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Achieving National Curriculum Standards in Music Technology –

The Zero Cost Option

The National Curriculum has made the use of Information and Communication Technology (ICT) in the Music Classroom a statutory requirement for several years. However, recent OFSTED reports show that many schools are consistently unable to implement the required technology to deliver the requirements of the National Curriculum, particularly at Key Stage 3 (KS3). While schools are often able to implement Music Technology for the smaller classes of GCSE and A level, financial and technical constraints often prevent schools from being able to implement sufficient technology to deliver the National Curriculum requirements to the much larger class sizes at KS3. The use of ‘music technology’ at KS3 in many schools is reduced to composition based around a Yamaha electronic keyboard, with a limited range of sounds.

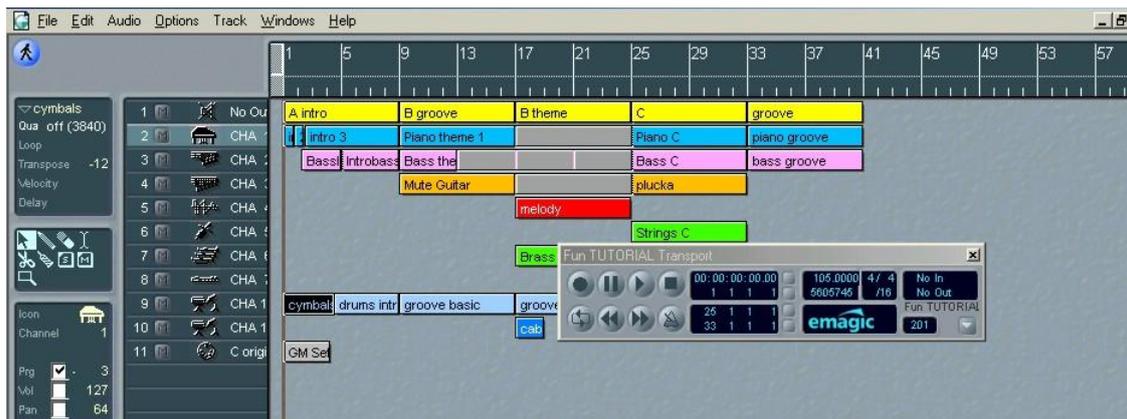
Music has often been considered an elite subject, with the majority of music students post-KS3 having had external musical and instrumental tuition, or tuition prior to attending secondary school. Implementation of music technology has a huge potential to help increase the access to music for pupils with little prior formal musical training, by allowing pupils to create, compose and perform music that is considerably beyond their instrumental ability. Many children are already familiar with certain music technology software of the ‘EJ’ or ‘ACID’ variety, in which they use precreated ‘loops’ as building blocks to create music tracks in a variety of popular styles, even combining them with video to create their own moving image soundtracks. With the right equipment and guidance it is only a short step from here to getting pupils creating their own ‘loops’ using sequencers, recording software and drum machines.

Software can allow users to synthesise new sounds from simple building blocks such as oscillators and filters, which can then be used creatively within compositions. MIDI sequencers can be used to create melodies, riffs and harmonies to blend in with synthesised sounds – and all of these can be used creatively without the need for a pupil to have a high standard in keyboard skills. Songs and performances can be recorded and edited using software – combining electronic and acoustic music, with live vocals recorded over MIDI backing tracks. Even music theory tuition (and the acquisition of those useful keyboard skills) can be considerably livened up by use of good music software – and the effective use of this software should bring the school up to the required standards of the National Curriculum for Key Stage 3 music.

One particular problem is the class size at KS3 – rarely fewer than 30 in most schools. ‘How can I afford to buy enough hardware and software for 30 pupils?’ is the response from Heads of Department, already struggling with tight budgets. The answer is – you don’t.

For those who know where to look, the internet hosts huge quantities of free music software. By this I don’t mean pirated copies of Logic and Sibelius, but legitimate *freeware*. This is software that is released with no restrictions of duplication or use, and with no fee payable. There is also *shareware* which is released freely over the internet, but usually requires some payment, and is frequently functionally restricted (for example, save functions are often disabled). If some of this can be loaded onto computers in the school IT classroom, then music can make effective use of large numbers of computers which are otherwise of little use to the music department. Effective use of IT can support teaching and learning, and help to engage a new generation of children in music making.

The KS3 syllabus requires teachers to cover amongst other things: Exploration of electronic (and acoustic) sounds; composing using technology; the use of MIDI and sequencing; sound recording and signal processing. There are freeware versions of combined MIDI sequencers/Audio recorders, (*Logic Fun, Anvil Studio, ProTools FREE!*), which allow pupils at Key stage 3 all the functionality they need to compose using music technology, without being overly complex. *Anvil* even has a host of different means of entering MIDI notes without the necessity for MIDI keyboards to be dragged into the IT lab and connected up. Basic multimedia microphones can be used for recording sound into the programs, and pupils can then experiment with the effects software to demonstrate how recorded sound can be altered electronically.

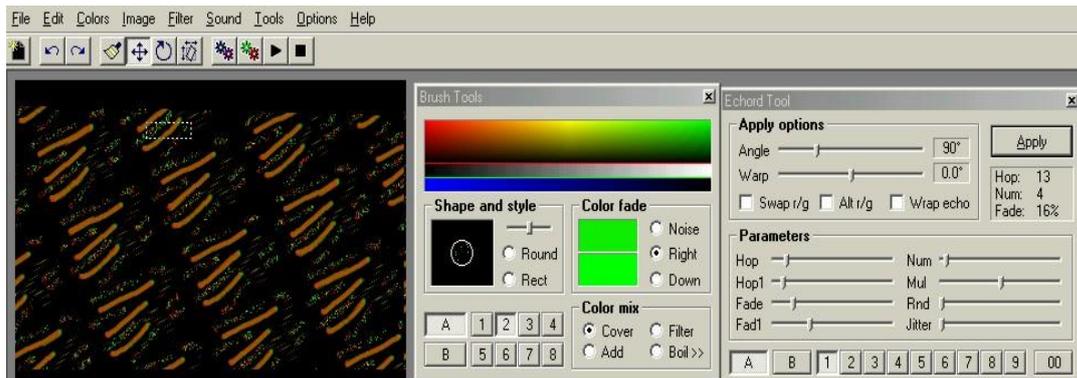


Logic Fun

Logic Fun and *ProTools FREE!* are both simplified versions of commercially released software, with all the basic functions intact, and with no restrictions.

Pupils wishing to be more adventurous can use synthesiser programs to experiment with creating their own, original sounds to import into the recording software. These can be both unconventional (*Coagula* – a ‘paint’ based synthesiser where pupils can ‘draw’ sounds is an excellent starting point) or traditional (*Simsynth* is a fairly standard ‘subtractive’ synthesiser). They can create drum loops in *Hammerhead* and cross the characteristics of one sound with the sound of another using *Analog X*

vocoder. Pupils can then notate their compositions using *Finale Notepad*. Theory and keyboard skills can be taught – and assessed – using *Music Trainers*. And all without costing any more than time online to download the programs, and some CD-Rs to store them on. If teachers can persuade the IT department to let them into their domain, then KS3 music classes could potentially be irrevocably altered.



Coagula (it's a music program – really!)

Some suggested software:

MIDI sequencing and Audio Recording:

- *Anvil Studio* - Willow Software: <http://www.AnvilStudio.com> 16 tracks of MIDI and 1 track of audio.
- *ProTools FREE!* – Digidesign: <http://www.digidesign.com> 48 tracks of MIDI and 8 tracks of audio. (Currently only works on Win Me, 98 and 95).
- *Logic Fun*: Emagic: <http://www.emagic.de> Unlimited MIDI and 4 tracks of audio.

Synthesis and sound exploration:

- *Coagula*: by Rasmus Ekman: <http://www.hem.passagen.se/rasmuse/Coagula.htm>
Graphical interface additive synthesiser
- *SimSynth v 1.3*: David Miller: <http://www.sonicspot.com/simsynth/simsynth.html>
Subtractive synthesiser
- Granulab: Rasmus Ekman: <http://www.hem.passagen.se/rasmuse/Granny.htm>
Granular Synthesiser

Audio Manipulation

- *Vocoder*: AnalogX: <http://www.analogx.com>
Vocoder
- *Zerius Vocoder*: Emanuel Borsboom <http://www.epiphyte.ca>
Vocoder
- Autotune: Analog X: <http://www.analogx.com>
Pitch correction
- Voice remover: Analog X: <http://www.analogx.com>
Removes voice from recorded music

Drum Machines:

- Hammerhead Rhythm Station: <http://www.threechords.com/hammerhead.shtml>
Drum loop sequencer
- TS404: <http://www.come.to/richy>
Drum loop Synthesiser

Notation:

- *Musette*: Dave Rowe: <http://www.canzona.com/music/musette>
Simple MIDI input notation program

- Finale Notepad: <http://www.makemusic.com>

Notation program

Music Theory tuition

- Music Trainers: <http://www.musictheory.net>

Comprehensive theory tuition program