# SAMPLING AND COMPOSING WITH FOUND OBJECTS - THE ANDREW HUANG CHALLENGE

## Found sound compositions in the style of Andrew Huang

*This article has been written by a guest author.  If you're an educator or music industry professional who is interested in*

*contributing an article to the Midnight Music blog, you can apply here.*

Welcome to another blog post written by a guest author. The author of today's article is Mike Dimin – a music teacher at The Charlton School in Burnt Hills, New York where he has taught a technology-based music program for vulnerable and "at-risk" high school students in a residential setting since January of 1991.

In this article, Mike shares a his unit of work: The Andrew Huang Challenge – Sampling and Composing with Found Objects that he uses with his secondary students.

As an aside – Andrew Huang's Youtube channel (the subject of this unit of work) is one of my favourite sources of musical inspiration for students and teachers alike. He takes a simple object – or group of objects – and makes an amazing, creative composition from the sounds of that object. It's a great example of what one person with a mic, a laptop and creative flair can accomplish.

– Katie Wardrobe

# Introduction

Andrew Huang is a YouTube sensation, with millions of views of his Song Challenge video series. Andrew's music uses multitrack recording to create musical pieces with a single object (an apple) or objects from a single family of objects (kitchen utensils).

In our school, the Andrew Huang Challenge challenges our students – working in small groups – to create a similar project (less the video aspect) using a single object or a family of objects to create a rhythm; a rhythm that can be a piece of music, in and of itself, or as a foundation for a recorded instrumental, lyric or rap.

## Learning Outcomes

1. Recording – students will learn to set up for recording based on available equipment, connections, etc. Students will learn about different types of microphones, microphone placement and line level settings. Students will learn the concepts of multitrack recording  and learn how – on a practical level – to set the Digital Audio Workstation (DAW) for recording on multiple tracks.
2. Sampling – students will learn to obtain and edit a "sample" of a desired sound for use in the project.
3. DAW editing – students will learn to edit sound samples, copy and paste samples and arrange the samples to create a rhythm in the DAW.
4. Meter and tempo – student's knowledge of meter and tempo will be reinforced through the creation of

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rhythms through the editing process

5. Dynamics and song development – Students will introduce dynamics through the addition or subtraction of samples to create a cohesive piece of music from beginning to end

## Technology required (multiple options!)

- Computer with DAW software: there are many DAW applications available, many for free or at nominal cost. Our studio has 5 MacBook Pros with either Studio One Pro or Studio One Prime (free) from Presonus.
- Audio interface: many computers have built in microphones and internally convert the audio to digital. However, for better recording quality and the ability to alter microphone placement, we use an external audio interface and a quality recording microphone. As an alternative, a USB microphone plugged directly into the computer is a less expensive option to having both a microphone and an interface. We have a Presonus Firestudio Mobile Firewire interface for each of the 5 workstations.
- Microphones: again, many computers have built in microphones. However for both quality and flexibility we use external microphones. We have a number of MXL 770 Cardioid Condenser Microphones. In addition we have one Audio-Technica AT2020 USB Cardioid Condenser Microphone for directly connecting to the DAW via the USB port which

negates the need for an audio interface.

- Finally, headphones with a headphone distribution box allows multiple students to hear and edit in better quality than they would using the computer speakers. It also allows separate groups to be editing simultaneously.



Hardware used at Mike's school (left to right): MXL 770 microphone in shock mount, Presonus FireStudio Mobile audio interface, Audio-Technica AT2020 USB microphone, headphones

## Rolling out the project

I introduce the project by showing some Andrew Huang videos.

*[Editor's note: here is one example but do take some time to take a look at some of the many other videos on Andrew's channel!]*

SONG CHALLENGE: LIGHT BULBS

Following the videos we discuss how Andrew Huang creates his music. This discussion gives me insight into the abilities and experiences of my students. Some have been doing rudimentary audio editing for a few years while some are truly amazed that something like this can even exist. This helps as I develop groups by pairing those with experience with those who are new to the process. The discussion includes how multitrack recording is used in the production of popular music as well.

I will then demonstrate using either past student projects as an example (less time consuming) or create a short version for them (more time consuming). Demonstrations of past student projects allow the students to see the possibilities in a much more realistic light than trying to measure up to Mr. Huang's work.

# Brainstorming

Students will be assigned into a group and will spend some time brainstorming ideas for an object or family of objects. The image below shows a student project done in Abelton Live with items of clothing, including a zipper, velcro, elastic waistband, a belt, a belt buckle and more.
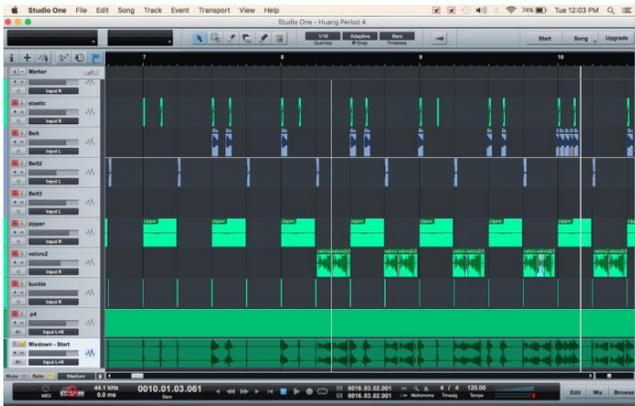


Once the group chooses a theme, they then must decide what sounds they can elicit from the object(s). One group using a stapler as their object found a number of sounds including stapling, opening and closing the stapler, pulling out the staple receptacle, strumming the internal spring, and, of course, dropping the stapler on the table (not truly within the parameters of the project).

# Technology module 1

At this point I take some time to go over the aforementioned hardware and software technologies, to familiarize and give the students some hands on time.

Students will be:

- Setting up mic stands and microphones
- Learning connections and signal chain
- Learning how to use the audio interface (and the theories of audio to digital conversion)
- Assigning tracks and setting input levels on the DAW
- Recording samples

Throughout these modules, I allow the students as much hands-on time as possible. I reinforce that in certain topics, such as mic placement, there is not necessarily right or wrong. Different mic placements will yield a different recorded sound and they have to determine just the sound they are looking for. In this way we challenge their critical thinking skills as well as their ability to compromise and reach consensus.

## Recording the samples

Students now take the time to record their samples. One issue I find is that students try to find the specific sound BEFORE they record or that the recorded sound doesn't sound exactly what they think it sounded like acoustically. It is important in this phase of the project, that the students record many more samples than they might actually use.

Once in post production, it is difficult to go back to production. I urge students to get "silly" (creative). If they think they'll need 5 different samples, I urge them to record 10. I challenge them to find sounds and samples that they didn't plan for and didn't know existed (hence dropping the

stapler on the table).

Of course, I have them save their work often. I do this even if the software automatically saves.

## Taking a break

This is the time when students get to listen and, hopefully laugh over some of the sounds they've recorded. This is a time to revel in their accomplishment as they start to then determine which sounds might take the role of the bass drum (1 and 3) or the snare drum (2 and 4). Is there a sound that can function as the ride cymbal or crash cymbal? We might also at this time listen to some pop music and focus on the role of the drums and how the drums are constructed.

This is a great time to remind them that one NEVER claps on 1 and 3!

## Technology module 2

In this module, we look specifically at the DAW and the editing process. Although every DAW differs in the application of cutting, pasting and editing samples, students should have the basic skills to:

1. Cut, copy and paste samples
2. Lengthen and shorten samples
3. Move samples
4. Place samples at specific points in the timeline.

Students need to be able to align the initial "hit" of the sample with each of the downbeat or upbeats of a measure. More advanced students can attempt to place samples at the 16th note markers.

5. Adjust volume of a specific sample or of individual tracks

For more advanced students, knowing how to alter the length, speed or pitch of the sample can add interest to the final project.

## Creating the rhythm

Now that the samples have been recorded into the DAW and the students have a basic understanding of editing in the DAW environment, students can begin experimenting with their rhythm. I find the best way for students to learn editing is by trial and error. We've done the workshops on editing, now it's time for them to play.

Most students are pretty facile with technology and they pick up that aspect fairly quickly. Sometimes the musical aspects come with a bit more difficulty. To start, I give them some basics:

1. Edit the samples to the shortest possibly complete sound.
2. Develop a single measure with the "bass drum" on 1 and 3 (or to make is a little more hip you can move the bass drum to the "and" of 2 or the "and" of 3) and snare

drum on 2 and 4. Move the samples to the correct place in the measure by copying and pasting into the proper location.

3. Students can now copy and paste this foundation drum pattern throughout their song.
4. Start to fill in the other drums to this foundation of bass and snare. Building throughout the piece and scaling back toward the end.
5. Students will adjust volume levels of tracks and of individual samples to create a musically complete rhythm track.
6. For students who excel, I will ask them to create a "fill" on beats 3 and 4 of the 8th measure to signal a move from verse to chorus, so to speak.

# Technology module 3

Now that the students have their "beat", we develop some advanced DAW editing skills. During this technology module we work on panning tracks left, right or center, adding effects and mixing down. Panning allows us to place tracks in the stereo field. Effects such as reverb add shimmer and depth to the music and compression increases the dynamic range of the music.

Finally, mixing down the many tracks and adding just a bit more compression makes this Andrew Huang-inspired project ready for export.

# Conclusion

This is a project that is fun, instructional from both a musical and technological standpoint and, of course, hands-on. Students work on their critical thinking skills, musicianship and computer literacy.

## About the author - Mike Dimin

In 1991 Mike Dimin was asked to teach a technology based Music program to at-risk students in a residential high school in upstate New York. At that time technology meant MIDI and multitrack cassette recorders. Fast forward 25 years, DAWs and terabyte hard drives are the new technology, yet the music remains the same. Mike teaches Music at The Charlton School in Burnt Hills, NY.

Mike is also the author of The Art Of Solo Bass.

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## About the Author: Katie

I love to simplify technology for music teachers. I help teachers from all around the world through the Midnight Music Community - an online professional development community where teachers can take online courses, ask questions and receive personalised help for the music tech goals.

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