

Music Maestro: Some of the Best Software Begins With a Blank Screen

How many parents, after spending weeks carefully selecting and purchasing “just the right gift” for their children, have observed in wonder as their young progenies lose interest in their gifts and begin playing with the boxes in which they were wrapped? Cardboard boxes have been the staple of imaginative play for generations of children.

What makes an empty container so attractive? Creative possibilities. Creative possibilities with the single limitation of the imagination of the child it encounters. Parents and educators can learn from the lesson of children at play with empty boxes when selecting software. While a myriad of quality educational software programs exist, some of the best programs resemble an empty box in that they begin with a blank screen upon which children can apply their creative imagination and talents.

A program that begins with a blank screen functions as a tool. Tool software affords its users opportunities to develop their potential and talents. Word processing and desktop publishing programs, spreadsheets, databases, drawing and graphics programs, presentation software, music composition and editing programs, and graphic and video editing programs are a few common software products that open to a blank screen. These programs transform students from receptacles of knowledge into active producers who make decisions about how to direct their learning and productivity. The level of sophistication can range from writing a simple story to producing an electronic novel, from drawing basic shapes to designing a building with drafting tools, from creating a single melody to composing and arranging multiple musical parts and instruments for an electronic orchestral performance.

Tool software enables a constructivist learning approach.

Constructivist Approach to Learning

The constructivist approach to learning encompasses interactions between learners and content. The complexity of these interactions increases as a student's talent grows. Constructivism involves learning in context; learners construct much of what they learn and understand as a function of their experiences (Schunk, 2000). Programs that begin with a blank screen provide avenues by which students can learn through the act of organizing and displaying their ideas and information. Jonassen, Peck, and Wilson (1999) noted that “students-as-producers-of-technologies engage in much more meaningful learning than students-as-receivers-from-instructional-technologies” (p. 112). Papert (1980) developed his early turtle Logo programming language for children because he was concerned that computers were managing children instead of the other way around.

Technology and the Gifted

Gifted students thrive in a constructivist environment where inductive learning prevails. Tomlinson



Figure 1
Changing the Musical Instrument for Track 1

(1997) noted that school curricula should function similarly to video games where everyone wants to play, the game quickly reaches the skill level of the player, and there isn't a ceiling on how far the player can take the game. While programs that begin with a blank screen are very different from video games, they are inherently self-pacing and ceilingless. Computer tutorial and drill and practice programs abound in educational settings, but they possess limited learning options and often fail to harness student creativity.

Renzulli (1982) has long been a proponent of providing talented students

with opportunities to create authentic products or services for authentic audiences. In the Schoolwide Enrichment Model (Renzulli & Reis, 1997), students are encouraged to implement the authentic methodologies of practicing professionals to create "real products" that bring to bear change on "real audiences." Tool software accomplishes this by allowing students to function as practicing professionals. Desktop publishing programs such as QuarkXPress 5.01 (<http://www.quark.com>) and PageMaker 7.0 (<http://www.adobe.com>) allow students to create publications with software used by professional publishing

houses. Corporate executives and third-grade students can both create powerful presentations with tool software such as Microsoft PowerPoint 2002 (<http://www.microsoft.com>) or AppleWorks 6.2 Slide Show (<http://www.apple.com>). The quality of the final product is limited to the user's talent and experience.

The widespread availability of technology has lowered the barrier that formerly kept young people from using the authentic methodologies of professionals. Thanks to a new "level playing field" provided by the Internet, today a fifth-grade student living in the middle of rural America has Web publishing

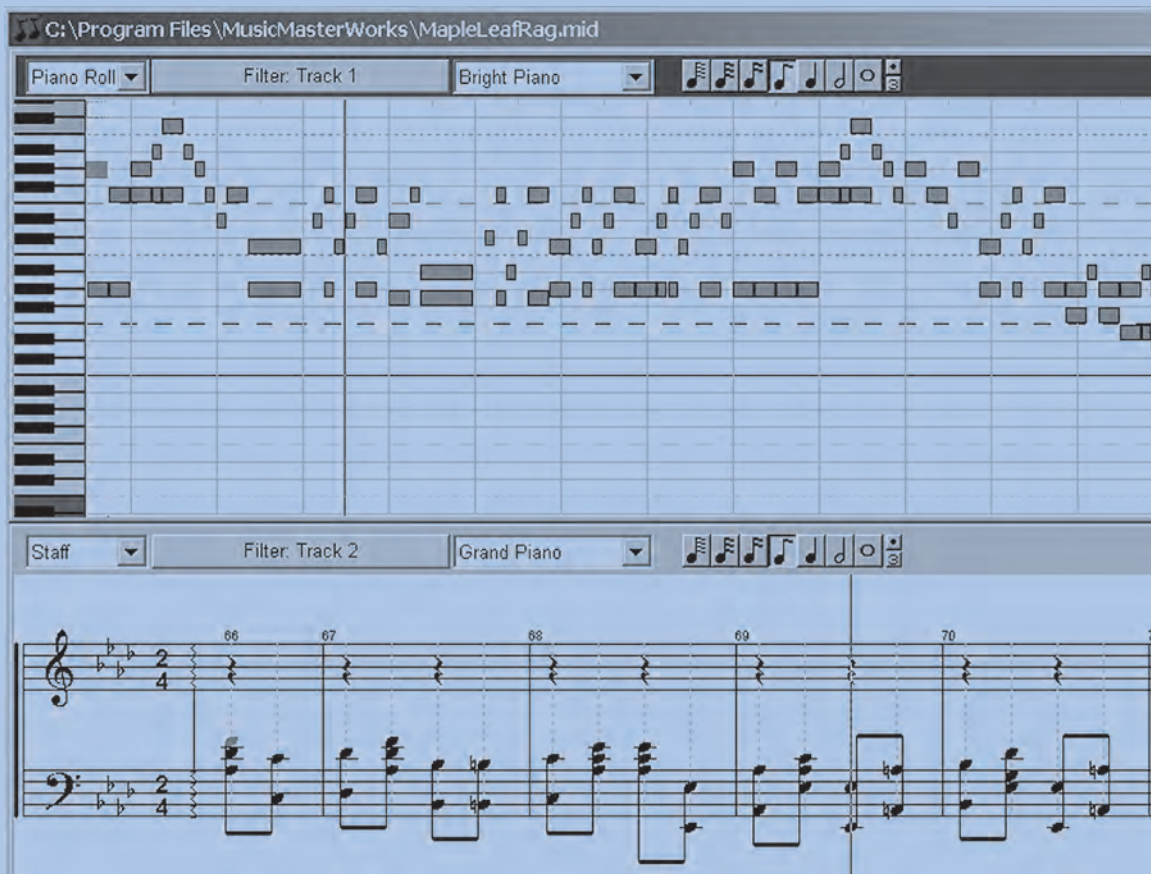


Figure 2
Piano View on Track 1 and Staff View on Track 2

powers that rival that of the *New York Times*.

An Example at Work

The word processing and presentation software of products like Microsoft Office XP, Star Office 6.0 (<http://www.sun.com>), and AppleWorks 6.2 usually come to mind when describing programs that begin with a blank screen. However, a number of small, innovative software companies are producing versatile, interesting, and easy-to-use specialized products that can unleash creative potential for talent development.

One such product is Music MasterWorks 3.74. A free 1-month evaluation copy of the software can be downloaded from Aspire Software's Web

site (<http://www.musicmasterworks.com>), and users can convert this examination copy into a full version for under \$35. The remainder of this column is dedicated to describing some of the options available with the Music MasterWorks composition program. Experienced students may wish to explore more advanced composition programs such as Band-in-a-Box 12 (<http://www.pgmusic.com>).

The Music MasterWorks program is a MIDI music composition editor. Unlike WAV and MP-3 audio files, MIDI files are synthesized sounds that require very little storage space (Siegle, 2002). MasterWorks begins with a blank screen into which users can open existing songs or create new compositions of their own. The Internet is filled with sites fea-

turing MIDI files. To find a MIDI file of a favorite song, users can usually enter a specific song title and the word MIDI into a search engine such as Google (<http://www.google.com>). While some Web sites sell songs, others feature free public-domain songs. Once a song is loaded into MasterWorks, users can change the notes by clicking and dragging them around the music staff where they appear. Since MasterWorks features multiple tracks of music, students can change the instruments that play each track with a simple pull-down menu (see Figure 1).

The program not only allows users to play the music, but also to print sheet music. The song notation is not limited to a traditional music staff. Young musicians who play the piano will enjoy

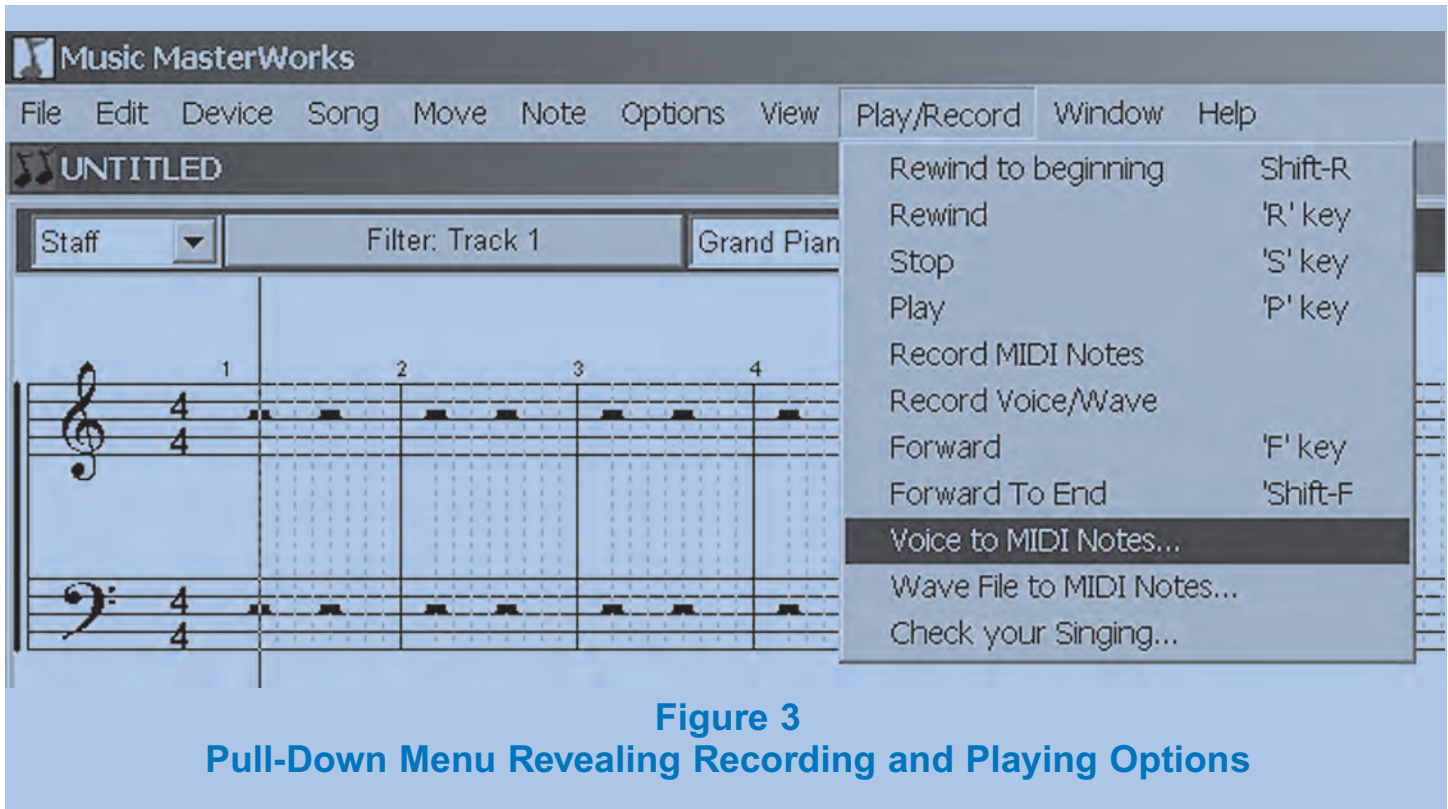


Figure 3
Pull-Down Menu Revealing Recording and Playing Options

viewing their songs with the piano view feature (see Figure 2). With this function, bars of differing lengths align with a piano keyboard to represent the notes.

Once students are familiar with playing and editing existing songs, they are ready to begin composing their own music. This is where MasterWorks shines. Users can drag a musical note (e.g., quarter note) onto the staff, and the program will play the note at the pitch where it was placed. As the composition builds, students add different tracks of music and experiment with different instruments for each track. Once the composition is complete, sheet music can be printed.

MIDI keyboards can be connected to the computer, and music played on the keyboard automatically appears on the MusicWorks staff. Compositions created with MusicWorks can also be played through MIDI keyboards. A more impressive feature of MasterWorks is the "Voice to MIDI Notes" feature. Users

sing into a microphone connected to their computer, and the notes they sing are automatically recognized by MasterWorks and are appropriately placed on the music staff (see Figure 3 and Figure 4). The process is as simple as pulling down a menu and singing into a microphone connected to the computer. This is a great feature for those with limited music backgrounds who enjoy singing. Once MasterWorks creates the musical notation, the user can modify the melody and assign different instruments to it. While I found the process seamless when singing into the built-in microphone on my laptop, I was less successful connecting a microphone to my desktop. The sound cards included in desktops are not all created equal. Some are equipped to power external microphones, while others require the microphone to provide its own power. If readers have trouble recording their sung melodies, it is probably due to an incompatible microphone and sound card combination.

Once a music composition is complete, students aren't limited to printing their sheet music. They can also save their compositions as MIDI files and insert them into slideshow presentations (see Figure 5). They can also create Web sites that feature their musical compositions. Students may wish to enter their original composition in the National Association for Music Education's annual student electronic music composition talent search (<http://www.menc.org/contest/nsbtalentsearch.html>).

MasterWorks has something to offer both beginning and advanced students. Educators and parents have nothing to lose by trying the producer's 30-day free trial offer. Gifted and talented education is about identifying students' strengths and interests and providing educational opportunities to develop and explore them. MasterWorks and other computer software that begins with a blank screen can advance that mission. [GCT](#)

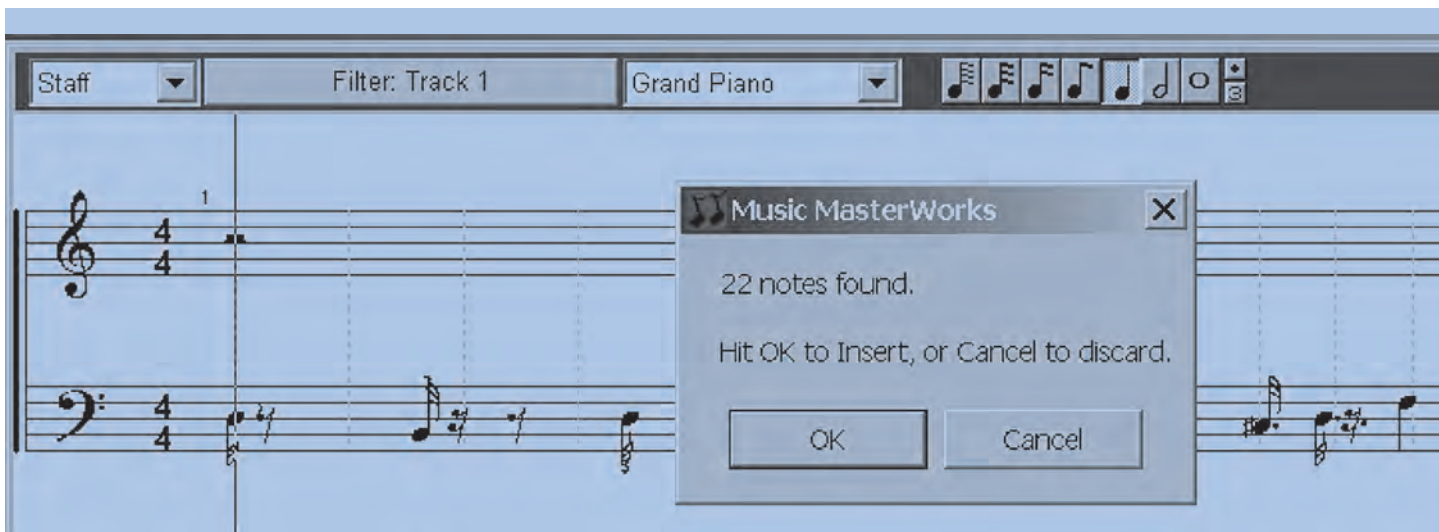


Figure 4
Recognition of 22 Notes Sung Into Microphone

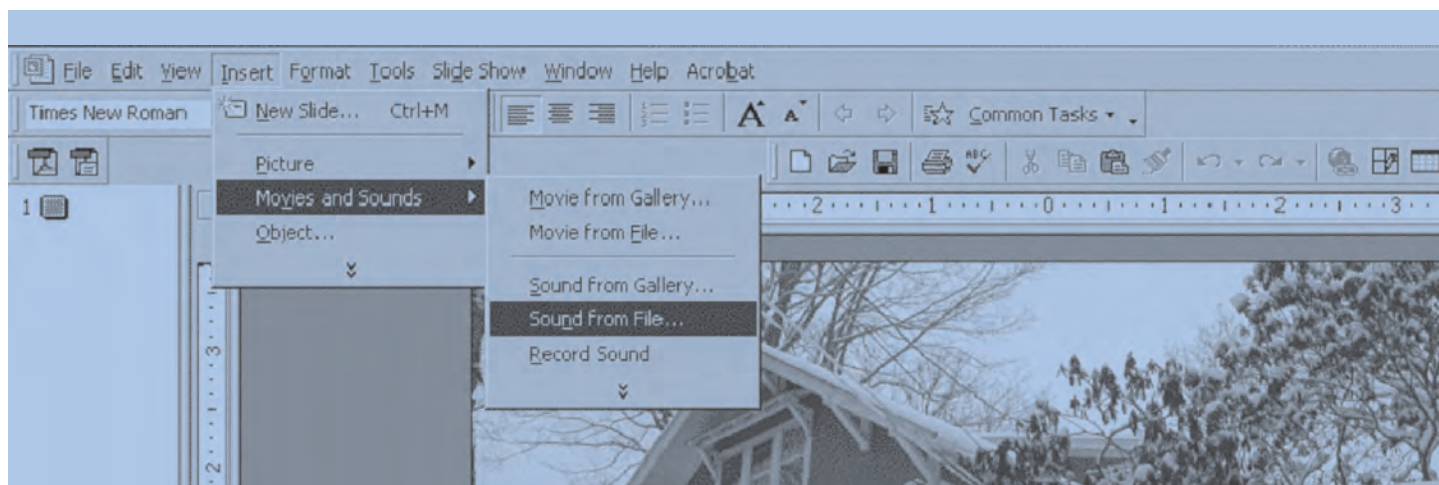


Figure 5
Inserting a MIDI File into a PowerPoint Presentation

References

- Jonassen, D. H., Peck, K. L., & Wilson, B. G. (1999). *Learning with technology: A constructivist approach*. Upper Saddle River, NJ: Merrill.
- Papert, S. (1980). *Mindstorms: Children, computers, and powerful ideas*. New York: BasicBooks.
- Renzulli, J. S. (1982). What makes a problem real: Stalking the illusive meaning of qualitative differences in gifted education. *Gifted Child Quarterly*, 26, 147–156
- Renzulli, J. S., & Reis, S. M. (1997) *The schoolwide enrichment model: A how-to guide for educational excellence* (2nd ed.). Mansfield Center, CT: Creative Learning Press.
- Shunk, D. H. (2000). *Learning theories: An educational perspective*. Upper Saddle River, NJ: Merrill.
- Siegle, D. (2002). Creating a living portfolio: Documenting student growth with electronic portfolios. *Gifted Child Today*, 25(3), 60–63.
- Tomlinson, C. A. (1997, October). *Curriculum differentiation*. Paper presented at the annual meeting of the Association for the Gifted/State Advocates for Gifted Education with Idaho Council for Exceptional Children, Sun Valley, ID.