as a filter. If all steps are lit up this is the equivalent of all notes passing through the filter. If you turn off all steps you are left with only the root of the scale, whatever you set that to earlier, allowed to pass through. We'll think in terms of the scale of C - indeed the trigger key 'keyboard' is laid out to assume this. So if you need a scale that includes just the root and a fifth, in the scale of C this would be C and G. G is 7 semitones above C so this corresponds to trigger key 8. Hit this step and the display flashes "G" in confirmation. You now have a scale that allows just two notes through.

Remember that you are editing the scale as the sequencer plays - how wonderful is *that*? The scale edits apply to all tracks; the only notes that escape the filter are any you previously set to "X" in your Pattern.

Add a few notes into the scale and hear the changes that are made instantly. There are all kinds of scales (and modes, to be strictly accurate) to play with. I use Aeolian quite a lot but that's just me.
You can edit the factory scales too - but you can't overwrite them, fear not. Doing this is useful to see what notes are included in these scales and they are also listed in the reference manual.
With a little experimentation you should soon get the hang of scales and realise how handy they are live when you don't want to stumble across wrong notes as you bang notes in, turn knobs etc.

Hint: Using Thru to Force Input Notes To Scale. You can use the P3's thru function to rescale your input notes so you can play a module knowing you can't play a wrong note. A nice realtime feature you may enjoy. Try Func+Thru on the channel selection screen to toggle this.

Do you recall that there was a FTS setting in the realtime record screen that we ignored? Well, go back into pattern edit. Hit Rec. Hit Page to get back to this screen.

Pattern Edit: Record Page 2

off	off	on
ties	FTS	Dub

Here, F2 sets FTS to off. Record some notes and you'll hear that they now don't go through FTS.
To hear the effects of this clearly, set ties off, FTS off, NDub off and play some wildly wrong notes. Use the mode button to get to the X row and you'll see that each note you record gets its X flag set by the record process. This is handy if you want your sequences to sound odd, wrong or just plain crap. Oh, but it's good for drums.

OK, when leaving Pattern edit take the "lose" option as we don't want any X flags set at the moment.

MIDI Input - Track Record

Before we look at this chapter's last section - Parts - let's get the final method of recording out of the way: track Record.
From the main play screen, hit Rec + Track 1. This should be the only track currently doing anything.
Note that the track LED goes red.

Hint: Recording A Muted Track. You can do Track Recording even when the track is muted, in which case the track LED glows amber (assuming you have the standard LEDs fitted).

Recording into a track is slightly different than within a Pattern because there is no chance to lose your changes. Therefore when entering this record mode, you enter *record-ready* mode.

Track Record: Page 1

ready	on	<<REC>>
recrd	mthru	del

F1 toggles between record-ready and record-active status
F2 sets thru on or off
F3 allows you to delete notes. Hold it down as the notes pass and they're erased.
Page takes you to the second record page as before with ties, FTS and NDub on it.

Set FTS on.

Track Record: Page 2

off	on	on
ties	FTS	NDub

Hit Page again to return to the first page and then hit F1 to set recording active. Play some notes.

The notes are written into the pattern. If you cock up, at least FTS is on and it won't sound too terrible. Use the del softkey to get rid of any unwanted notes or simply play over the top of them.

Hint: P3 as MIDI Looper. This makes the P3 into an instant "MIDI looper". When you use Playlists - we covered them in the previous chapter - you can record to each Pattern as the P3 selects it. If you have a Playlist of, say, four Patterns running in succession you can record into each one directly. Nice.

Finally, hit F1 again to enter ready mode or the Rec key to leave recording.

Chapter Four - Parts

So far we've used the first Part only - but the P3 has 8 Parts available. A Part is used to store details of which tracks are active, the FTS setting, Playlists for each track, an overall transposition value etc.

So for each Part you select a combination of tracks to be active and recalled as the Part is selected. We've only created one track so far but it's time to do more. From the play screen, hit button 10 - this corresponds to Part 2. In a newly initialised bank this activates all tracks, sets FTS off and you'll probably find you have selected a playlist on our previously active track that points to a pattern with no data.

So hit button 9 again for our original Part. We'll do something different.

Hit Page and you see a second page showing the Global Bar length (GBar), number of part repetitions (PCRep) and part transpose setting (PXPos). Ignore these for now and hit Page again.

The softkeys now have settings of "mute hold", "part all" and "copy active". Something like this:

Part Operations: Copy

mute	part-copy	**P**
hold	all	active

For the time being, take F2 to copy everything we have to a new Part. To do this, hold F2 + key 10 (Part 2) simultaneously and everything carries on playing smoothly but in fact you've copied all the settings to the new Part. Hit Page again to return to the main play screen. Now hit F2 and select a new scale, just for the hell of it. A new root too if you want to liven things up.
This continues to loop and you can select Part 1 again to hear the difference.

Return to Part 2.

Hit Edit + track 2 - note that you have not *activated* track 2 but don't worry about that. Activate a few gates, record MIDI input, use whatever method you like. Once you've done that we'll look at how tracks can be enabled without leaving edit mode.

Track Enable During Pattern Edit
Hold Func and without releasing it, push play/edit momentarily. You will see the main track display with just track one active. Hit key 2 to activate the track you are now editing. Release the Func key. Done.

Now you can leave the pattern or tweak it some more. For wackiness, set the

pattern length to 12. You'll see why shortly. I'm sure you remember how - hit the page key then hold F3 (last) + button 12. Save and return to the main screen.

We're still using Part 2 and it has two tracks active. They loop around and the difference in pattern lengths is kinda pleasant. Well, it is here. I have no idea what yours sounds like.

Hit Part 1 again and just track 1 is playing. That's how things were the last time you used Part 1.
The P3 lets you build up Parts like this as you play. ***Wouldn't it be great if you could tell it to play the Parts in sequence?*** Well, you can.

Hold down Part 1 and, without releasing its key, hit the Part 2 key. Release them – either at same time or the right-most first. The two Parts now loop around in order. Lovely! You can see the actively played Part in red and the amber flashing LED indicates the part(s) that will play next in sequence. Always select the lower-numbered Part first then, keeping it held, select a higher-numbered Part and, in this way, you can play all 8 Parts in order if you like, looping happily around.

Return to playing only Part 2 by hitting its button in isolation.
Now hit Page twice as before and again use F2 to copy your Part to Part 3 (button 11).
Hit Page twice more until you're back at the screen with the GBar and PCRep settings.

Part Operations: Part Settings

16	1	0	**P**
GBar	PCRep	PXPos	

Hit F2 and turn the data entry knob to select 2 repetitions.

Part Settings: Repetitions

part reps	=	2
enter		cancel

Hint: Pausing Consecutive Part Play. If you enter the screens that alter repetitions, transpose etc. whilst Parts are playing in succession, it halts the progression and so can be useful even if you don't intend to make any changes.

Now hit F1 (enter) to confirm your 2 repetitions. Only this part is playing so you don't hear any changes. Now hit F3 and turn the data entry knob. See how the values change from 0 up to 63 then toggle over to -64. This makes it easier to find the positive and negative transpositions you'll need. Turn it all the way round until you reach -5. Hit F1 to confirm this and you instantly hear the transposition.

OK, you're doing well. Next, hold the first Part and the third Part keys as before because we want to get the three Parts playing in order. Notice the third one plays twice through and transposes too - that's what we just told it to do. You can add more tracks, alter FTS settings, have different playlists for tracks and so on for each Part. Or you could set a different Global Bar length...

The Global Bar

No, it's not some huge international pub, more's the pity.
The Global Bar is a means of synchronising Patterns of different lengths, should you wish to do so. I've deliberately avoided it up until now, even when talking about Playlists but it's an impressive weapon in the P3 armoury.

Each Part may have its own Global Bar length from 1 right up to 256.

Part Settings: GBar length

Gbar = 16
enter cancel

Remember in Playlist edit we looked at the ways a Pattern can play back? We concentrated on a type of P where the Pattern loops according to its own length.

Now return to our second Part with no other Parts selected.

Use Func + the Track number to enter Playlist edit. We only have the one Pattern but if you recall we set it to 12 steps in length. At the moment, it changes according to its own length - so loops around evenly every 12 steps.
Hit F2 in Playlist Edit and it toggles to "B" - meaning it is now synchronised to the Global Bar - which for convenience I'll call GBar from now on.

The GBar is currently set to a length of 16. Our 12 step Pattern therefore plays its 12 steps and then starts again. However once it has played four more steps the Gbar reaches its end and the Pattern now restarts at step one. This is the result of chg=B
So you have steps 1-12
Then steps 1-4
Then steps 1-12
etc.

Hit the Func key to save the Playlist. Select Part 3 and your Playlist is still running freely so you can hear the difference. Go back to Part 2, hit the Page key and then F1 to change the GBar length. Set it to 6 using the data entry knob then hit enter (F1). If necessary turn off track 1 so you can hear your 6 step Pattern more clearly. Set the Gbar to 1 and you get just one note although any playing Patterns not synced to the GBar play as normal. Experiment with new

tracks and mixing the way odd-length patterns play back.

Hint: Global Bar Fun. Large GBar settings are great for introducing occasional little changes to patterns. Try a GBar setting that is not a perfect multiple of 16 when using 16 step patterns synced to it.

There is bags of potential for quirkly little changes here.

I know that wasn't an exhaustive tour, but play around with your Parts for a while and enjoy them. If you're a guy, this probably comes naturally. Checkout the different Part copy operations too - mute hold and part active. The reference manual explains all; be aware of User Config options and decide whether you want to maintain track mutes as you switch between Parts.

Chapter Five - Introduction to Aux Events

We've already seen how the P3 can send MIDI Continuous Controllers to vary such obvious parameters are filter cutoff, resonance and so on. This makes our innocent-looking sequencer pretty darn powerful and those 4 CC events per track are a great way to add dynamics, timbral changes and suchlike to your synth. But wouldn't it be lovely if the P3 could sequence its own parameter changes; self-modify and create variations? If it could alter the notes it plays automatically, randomly adjust velocities, occasionally (as if it had a mind of its own), alter the length of a Pattern or mute a track or change the direction of a Pattern's play? You can guess already that the P3 *is* able to do these things - and more. This is the chapter where we start to examine how.

Let's go back to a Pattern we created earlier. It doesn't actually matter which one but something simple is best. Keep the Playlist to a single step and don't really do anything much else except have your pattern loop around.
Enter Pattern edit.
Holding Func, hit the Mode button twice. If you keep hitting it the lower Mode LED progresses through the four rows A-D, but we'll stick to A for now.

You know that turning the data entry knob selects the continuous controller to send. But there's another set of things this row could do instead. Hit Page. If you started at a screen saying CC # 0, the screen now says something like "grab note trk n". Turn the data entry knob and go "wow" as you view all the options. It's allowed.

Pattern Edit: Aux Event Selection

grab	note	trk	n
enter	nxt		cancel

You are now seeing a list of available Auxilliary Events - perhaps the single most exciting and radical thing the P3 has to offer, in my opinion. They are what sets it apart from everything else and lets you do things that no other hardware sequencer has ever bundled together before. OK, no need for an advert, you get the point. Or you will soon.

Let's explore some of the simpler Aux events.
Turn the data entry knob until the screen says "Rndmz note".

Pattern Edit: Aux Event Selection

Rndmz	note	
enter	nxt	cancel

Hit F1 - enter.
Set some steps active for this event type and turn the upper knobs to set just how much randomisation you want for each step. Isn't it handy that some steps

can be changed more randomly than others? A randomisation value of 0 means it won't make any randomisation and 127 is, of course, the maximum.
And since FTS is still on, you won't get any "wrong" notes thrown up by the randomisation, so that's a relief.

Leave that running happily and do your Func+Mode thing again. The LED should increment to row B. Hit Page to get back into the marvellous catalogue of Aux events; let's see what else we might want to play with.

Turn data entry until you reach "Rnd mask gate". Hit enter.

Now you can set which steps may or may not play depending on the degree of randomisation you set. Those steps that are more important should have a high setting and those you only want to hear now and again should get a low number for the masking.

Carry on because you're on a roll! Define Row C as "aux note rel". Set it active on a selection of steps - make sure you include some of those that are getting their note values from a random number too. Aux notes are extra notes that you define to play on steps, forming chords. In this case the extra notes are relative to the base note of that step. Turning the knobs sets the offset, so +5 is 5 semitones up from the note; turn the knob all the way round to get the minus values, so -12 gives you an octave below. With all 4 of the CCs doing notes like this you can play 5 note chords which is soooo useful.

Our final aux event is going to be in row D and it's an easy one too - we're going to look at the more complicated aux events in the next chapter.

Set Row D to be "rep*3 note +n"

Now set some steps active and move the knobs to set the offset for each of the three note repeats. Ah, Chris Franke eat your heart out. Notes with this aux event active repeat each time and you can specify for each of them the degree of note offset. For instance, a value of +12 means that each repeat goes up by an octave. A setting of -1 means each repeat goes down by a semitone. Remember that FTS settings will prevent things from sounding cack - assuming you want this.

Hint: Masking Events. Look at some of the other Mask events and consider randomly masking the repeat event you just created so that the repeats don't happen every time.

There are plenty of other aux events and it isn't really going to be possible for me to think of every possible way they may be used. That's the best thing though! However, we *are* going to look at some of the ways a pattern can really self-modify or morph from one sequence of notes to another, or pick a selection of

values from a list rather than use random numbers and swap values from one track to another. Actually, some of those I'll leave for you to explore, but for now, play with these simpler events until you're happy they make sense. I've moved quite quickly and it's best to get a good understanding of this stuff before tackling the next chapter.

Chapter Six - Aux Events, woooo!

You now know how to create some pretty intricate stuff using Patterns, Playlists and Parts. You have tinkered with Force To Scale, created Patterns from realtime input, note sculpting and randomisation. You have explored all the simple functions and peered nervously at some of the deeper elements like the Global Bar and basic Aux events. Now we should look at some of those Aux Events I deliberately held back until now.

Some Aux events use *accumulators*.

Accumulators

The P3 has three so-called Accumulators. Think of these as counters - but counters whose behaviour you can control. They can count up or down. And you can determine what happens when they reach limits you set.
Anyone who has used a Latronic Notron will have a good idea what I'm talking about and will probably drool at the way the P3 implements this function.

The Accumulators are for:

- Notes
- Velocities
- Auxilliary D

So, put simply, the note accumulator can force notes to go up or down in pitch each time the Pattern plays through. The velocity accumulator can increase or decrease the velocity of notes on each pass. And the Aux D accumulator can do, well, practically anything - which is why it is potentially the most powerful of all.

Each pattern has its own Accumulators defined. Let's look at how you set their behaviour.
Go into Pattern edit. Func+Page takes you to the Randomize submenu. Hit Page a couple more times until you reach the screen where F1 is "Acc conf". This is the Accumulator Configuration menu.

Pattern Edit: Accumulator Config, Note Range, Apply FTS

Acc conf	note rng	Apply**E** FTS

Hit F1 and you see the Note Accumulator limit - by default set to 32. This is the maximum amount of offset the note accumulator can make. Turn the data entry knob to increase or decrease this value. For notes a value of 24 means 24 semitones - or 2 octaves. Let's choose this.

Accumulator Config: Notes

Note acc lim		= 24
A:rtz	R:clip	OK

You can get the full, up-to-date details on accumulators in the Reference Manual. For our purposes, we will set the behaviour of the note accumulator to reverse so that when its limit is reached, it goes backwards. Hit F1 until it says “rvrs”. Leave F2 at “clip” and we’re happy. Next hit Page to reveal the velocity accumulator defintions. We’ll leave that alone for now and move on to the final config page - Aux D. Set this limit to 127 but leave it at “rtz” (Return to Zero). Now hit F3 - OK. This confirms all the changes you’ve made. Now Func+Page will take you back to the main edit menu or Func+Mode is even quicker as it takes you straight to the Aux definition screen.

Accumulator Config: Aux D

```
AuxD  acc lim = 127
A:rtz      R:clip     OK
```

Note: The Aux D accumulator affects values of any active events in the Aux D row - either MIDI CCs or other Aux events. You don’t <u>have</u> to put anything in the Aux D row at all - you might, instead, use the accumulator count to make various other things happen...

Now we’ll set some accumulation in motion. Turn the data entry knob to select “offset note rel” as our event type for Aux A. Switch off all other auxes so you can hear what’s happening. On the first step of the pattern, set Aux A active with a value of +1. Now each time that step is reached, the note values sent out are shifted upwards by 1 semitone (subject to FTS settings, as ever). The notes keep going up until they reach the limit we specified earlier - 2 octaves. At this point they start to go down in pitch again and keep going down until they reach 2 octaves below our starting point. Then they reverse again. And so on. It’s good isn’t it? You can select different shift intervals too - set it to +7 and you have the pattern shifting in fifths. Or change the offset at different points in the pattern. Supposing you want some notes to be unaffected by the shifting? You can either use X - protect from transpose - or another Aux event “note acc defeat”.

Alrighty. The velocity accumulator works in the same way. The Aux D accumulator does too but it has lots more uses. Let’s play with some of them.
Set Row B to be “Mask gate,dAcc>n”
Set Row C to be ‘offset aux D rel”
Set all steps of row B active and set the values using each upper knob to a range of values starting at 0 and ending at 127.This is where it’s useful to set the knob values before enabling steps. Enable all steps
Set the first step of row C to be active with value +1
As the pattern plays, the aux D accumulator increases (due to the offset Aux D event) and the gates are duly *un*masked as the Acc>n setting of each is exceeded. *The event name is possibly a little misleading as it looks on-screen. The event masks the gate <u>unless</u> the accumulator limit is exceeded.*
To make things happen quicker, increase the value of the event in row C.

If you wanted all the steps to come active and stay active, set the D accumulator behaviour to Clip rather than “return to zero”. Now when you start playback the pattern will gradually fill out from the start and then keep playing permanently. In this example I chose to get it to fill out from the first step but you could group bunches of notes to come in at the same time if you wanted by setting their row B values to be the same. Experiment and you’ll understand better. Also note there are Aux events for absolute control of the accumulators - you can set the limits from aux events too.

In that example we used the Aux D accumulator to gradually change Gate masking. We can do way more. You can mask other auxes based on it too. You can mute tracks based on the accumulator - handy if you want something to happen a specific number of times then stop. You can use the random functions we saw earlier and vary the degree of randomness - simply put the random event in Aux D.
You can put MIDI CCs in Aux D too. They then increment like a synced LFO and behave according to your instructions. You can see why I get excited about this stuff!

Think of some of the “Grab note” events you encountered at the start of the Aux list. You can grab notes from different tracks on each pass by putting the grab event itself in Aux D then setting the accumulator to increase (using the offset Aux D event). You really should stop reading this and experiment!
Or you could change the value of auxilliary notes so that chords you generate change over time. And when you start to look at the event “Aux D = cc #n” or “Aux D = event #n” for example, you realise you could send a different CC or P3 event on every step of a sequence!

Then there’s using the event “set norm tbase” to step through different timebases and alter the playback tempo of your Pattern. The world’s your lobster, really. And look at the Set Note event; use another event to unmask it as the D accumulator increases. By programming your Set Note events to create an alternate sequence, your original sequence morphs into the new one - and back again if you set the accumulator behaviour accordingly.

Accumulator Behaviour

RoPS	XDAcD	
On	off	OK

The sharp-eyed amongst you will have found the above menu (after the Accumulator Config pages). This determines whether accumulators should be reset when new Patterns are selected (i.e. in a playlist), plus the menu also offers the opportunity to exclude Aux D from accumulation. This latter may seem odd but, in fact, there are plenty of occasions where you want to perform comparisons against the Aux D accumulator but don't want the values in Aux D to change. The comparisons might be stuff like masking gates unless the step value exceeds the Aux D accumulator value - so in this case you're just using it

as an incremental counter-type-thing.

Event Scaling

I should mention here that Aux events tend to be governed by numbers with a 7 bit resolution. This is what you'd expect for MIDI controllers, velocities and so on but how about when it comes to some of the Aux events such as tracks, parts etc.? The P3 allows Aux events that mute Tracks, select Parts, select data from other Tracks and so on. For clarity you can see these *represented* as numbers ranging from 1-8 (for example) but what you should remember when using them for Aux events is the *underlying* numbers are always 7 bit.
Here's an example to try to make it more obvious:
If you were using the "Grab Note trk n" event and you had placed this event in Aux D, turning the knobs would let you select tracks 1-8. The display is scaled to show numbers 1-8 and you could therefore get a note from any track on each step intuitively and without any head-scratching. This in itself is cool; the P3 is hiding the complicated stuff.
Now suppose you want to get notes from different tracks as your pattern progresses. You'd increment the Aux D accumulator - using "offset Aux D rel" in another Aux row. Remember that the full range of tracks is only available from the offset action when you set the accumulator limit to 127 - not 8 as you might expect. This is because the full range of the accumulator is always shown in 7 bit format - it does not know what use you are going to put it to. You could put it to multiple uses at once actually but let's not go there today.
Try it out; experiment with the offsets and you'll find setting them in offset multiples of 15 (or is it 16? I'm not at my P3 right now) will give proper track increments.
I realise that was a crap explanation but I think Colin is going to put a scaling chart into the manual and this will be a better reference. Just remember that whatever numbers you are using, the numbers underneath and the accumulator limits are all 7 bit with a range 0-127.

More Aux Events

Right, having given you a taster of accumulators, I just want to look at a few more events that are favourites of mine - then I'll stop!

Let's consider "Grab note trk n" again. Sounds innocent enough doesn't it? Well yeah, but try it out by grabbing notes from a track of a different length and see how splendid *that* is - you get these shifting patterns that still have a lovely symmetry to them. Or grab notes from a track playing in a random direction. You get notes from the same fixed list but never in the same order. Use this principle for controller events, or MIDI program changes or velocities.
Getting gates from another track is jolly useful; if you want something to happen only when another note plays, this is a way to do it. I once knocked up a pattern to control my Sherman Filterbank so its envelopes triggered when a bass note played on another track. It meant I could filter even notes that had slow attacks rather than relying on audio threshold triggering. OK, that's a little specific but

was vital to me at the time.
Perhaps you have some tips of your own to add - please send them to me, along with any corrections you have to this document. I'm bound to have got things wrong as I wrote the bulk of it one Saturday afternoon over a bottle of cheap Sainsbury's Medoc.

To allocate a MIDI CC to a front panel knob:

I asked for tips and got one – one so vital I thought it should be in the main body of text rather than with my tips at the end. You see, stupidly, I forgot to illustrate how to define (any of) the knobs to transmit MIDI CCs; Tom Adam kindly pointed this out – cheers! This example shows how to make the P3 into a basic MIDI control box – it does depend on the pattern containing the knob defitions to be active at all times and transmitting on the correct track.

- Create a pattern.
- Set aux D to a CC# (In this case CC 44: ENV amount on a Virus)

Note:You don't need to have any steps active in aux D – naturally if you do this value will be sent every time the step(s) are passed by the play loop.

- Set aux A to "knob n to aux D" – make sure you remember the numbering order for knobs and don't assign one to one of the mixer knobs, if you're using them for MIDI mixing.
- Set all steps active, value e.g. 6. As usual, you don't need to set all steps but each time you have a step active, the knob activity is scanned during playback. So how many steps you active controls the "resolution" of the knob turns.
- Return to the main play screen.
- During playback, turn the lower knob above step 6. You can hear the Virus' ENV amount change.

Finally, remember there are Auxes available to redirect subsequent auxes to a new track. You can therefore increase the available number of auxes from 4, effectively. Or automatically send CCs to another track.

Chapter Seven - Tips

Some examples refer to files found at:
http://deepbass.demon.co.uk:81/Paul/mp3/
Also check the Yahoo group for online tutorials in mp3 format plus there is a "preload" sysex file called P3Demo1.syx with an associated PDF file explaining the example banks. It's a sort of Quick Start for more advanced features.

1: Speed Control

A fun feature of the arpeggiator. Suppose you have a "set tbase" Aux event in your pattern at, say, step 9. As long as you make short arpeggios - up to 8 notes - this step is never reached and the event never activated. So the tbase set in the pattern is the one in effect.
Then, when you want to alter the speed - make it go twice as fast maybe - just play a chord with 9 notes and whoopee there ya go. It reaches the step and activates the tbase Aux which is set to whatever value you want.

Of course this trick can be used to activate all sorts of other things - program changes, controller tweaks, muting/unmuting of other tracks etc.

2: Ghost Tracks

One file at the website - called P3_Stoned37.mp3 - is made using the following cool trick:
First make a groovy sequence in a muted track.
Then setup another track (or, better still, tracks) with Aux C getting ALL from that track.
Aux A for "getting" track should be setup to increment Aux D rel
Aux B should be set to mute Aux C>Aux D accumulator.
Then make each sequence in each track totally different. THEN as the P3 plays and Aux D increases, the sequences get more and more like the groovy muted sequence until they become identical. They are ghosts or copies of the muted track.
If you set the Aux D behaviour to reverse, they go back again eventually. You can do different Aux D config behaviour in each patter too.
The example file is a recording of part of it and in it I set the D accumulator to only increase gradually.

3: Totally Random Event Generation

Create a Pattern with a sequence in it on one Track. Leave the rest inactive. As a precaution to what's coming, make sure all Parts have that same Pattern active

in that Track's Playlist (use Part Copy).

Now set Aux A to Randomise Aux B
set Aux B to : Aux D=event n
set Aux C to Randomise Aux D
It really doesn't matter what you set Aux D to... .8-)

Now save and hit play.

Anything can happen depending on the randomness factors. Consider varying the randomness using events from another track. Or muting the event changes every now and again.

4: Controller Send to Other Tracks

Here's an application of sending controllers:

Uses 4 tracks.

In my case tracks 2,3,4 and 8

Track 2
No notes
Aux A Rnd Aux D (all steps)
Aux B Events to Track 3 (all steps)
Aux C Set Lstep Rel (value 1 in 1st step)
Aux D

Track 3
No notes
Aux A Grab Aux B trk 8 (all steps)
Aux B Aux D=cc#n
Aux C Events to track 4 (all steps)
Aux D

Track 4
Sequence

Track 8
Muted (doesn't matter if any notes)
Direction Random
Tbase 4
Aux B AuxD=cc#n

Use this to set the CC number for each step to specific parms you want to

reprogram on your synth. Filter, envelope, mix, effects etc.

Then play and be amazed at the transformations of your synth. Use Sculpt and data entry to quickly setup all steps to same value (as in events to track etc) or Randomise with range of 1. Then vary tbase of track 8 if you want faster change of CCs. It's quite neat at 4 as you hear several changes of the same CC before it moves on.

In this example - P3_Stoned39 - there are 3*16 steps containing the parameter CC numbers of a Supernova with mixed tbases and also different repetitions for each of the 3 patterns containing the parameter numbers. So I repeat the pattern containing the parameters I want messed with most often. It's just one sequence of the Supernova so a little self-indulgent (shock horror!) but you can hear how many changes happen to the sound.

http://deepbass.demon.co.uk:81/Paul/mp3/

5: More Redirection

Setup a track - track 1 - with no notes of its own active
Setup another track - track 2 - and put in any notes you like
Go back to the first track and create an Aux event “auxes to track 2” as CCA and active on all steps
Create CCB with Aux event “Set notes” and create a trippy sequence.
Play track 2.
Then when you activate track 1, track 2 now plays the trippy sequence.
Consider an Aux event to mute and unmute track 1 randomly.

6: Dynamic Length Changes

Have a pattern grow gradually starting at 1 step up to 16 steps.

Set an Aux with “set lstep rel” value of 1 in step 1
That’s it!

To have the pattern go from 1 to 16 then to 15 steps, 14 steps, 13 steps etc.
Use the D accumulator and the “Set lstep abs” aux.
So ensure the D accumulator limits are set up to reach maximum and to reverse when they reach maximum
increment the D accumulator with offset Aux D rel
Have the Set lstep abs in Aux D step1
Hey presto!

7: One-Finger Chords

Use Arpeggio Record
Create Aux events for as many notes as you want in the chord - Aux Note Rel - on step one.
With arpggio record resetting on each new group (rong) play one note. Step one plays a chord based on your note plus the aux notes.
Play a different note. The chord changes, always relative to the note you record.
Make bigger chords by using extra tracks that get their note values from the track you are recording on and then have their own relative aux notes...

8: A Selection of Live Tips

Here are some of my favourite tips for live playing.

Store a tempo and program change in your bank. Then when the bank is loaded you can setup a multitimbral synth module, drum machine, synced delay, external arpeggiators all instantly. The program change sent out can be just once or each time you hit run - check User Config. I use this to get the right selection of sounds on my Nova/Supernova ready to go. Remember that the bank program change is sent out on the channel you defined for Track 9.

Use Thru.
I have a Novation Remote 25 keyboard connected to the P3's MIDI Input. The thru setting is set to Any and I can therefore control the levels of all my sequences using the sliders of the Remote 25, each set to transmit volume on the appropriate channel. I also have knobs and performance controls set to do things to various channels - if I want to play with the filter of the bass sequence, it's on the Remote 25's pad. I do this by organising my patterns so that bass is always on track 1.

You can also play each different channel using the P3 to "rechannelise" as you do with Cubase etc. Hit Rec and the track you want to play, ensure thru is on for record but don't activate record, leave it in "ready". Now you can play the synth allocated to that channel. A User Config option determines whether you can also send MIDI continuous controllers (CCs) thru also.

Use the P3 to liven up drum patterns.
Just because you have a drum machine connected doesn't mean you can't also send notes to the drum machine from the P3. Simple drum machines tend to have one loop length for all but you can send looping MIDI triggers to any drum you want and control the loop lengths from the P3 creating some cool polyrhythms.

Program limited duration effects
Say you want to have a pad start your track but only play for a while. You could

use the D accumulator and create events to either mask gates after a certain time or introduce gradually reducing MIDI volume (CC7) events. So you can let the P3 do its thing whilst you concentrate on something else. Similarly, you can introduce things after a specific time. Don't forget the Part Select aux event - handy if you prepare your Parts in advance (like washing them for example) and then want to select one automatically.

Safe Stop
Func+Stop enables "safe stop" mode. Use this if you feel you may hit Stop accidentally during the gig. Once this mode is enabled, you have to use Func+Stop to stop. Don't laugh, some of us need this...

9: Views

To see the Globar Bar countdown - handy if you use large GBar settings - push the top selector button.
To toggle between Velocity display, bar counter and GBar LED displays, push the Mode button from main play screen.

10: Restart

Hold Stop and hit Play. Keep stop held and repeatedly hit Play for stuttering restart effecty-type-thing.

11: Weird use of GBar

Set your patterns to sync to the Global Bar and set its length to 1. Copy the Part to all 8 Parts and then alter the Part Transpose settings for each of them. By holding the first and last Part steps down you have an 8 step sequence where each step is as many tracks as you have enabled, the "melody" created by transpose events. Shorten the sequence by holding a smaller range, increase it by increasing the GBar of each part. Play with Part repeats. It's kinda mad but fun.

12: Note Reveal

This uses an Aux event only recently added (as I type this) - namely "Mask Gate,knob>n". Actually I may have remembered that wrong because I'm just passing an idle moment away from the studio now.
This is cool for prepared performances where you want to start with a simple sequence and make it become gradually more complex (or, indeed, the reverse of this). You can set up the steps in advance by allocating one of the auxes to perform this function. Then set the individual step values so that the lowest

values of the knob reveal the base notes of the pattern and the higher values unmask the gates of the additional notes. There are no hard and fast rules so experiment with different settings - perhaps bringing in notes individually or in clusters. When you are satisfied, it's time to try it out. Save your pattern and return to play mode. You'll hear that the effect of the lower knob on the relevant track kicks in right away. Turn the knob through its full range to hear the unmasking of gates as the value gets higher. It's cool isn't it - and remember this happens without editing the pattern again. I'm pretty sure there will be more of this to come, perhaps unmasking auxes rather than only gates - and having different functions for the two knobs above each track. And knowing Colin he's working on an elegant solution to the inconsistency between knob position in edit and play modes. Watch this space!

13: Knob Action

In a newly-initialised bank, create a pattern on track 1 - make it16 steps and going up in pitch so what comes next is easy to spot.

Create the following Auxes:

Aux A Mask dAcc,Kn>n
Aux B Mask auxC,Kn>n
Aux C offset AuxD rel (ensure limits set to 127 and not reset)
Aux D set direction

For each Aux, enable just step 1. Set the value 70 using the upper knob for Aux A and B. Set the value 10 for Aux C so there are nice obvious offsets. Set Aux D to zero - which corresponds to forwards for the "set direction" event.

Save the pattern. Remember that the knobs are zero at the start until you start to turn them and this means no changes will happen until you turn them from zero upwards.

As it plays, you hear it play the pattern forwards as you'd expect. Turn the upper knob of the two above the track past the value 70. Nothing changes. Now turn the Lower knob past 70 and the direction changes begin. When you hear something you like, turn the upper knob back below 70 and it freezes the new direction. This is masking the D accumulator action. To return to the pattern's own direction, turn the lower knob below 70 - this masks the offset action. Experiment with both knobs and you see you can make this kind of change without editing the pattern.

14. Further Knob Action

Use the event Mask auxC,Kn->n
This event acts like a bandpass filter – it has a fixed width of 7 units and the knob masking works at the knob value plus and minus three units. Therefore the events are masked unless they fall within this range.
This is superb for entering a range of 16 different event values that can be selected using the knob in performance to drastically change your pattern non-destructively.
There are so many examples of this I'll just give one for now:
Create a 4 step sequence
Set Aux B to the above event - Mask auxC,Kn->n
Enable steps 1-4 of your aux row and set the aux values for Aux B to 60 65 70 and 75
Make Aux D Set Note and put in some notes that are quite different to the main sequence.
Save the pattern and play.
Turn the lower knob – just above the track button until it reaches 60. You should hear one note change in the sequence as you reach the value 57. Turn it a little further until you reach 62 – now you should hear two notes starting the sequence that are different. Continue and hear the effect of your knobbing. If you wanted to enable all events, make the values for row B closer together – within 7 numerical units. See how powerful this is?

15. Electribe Control

This is a good one when playing live and you have a series of drum patterns related to your bank that you want to activate from time to time with the P3. It also uses the upper knob to add fills. This doesn't apply just to drum machines of course; could be anything.

Set your track to the appropriate channel and create one pattern with some notes in it – possibly all 16ths snare drum hits would work well for this example.
Set the auxes as follows:
Row A Mask Aux B,kn->n
Row B Send MIDI PG
Row C Mask Gate,kn>n
In row A make sure one knob is set to zero – this is the knob that will select your "initial" program change to be sent (the banks start with knobs at zero, you see, until you move them). Set other knobs to values that make sense to you. I will use 70, 80, 90, 100, 110 to select five additional program change events. I like 70

because it’s sorta in the middle position and using leaps of 10 ensures I just get one program change sent at once.
Put the program changes you want into row B at places that line up with the activated row A knob events.
In row C give each knob a value starting at, say, 20. This means that all notes will be masked at the default bank load value for knobs (zero) and you only introduce them when you move past 20. You decide how to scale the numbers – probably having a few notes added to the pattern here and there with more and more as you turn the knob. Because we’re using the ‘>’ value, notes are revealed. This contrasts with the ‘->’ value used to define knob 1 that selects only the range we want in a narrow limit (plus or minus 3 units).
Now save the pattern and play. Turning the bottom knob to 70 selects a program variation. Turn it to 80 you get another and so on – but of course you only select from the programs you already decided on in the pattern. Turn the top knob and start to hear notes/drums/whatever added. Turn it back to zero to turn them off.

There you go.

16. Playing Sequence Variations with the track keys

This one uses an Aux event I rarely used before - "Swap All trk n"

First, I set a track with a simple, rather dull bassline in it pootling along merrily. Then I set up another track (8 in my case) that is directed to an unused MIDI channel (in my case 16). This track has a funky, lively, zappy kinda bassline in it. I then set up an aux event that is active in every step saying Swap All with Track 1 (this being the location of my simple bassline).

Now whenever I activate track 8, the bassline is transformed for as long as I have the track active. So by playing the key for track 8 I can introduce variations as and when I want. You could extend this further by having yet another track doing random mutes and unmutes of track 8 so your bassline would toggle between two possibilities according to chance.

17. Knob-grabbing orgy

…or something that inspires an equivalent amount of joy... ahem...

anyway, last night i combined the two styles of knob events and had more fun sequencing than i think i've ever had. here's the deal:

aux A: Mask AuxB Kn>n Step 1 value: 15
aux B: Knob n -> Aux C Step 1 value: 17
aux C: Set lstep abs Step 1 value: 127

aux b and c allow me to change the last step of the pattern whenever i want, creating lovely polyrhythms, and aux a lets me get back to the saved pattern. or it lets you set a particular lstep value and kick it in whenever i want. it's kind of magical... if it's looping funky, switching the effect will make it sync correctly with the rest of the tracks too... i don't know how this happens, but really i don't care. it rocks. :)

knob 17 is the top row knob above track 1 (which is the track i was using this stuff on), so i can set the lstep value from there, and use the note knob to switch the effect on or off. but there's no reason you couldn't use an empty track and aux redirection to leave the knobs above the tracks free for masking, while using the knobs above the equivalent part (part 1 knobs would redirect to track 1, etc.) to produce other effects...

this is a formula for much head-bopping and hand-waving... enjoy!

bleep.
out.

18. MIDI Channel Mayhem

OK, enough about knobs. For this one, first, set up 16 channels of plinky MIDI noises on your synth, or synths. This example uses just one pattern but sends information on all 16 MIDI channels.

Set Aux A to "Offset Aux D rel" and set a value on step 1 to, say, 16.
Set Aux D to "Set MIDI channel" and set each step to values 1, 2, 3, 4 etc. up to 16.
Set a gate on every step and change a few notes so you have a simple sequence.
Go into the Accumulator Config menu and set Aux D's limit to the maximum (127) and make it reverse (rvrs) when its gets to the limit.

Now set the pattern playing. Listen how the pattern always plays the same notes but the channels on which they play shift upwards in a rather pleasing, er, pattern. Experiment with the Aux D offset; make it lower so the channel shifts are less frequent or set the Aux D values too the same value on every step so the entire sequence shifts through each channel. Or set groups of notes to the same channel and other groups to others. You could even use masking for the Aux D

events so that the channel overrides are ignored depending on the masking criteria you pick. You either lover or hate this stuff I guess; I love it, naturally.

19. How do I set all steps to same note value?

Several ways:

Set the first step in the pattern to the note you want, then use the Page button until you reach the clear/copy/paste page. Execute Clear and the note position of knob 1 is written to every step.

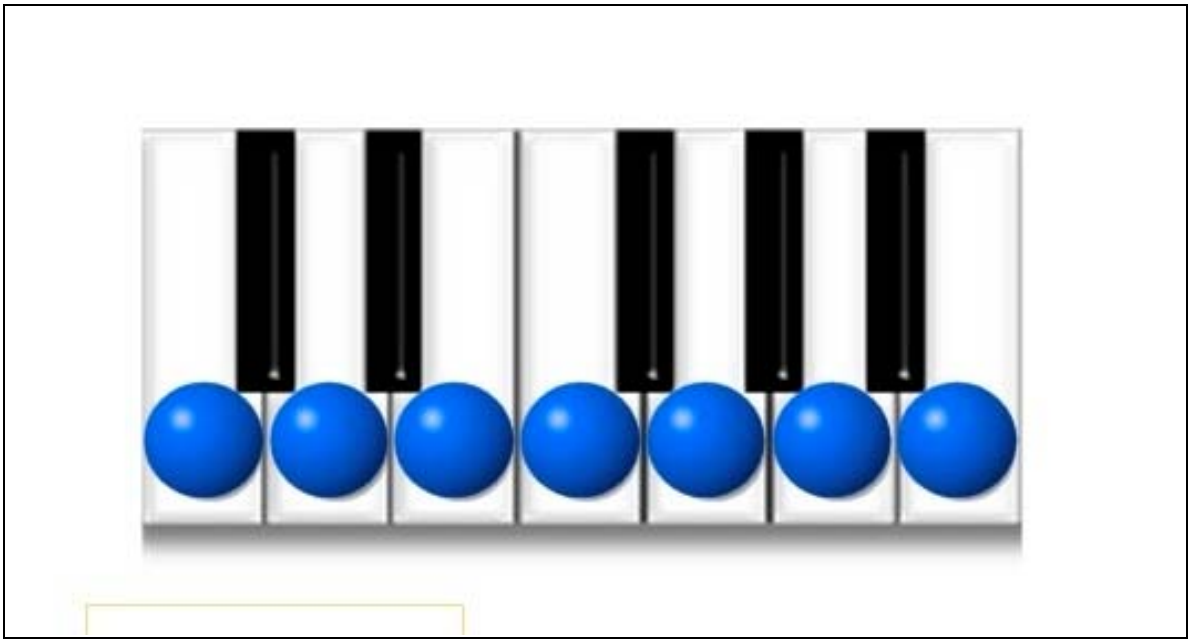
If you have a keyboard attached, record every step from that. In Pattern Edit hit Rec, hold down the note you want until all steps are filled. NB Page button from the Rec page should show ties as being off. Usually, for drums, you probably don't want legato.

Another method: set all steps active. Func + page (takes you to Randomize screen), hit Page and Page again until you see Sculpt. From this screen hold F1 (note) as the pattern plays and turn data entry (left of tempo). Notes entered are shown on the display and when you get to the one you want, let it record into every step.

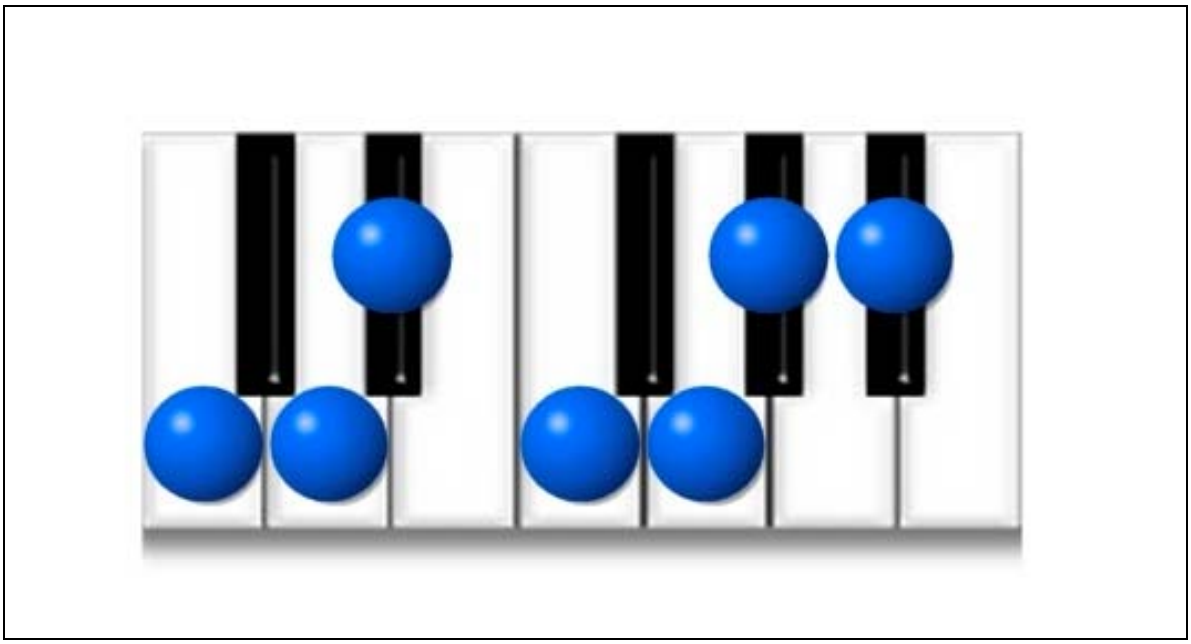
Last method (although there are others). After the Sculpt page is one with Acc Conf note rng and Apply FTS on it. F2 is note rng and if you hit it, you get the base note. Adjust this with the data entry. Now moving any note knob (the lower ones) to the left sets it to the base note.

Appendix A: P3 Scales (based on root of C)

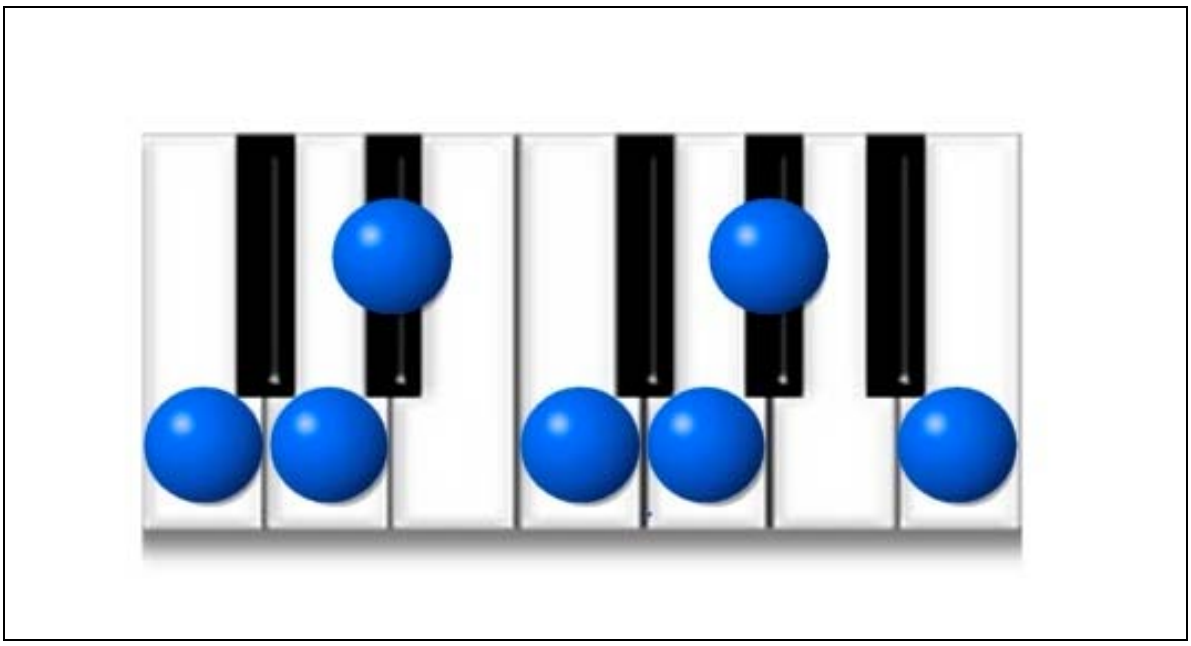
Major



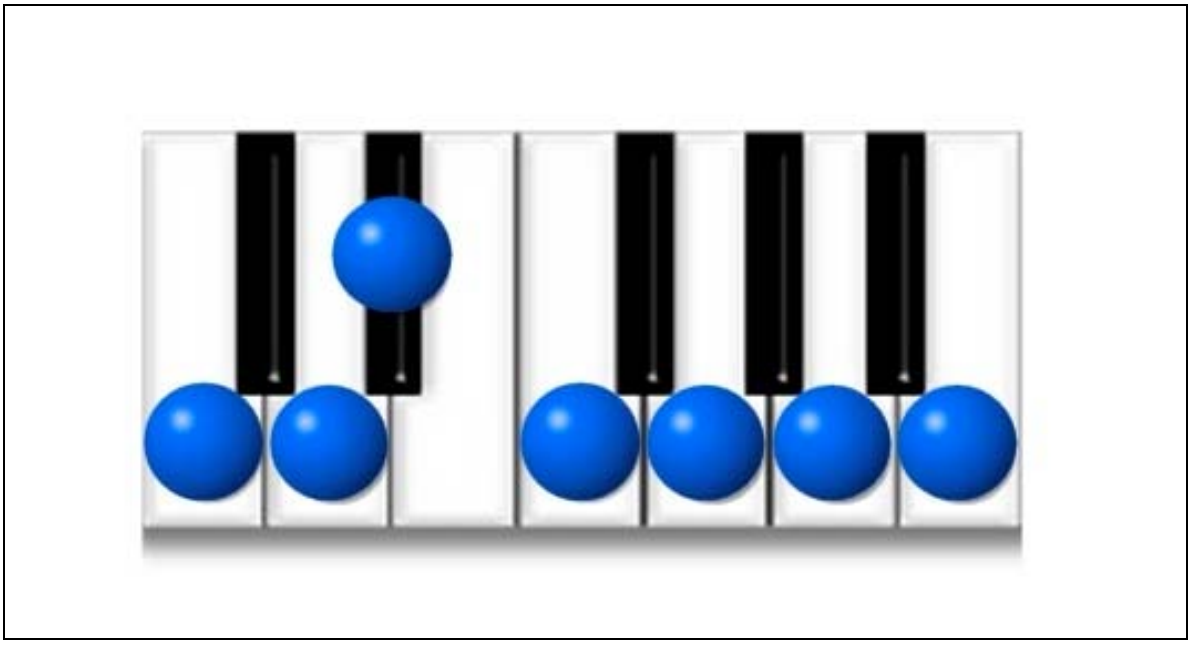
Aeolian



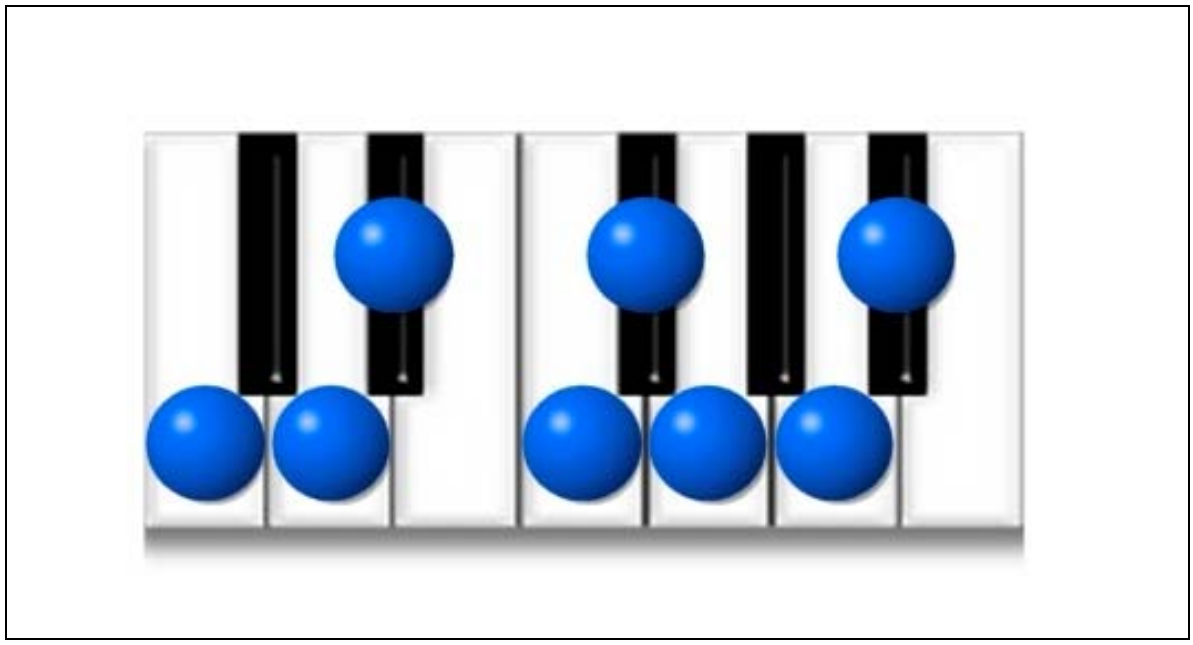
Harm. Minor



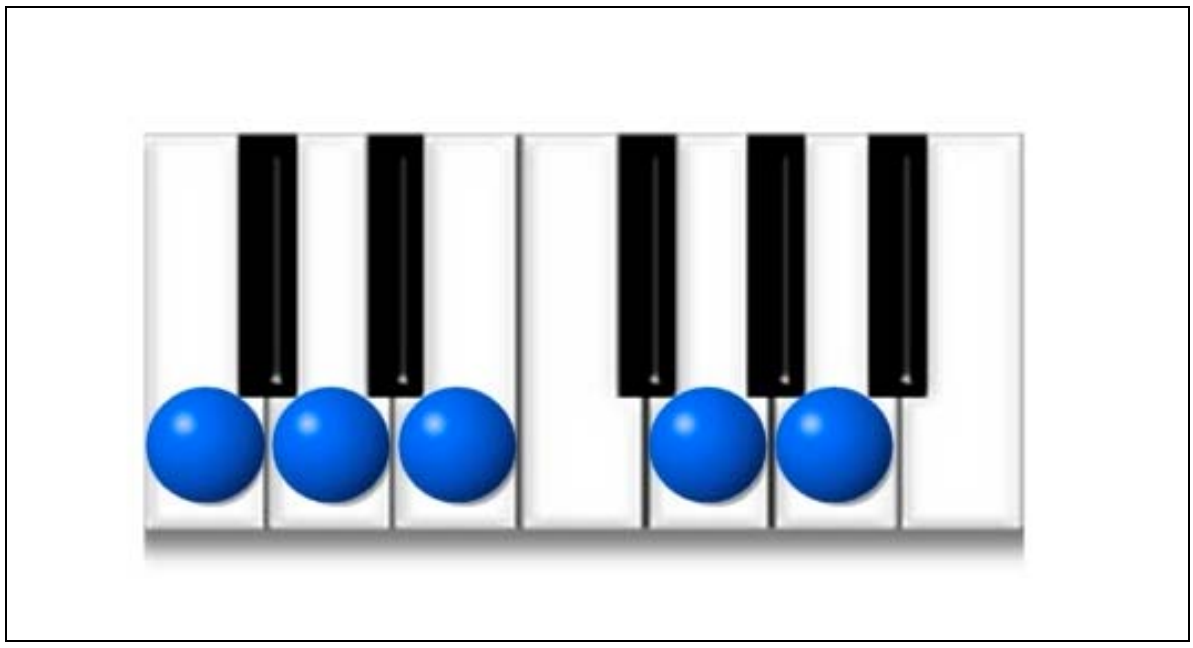
Mel. Minor



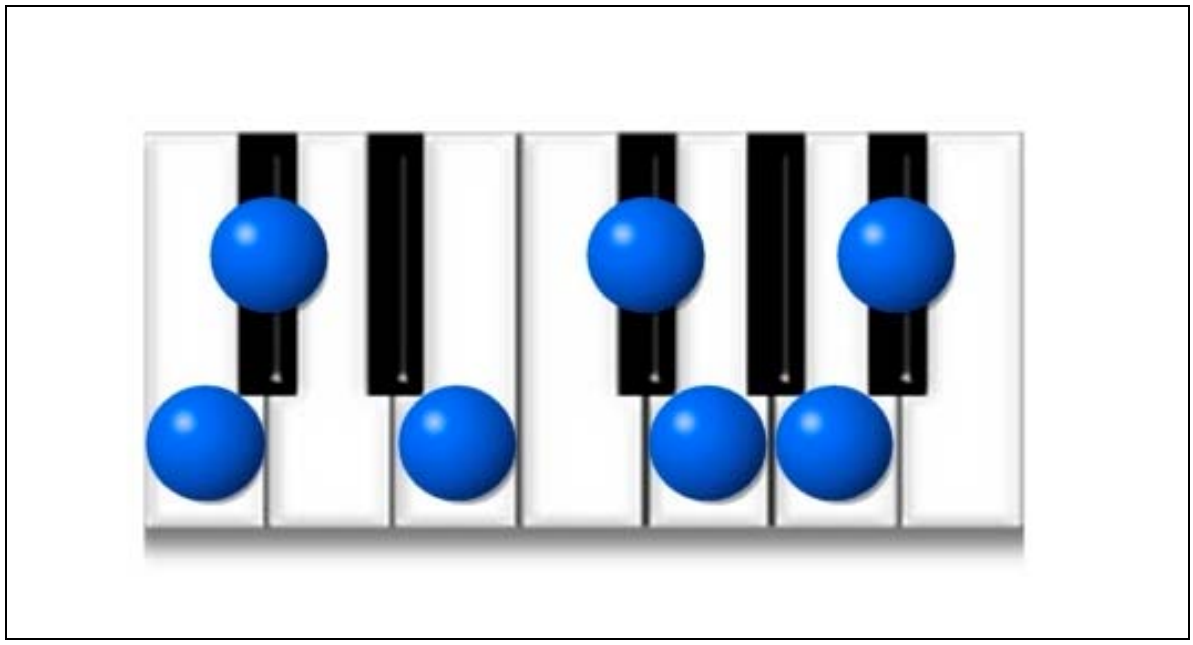
Blues 1



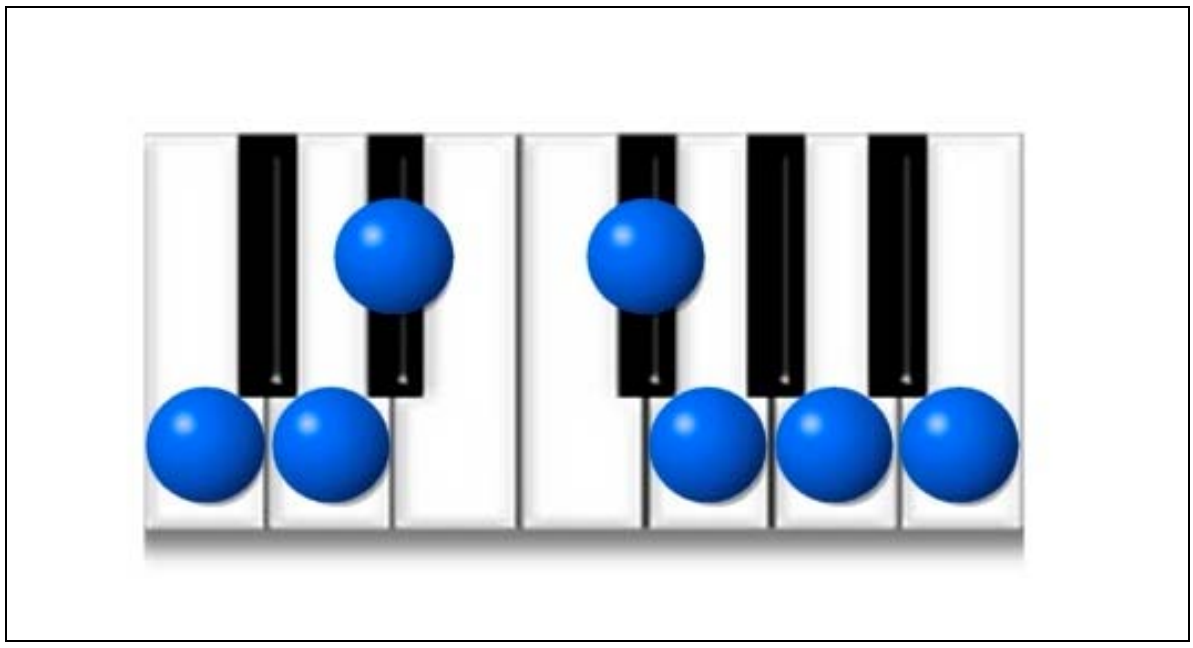
Pentatonic



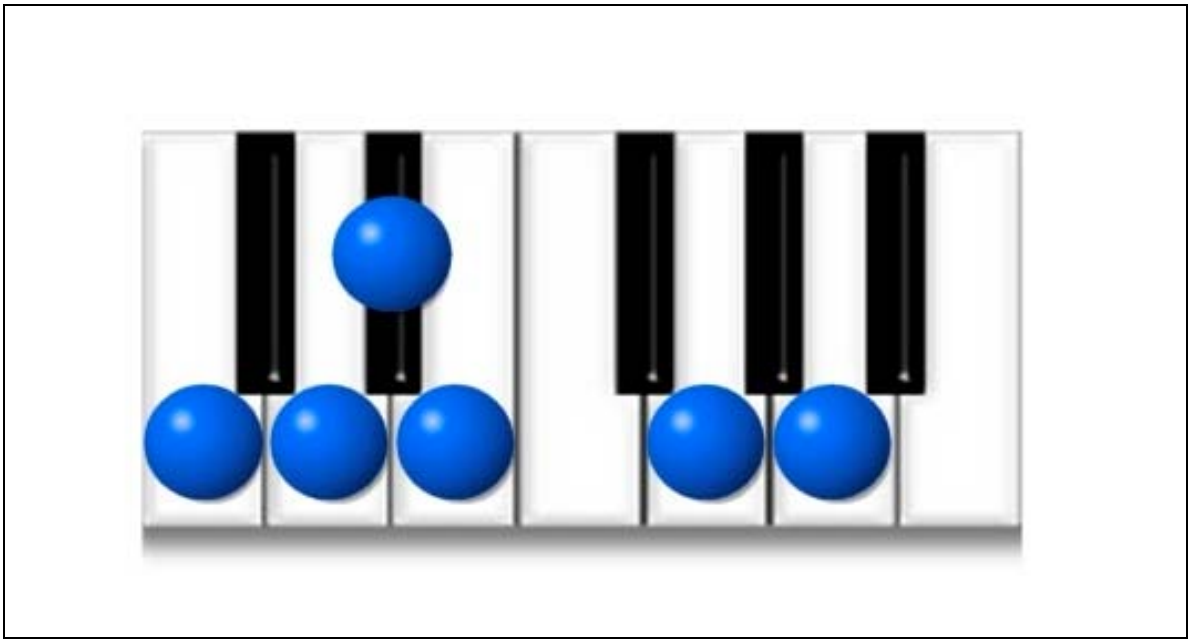
mixolydian



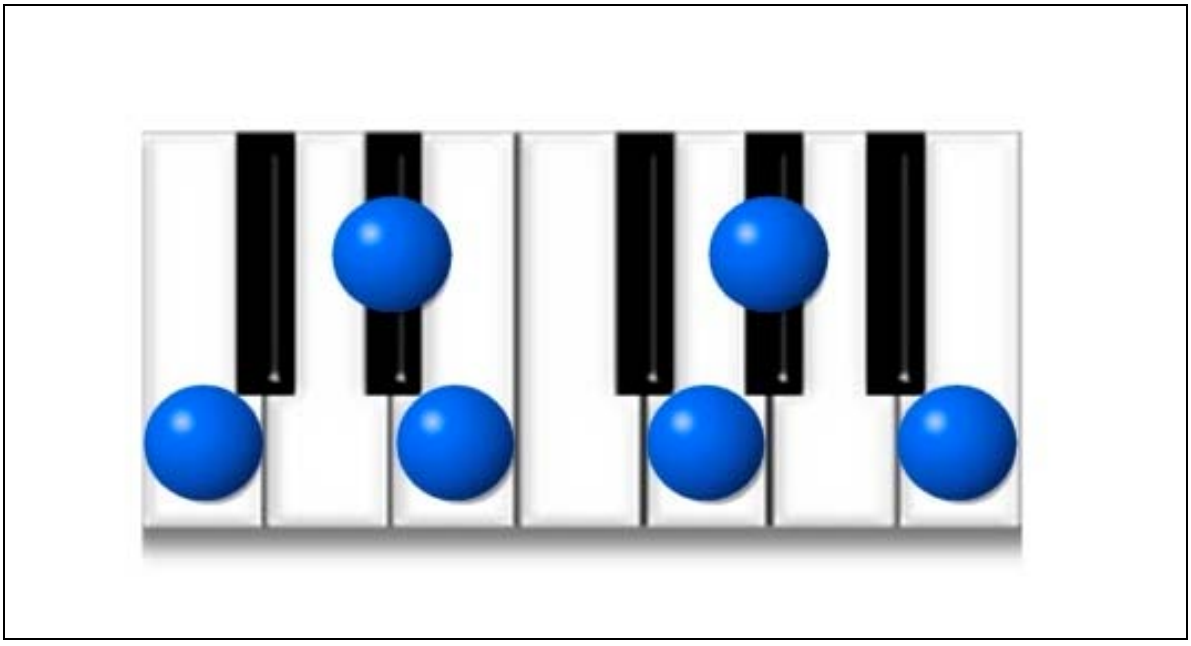
lyd dim



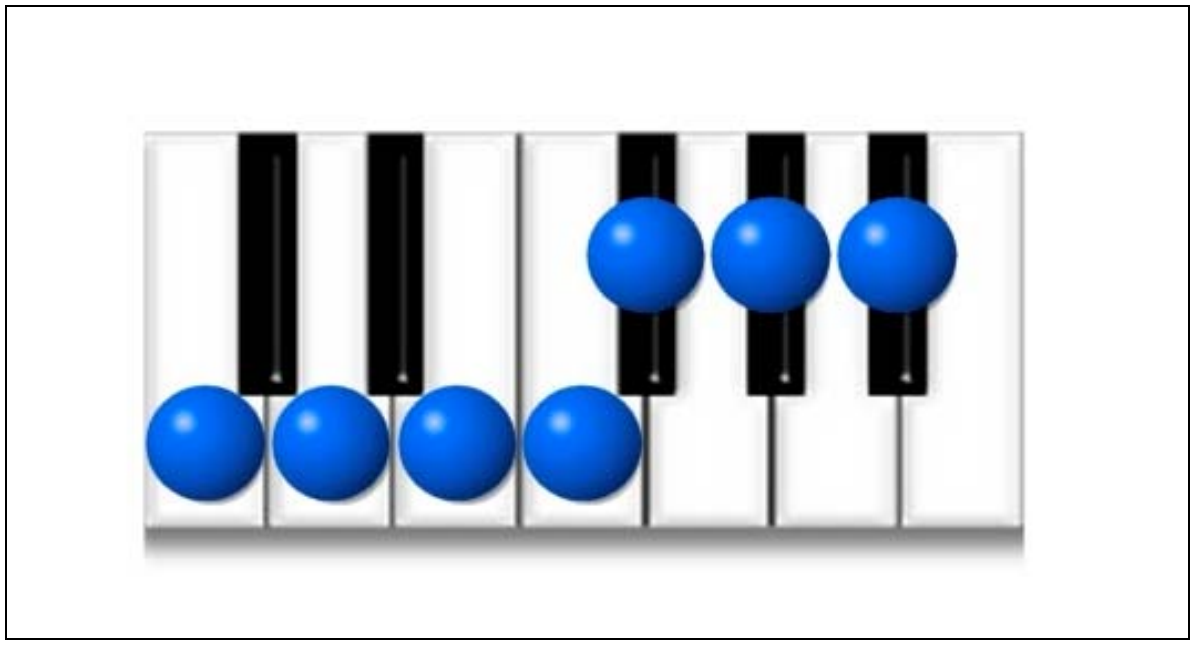
blues 2



major aug



arabian



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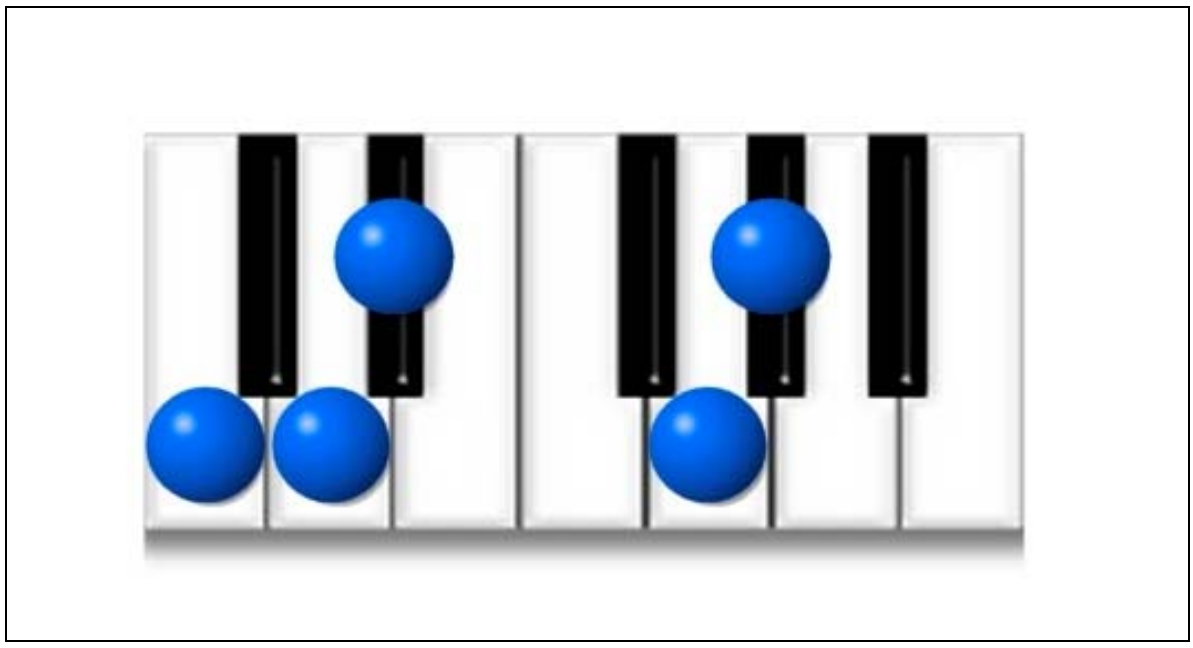
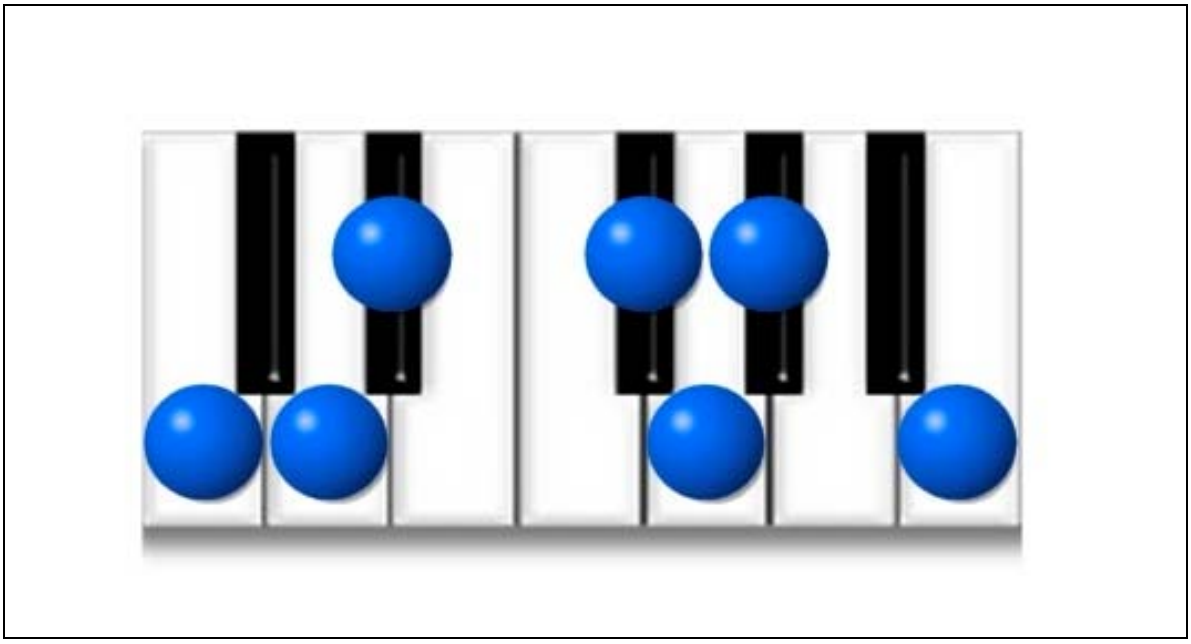
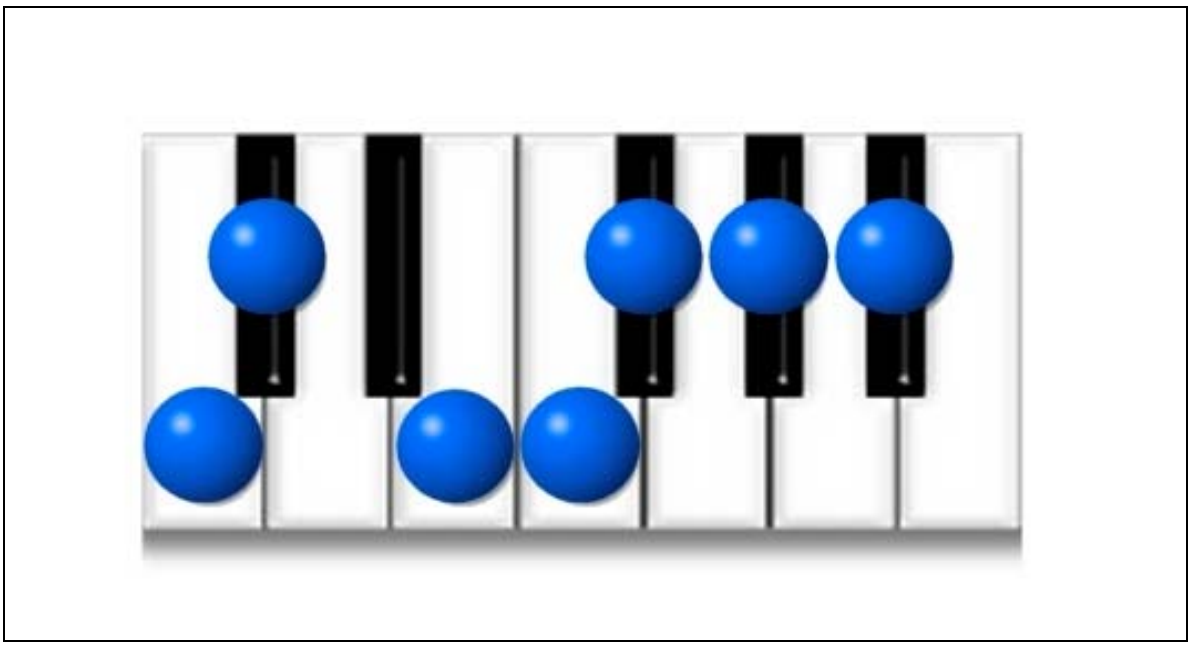


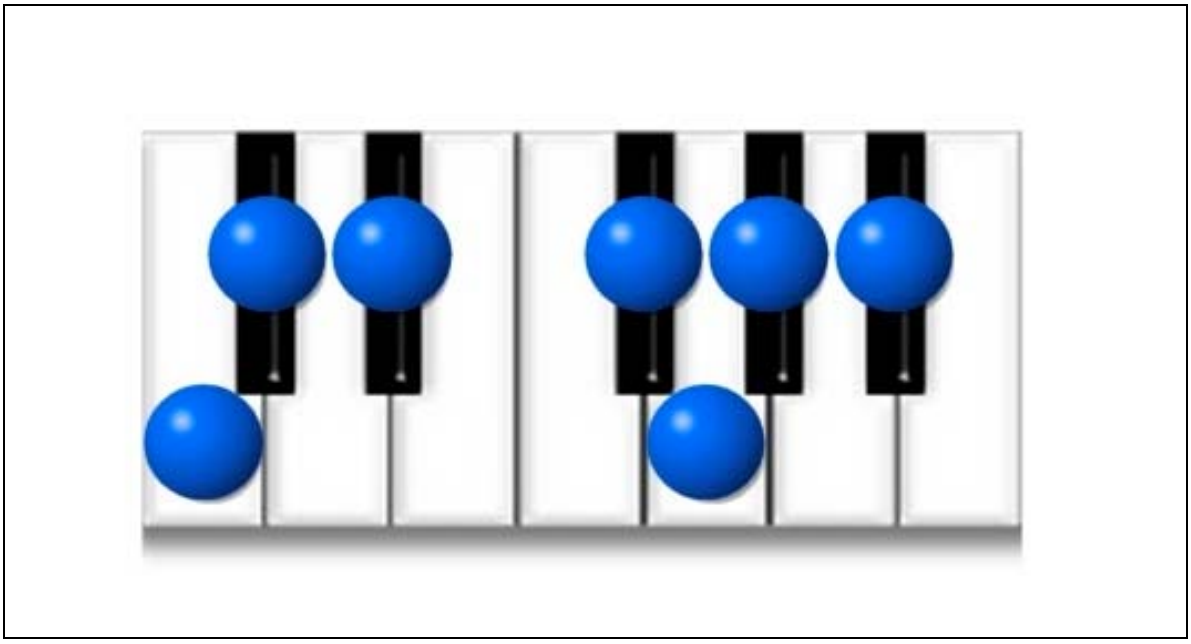
hungarian 1



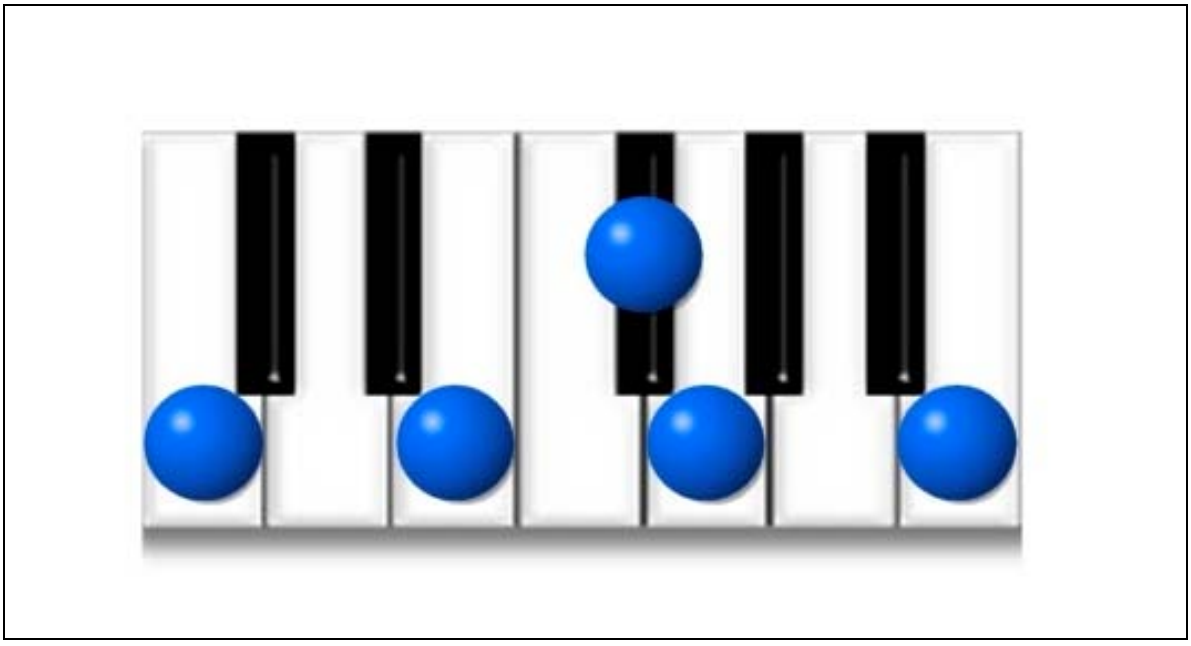
oriental



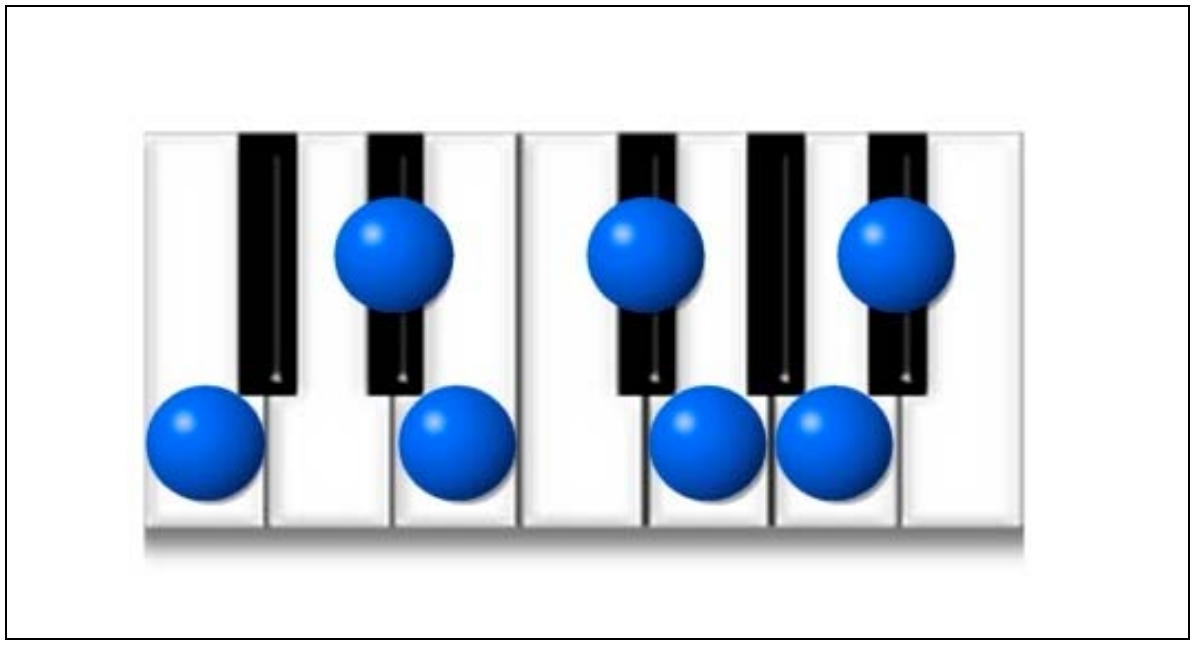
raga todi



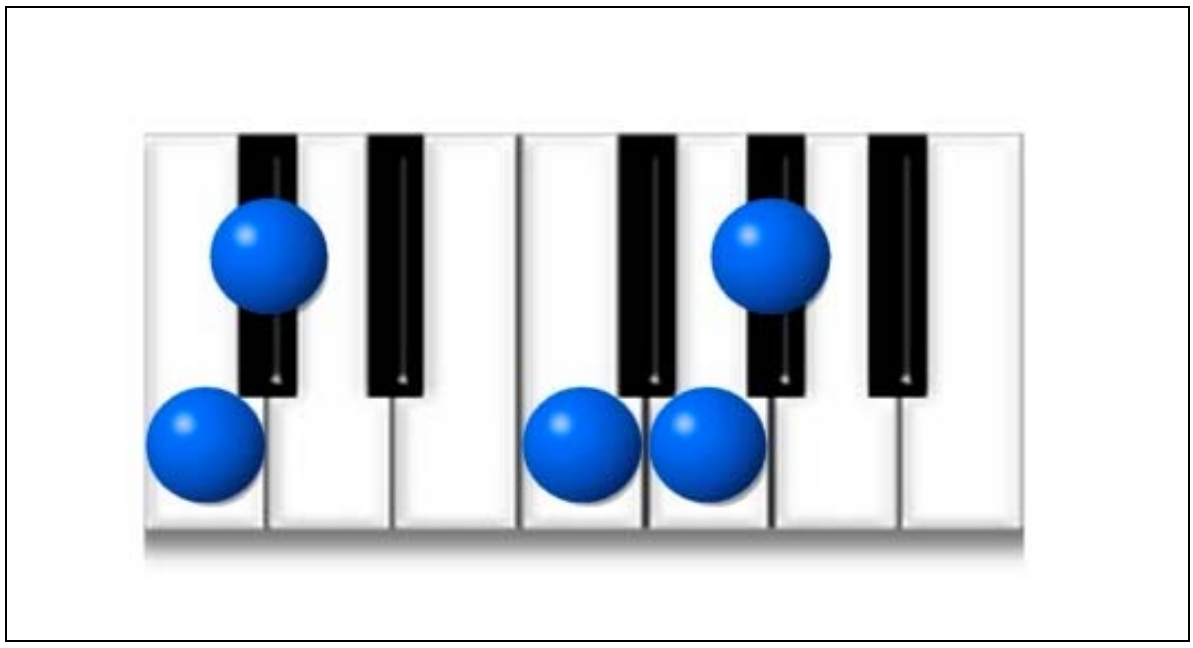
chinese



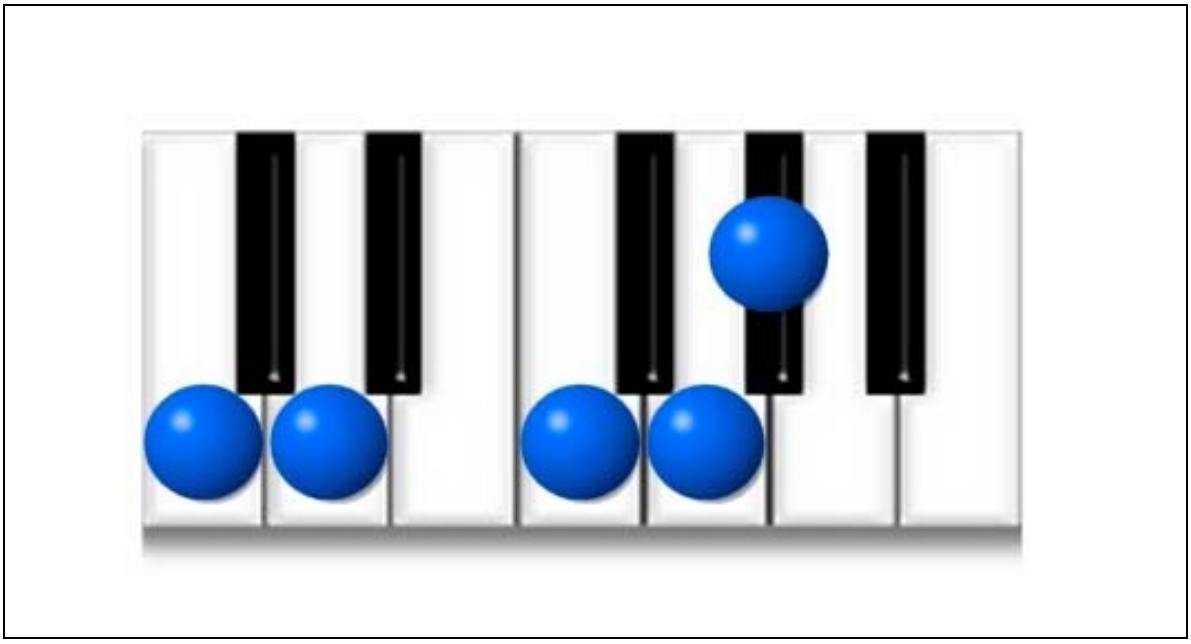
hungarian 2



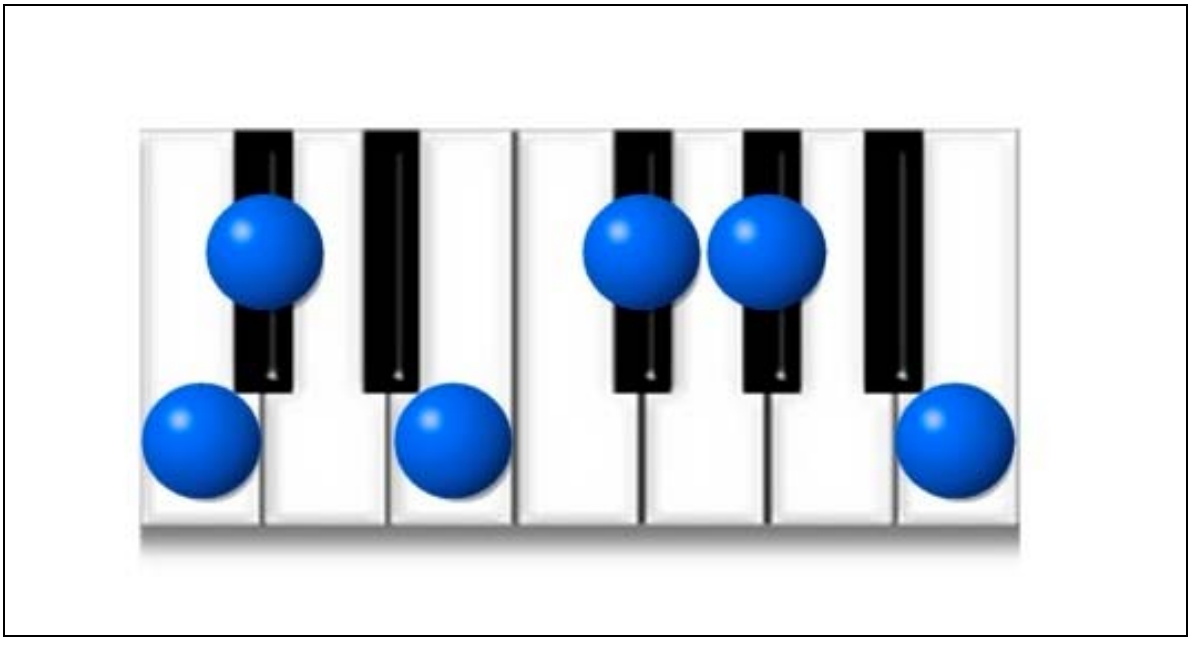
japanese1



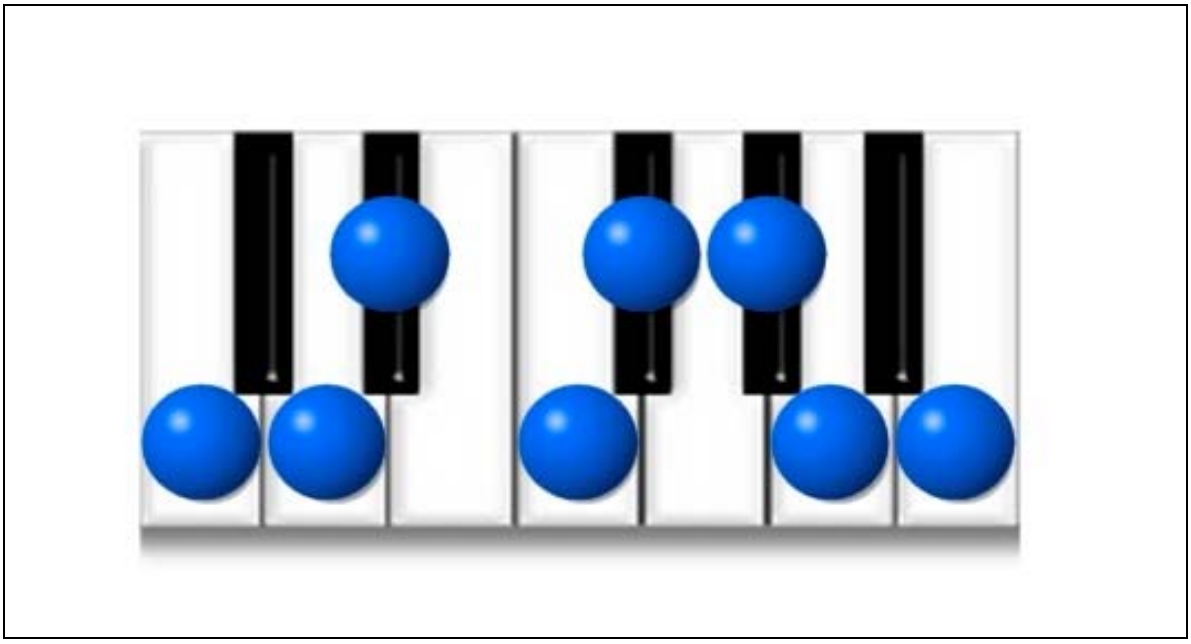
japanese2



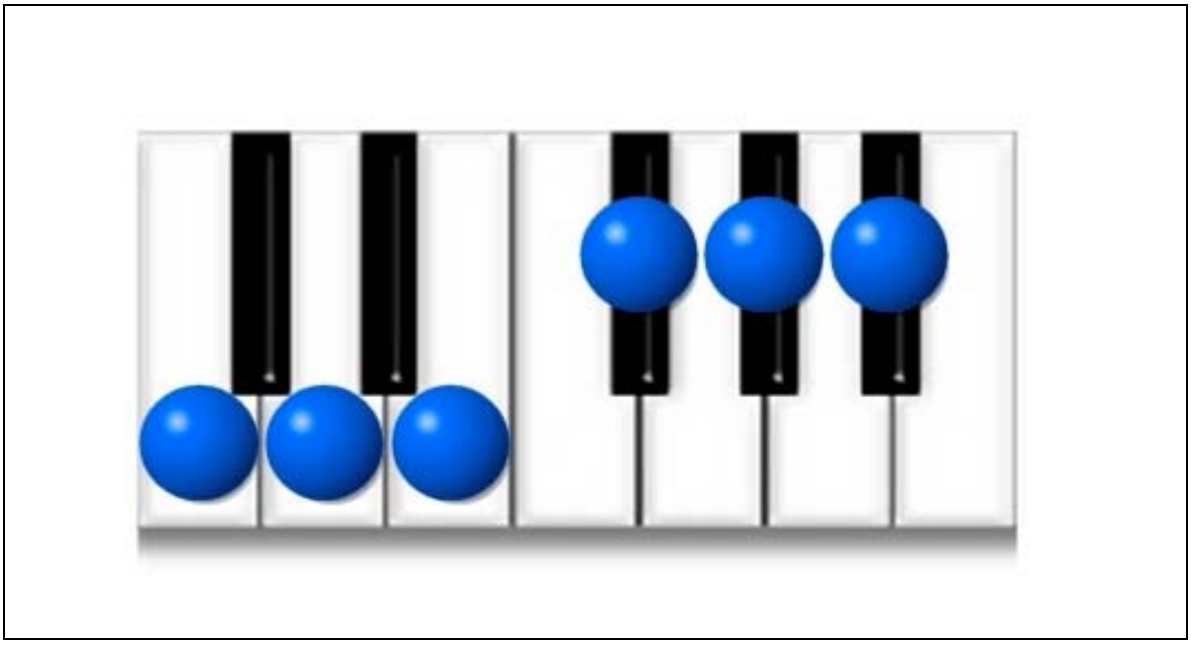
persian



diminished



whole tone



Mattary

It seems to me that a reminder of all the terms used might be good. And placed right here at the back, well; I never said I was logical, did I?

Pattern

Could also be called a “sequence” - consists of up to 16 steps with each step potentially containing a note value, a gate event to say whether that note should play, a tie value to tie the note to the next legato-style, a skip value and a “protect from transpose” value. In addition, each note has a variable velocity setting, a delay value, a length AND four auxilliary controllers. These 4 controllers may be MIDI CCs or one of the infamous “auxilliary events” about which you’ve probably heard lots. In short these are ways of doing mind-bending things sequencing the P3’s own parameters and there’s plenty about them elsewhere.
A pattern has a length, timebase, direction and a whole bunch of other stuff - but hopefully you get the picture.
The number of Patterns available depends on the memory configuration you have chosen. If you choose 3 Banks, you get 16 Patterns per Track; 6 banks gives 8 Patterns and 12 Banks gives 4 Patterns perTrack.

Playlist

A Playlist is a series of up to 8 steps, specifying Patterns in any order that you specify. Each Pattern may be repeated, may be transposed and may be synced to the Global Bar or run freely according to its own length setting.

Part

A Part is a collection of Track Mutes, Force To Scale Settings, Global Bar settings and Playlists for each track. If you hold down multiple Part buttons, the Parts play in order (and you can specify repeats and transposes too) and loop around in a wonderful way. Parts can be copied during playback and tweaked and all that kind of stuff. Use them to quickly build songs interactively or to leap between mute or scale settings with the grace of a gazelle.
There are 8 Parts in all.

Track

A Track plays the current Playlist on a single MIDI channel. Each Track can be assigned to any MIDI channel and if its LED is not lit, it’s not active. Hmm, there must be a better explanation than that. There are 8 tracks and if I think of something else to say about them, I’ll pop back here and write it in.

Bank

A Bank is a complete collection of Parts, Playlists, Tracks, Patterns etc. I tend to think of them as “Songs” but your mileage may vary. You can optionally set a preset tempo and initial program change linked to the Bank and how many Banks you get depends on the Config you chose. See Patterns.

User Config
Here you set specific variables according to your own preferences. If you want to see MIDI note numbers rather than names, or wish to have individual MIDI Channels for each bank or just one Global Set, here is where you do it. The proper manual will tell you this stuff but it's pretty straightforward anyway.

Global Bar
A means of syncing Patterns of unequal length. Or a way of introducing strange timing variations. Related to Playlist sync mode and Pattern length, there's probably something about this in the text. In fact, I'm pretty sure there is so this weedy explanation should suffice here.

Auxilliary Event
Unique P3 feature for sequencing P3 parameters. Includes randomisation, override MIDI channel, set length, direction, timebase, masking events, knob allocation etc. etc. See bulk of text.

Accumulator
A programmable counter that works rather like an LFO, although a little cleverer. You can increment the counter according to Aux Events and set other events to happen or modify based on the accumulator value. There are accumulators for notes, velocity and Aux D - the latter being a freely-assignable counter. Anything you put into row D gets tweaked dynamically by the D accumulator. You may grin now.

Mixer
Yes, the P3 has a built-in MIDI mixer. If enabled (via User Config) you can use the row of knobs directly above Parts to control Volume for tracks 1-8. The knobs above these control pan for the same tracks. Func and a knob will let you turn it without sending values. Simple but very useful!

Timebase
The clock division of a pattern.

Scale (FTS - Force To Scale)
A cool means to prevent wrong notes - there are preset and user scales and they can even be modified during playback. Think of this as a filter that only lets through notes that are in the current scale.

Mattary
Like a glossary, but duller.