



Music Technology Lessons by Ms. Garrett

Experimenting with sound waves is a lot of fun for students and a great way to teach them how to record their voice or music into the computer. Adding their voice to a cartoon character and making videos is even more fun!

Lesson 025 – Gotcha Song - Sound Waves, Cartoons, Video (Advanced Skills and Software Needed)

Time Frame - 4 - 6 music technology sessions

The 2nd through 5th Grade students receive one 35-40 minute lesson per week.

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Objectives:

- * To learn how to record the voice and other music into the computer (create sound waves).
- * To take the sound waves recorded by students and learn the process of adding the voice to a cartoon.
- * To use the Chroma-Key or green screen process to place the students into a movie with different backgrounds.

Materials:

- Gotcha Song written by Ms. Garrett
- Computer with a recent edition of the full Adobe Flash program installed.
- Cartoon Solutions characters for animation along with stock royalty free graphics
- Microphones to record voices into the computer (USB mics are best)
- Digital camera with a movie recording setting for making videos
- Program for recording and editing sounds such as GarageBand or Acid Music Studio 8
- A program such as iMovie (Mac) that can quickly remove a green screen background
- A green screen kit with green fabric, lights, softboxes, etc.

Procedures:

Students should review the definition of what a sound wave is and how it is used in computer applications. Students will use a microphone to record their voices into the GarageBand program on Ms. Garrett's computer or Acid Music Studio 7 on the students' computers. The students will recite the Gotcha Song into the computer.

Central Park School 'Gotcha Song' Copyright © 2010 by Ms. K. Garrett, www.musictechteacher.com

I got caught at Central Park, being good today.
I got a Gotcha Card in class. Being good does pay!
Responsible, respectful and resourceful, too,
Just do those things and you will win. You can do it,
too!

Gotcha... I gotcha! Got caught being good.
Can you do it? Sure you can! You know that you
should.

Responsible ones lead us and on their shoulder's
rest, A great role and ability. They will do their best.

Respectful ones are oh, so nice, quiet and polite.
Resourceful ones are very smart. Their futures are so
bright!

Gotcha... I gotcha! Got caught being good.
Can you do it? Sure you can! You know that you should.

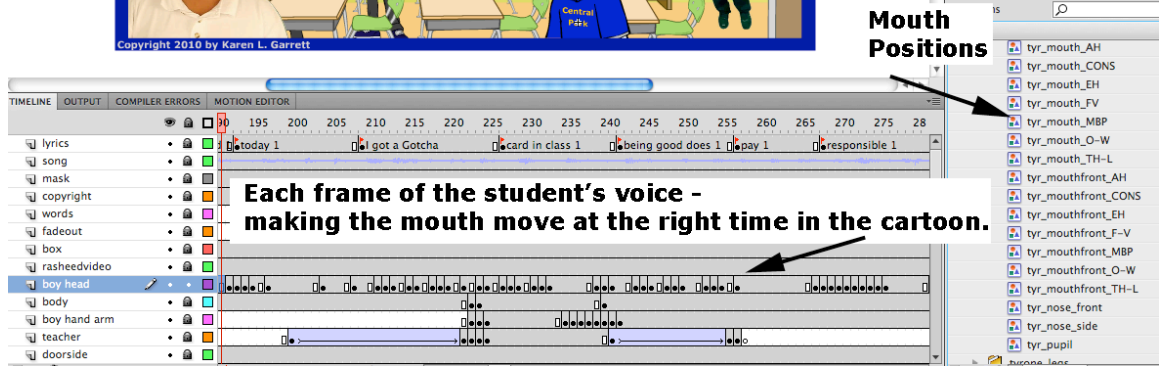
I got caught at Central Park, being good today.
I got a Gotcha Card in class. Being good does pay!
Responsible, respectful.... and resourceful, too,
Just do those things and you will win. You can do it, too!

After the students record their voice, they may use the effects feature to make their voice (sound wave) sound funny by changing it to a chipmunk sound, a robot and other neat voices. Students will save their (regular) voices after experimenting with various effects.



Ms. Garrett will demonstrate the process of adding the sound wave recording to a cartoon using the Adobe Flash CS5 program. Students will note that it takes a very long time to match the voice to the cartoon character and that the cartoons play at 12 frames per second (fps). That means that it may take many programming steps to create the cartoon for the website. Each cartoon character has 7 mouth positions (phonemes). The mouth positions include examples such as mouth number 1 (sounds M, B, P), number 2 (sound ah), etc. Students should speak very clearly into the microphone when recording so the mouth of the cartoon character will match their words clearly.

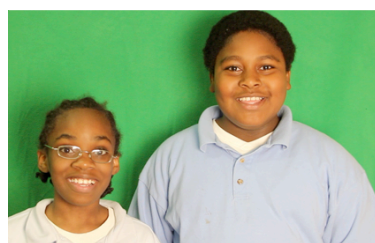
Making the Gotcha Song Music, Cartoon and Video



My students always ask me how I make the cartoons. Showing students this process will give them a better understanding of how long it takes to create the animated cartoons and movies they watch each day outside of school time.

After recording the students' voices and creating the cartoon, another idea was created when we decided to make a video to go with the Gotcha Song. Ms. Garrett purchased a green screen kit from the Internet. The kit included a couple of lights with soft boxes and green muslin fabric that was 9 by 10 feet long. The screen has to be completely stretched or ironed free of any wrinkles. The editing process becomes very time-consuming outside of school time when there are wrinkles in the video background and also if there are not enough lights projected on the students and the screen. The more experience that you have working with this, the easier it will be to work with future projects.

All of the students that would like to participate in the video are allowed to come forward and be taped with a digital camera with a movie setting (high-def). The students should understand that all of the videos will not be permanently saved due to the very large amount of space they consume on the computer hard drive. Each video can take 300-1000 megabytes or more. Many students feel more comfortable performing in the video knowing that it will not be saved. A few of the students will be selected for the 'final video' that will be placed on our website.



Students in front of the green screen



Background color removed by iMovie.



It is very important to have a screen with no wrinkles or other objects in the video. The wrinkles and other objects greatly increase the time needed to edit the video if it will be used in a professional project.



Screen shot of iMovie program, which can remove the green color from the screen in the video. A video of the school was also used behind it. Students love doing this and it can be played immediately after making the video in class.



After the cartoon and in-class videos are finished, the videos can be placed into the Flash cartoon if you have the proper software and LOTS of time to work with the program. Ms. Garrett used Adobe Flash and Adobe After Effects to work with the video. In After Effects, Ms. Garrett edited the video at 30 frames per second. All of the excess wrinkles and shadows in the student video were erased, then the video was saved with an Alpha Channel, meaning that the background color is erased and only the video of the student with a transparent background is imported into Flash and embedded into the cartoon.

Take a look at our final project at www.centralparkschool.com/gotcha.htm

Ask students to notice.....

- What kinds of 'shapes' are made with the digital form of their voice on the computer in GarageBand or Acid Music Studio 7 ? _____
- Does your voice sound different than you think it does when you are speaking? _____
- Can you find the starting point and ending point of your voice in the music on the sound wave graphic? _____

- Can you change the mouth movement on the cartoon head if the phonemes (word sounds) do not match the voice? (Yes, each frame can be changed to 'repair' any words that did not form correctly.) Does the voice stay in 'sync' with the cartoon in the output? What can you do to correct this?
- Does it take a lot of time to make the cartoons? How many frames per second are the cartoons usually displayed on the Internet? (12)

- What kinds of programs can you use to make a video on the computer? What equipment do you need to make the videos? What is Chroma-Keying or the green screen effect? What does it do to the video when the background is removed? Where have you seen examples of the green screen effect before? (On TV in the news, weather sets, etc.)

Evaluation:

*Students will know how to use a microphone to record their voice into the computer and work with sound waves in Acid Music Studio 7. Students will save their sounds to the computer and will demonstrate an understanding of what happens to the sound wave when they use 'effects' to change the waveform.

*Students will be able to describe what is needed to make the cartoons and video using a green screen effect. (Students will be taped so they will get used to performing in a music video. No evaluation is needed of this, but it will show which students are able to perform well and speak clearly in these types of videos.)

Notes: _____

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