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Compose Yourself: Personalized Song Creation

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Compose Yourself! **(Personalized Song Creation)**

“Compose Original Songs based on your name, birthday, phone # etc”
“Pi, Patterns, and Playlists: Creating Personalized Music Through Math”

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Background

As a longtime educator and administrator of the arts, I have always subscribed to the simple fact that students who care about and are interested in the subject matter will obviously do better than ones who are apathetic or exhibit negativity. When teaching music, oftentimes you encounter students who are already passionate about the material, but even still, it is a never ending challenge to find new and innovative ways to engage the students by presenting the topic at hand in relevant and meaningful approaches. In order for anything to be meaningful, it must be relevant. Nothing is as relevant as one's own name or personal information, such as their birthday, address, or phone number.

This project is one that I personally developed many years ago whereby a simple conversion can transform any name (or any word or phrase for that matter) into music notes to be used as a basis for a melody to create an original composition. Similarly, any set of numbers can also easily be converted in music notes and scale degrees

One of the most insightful observations I feel I have made of my students over the past 30+ years of teaching, is that those who are able to make relevant and meaningful connections among their various classes will be the ones who succeed the most, both academically and in life. Much too often is the unfortunate case where students compartmentalize the various disciplines and, in failing to see relationships among the various subjects, they remain at a disadvantage. The discipline of music is especially unique in that within its pedagogy, nearly ALL bridges to the other subjects can, with proper guidance, be traversed. Back in 1983, Harvard psychologist Howard Gardner postulated that humans have multiple intelligences that can be categorized in 8 groupings, music being one. My contention is that music is not a separate intelligence, but a combination of all of the others.

“Compose Yourself: Personalized Song Creation” is an innovative educational project that blends music, math, and technology to create a highly engaging and personalized learning experience. Using number patterns such as pi (3.1415), birthdays, phone numbers, and house addresses, students compose original melodies through the free Chrome Music Lab platform. They then convert letters from their names into musical notes using an alphanumeric matrix to literally “compose themselves.”

This approach makes abstract concepts like number patterns and scale degrees both creative and meaningful. By combining music theory with personal data, students

develop a deeper emotional connection to their work, boosting motivation, self-esteem, and identity expression. The project's STEAM-based design promotes interdisciplinary learning, encouraging mathematical reasoning through artistic creation.

Students transcribe their melodies using music notation software, record them, and document the creative process through short videos shared on social media. This real-world application fosters digital literacy, confidence, and pride in their accomplishments.

By turning every student into a composer and content creator, the project supports multiple learning styles—visual, auditory, and kinesthetic—while encouraging self-expression, resilience, and creativity. As a result, it contributes to higher engagement, improved attendance, and measurable academic gains in music classes.

“Compose Yourself” reimagines music education as personal, empowering, and relevant.

Goals and Objectives

Students will build self esteem & learn music theory & math (numeric sequences) by composing songs based on their names & personal numbers. Any musical melody can be described using scale degrees (numbers). Composers often use numeric sequences to strengthen a "hook". Ubiquitous songs will be analyzed to demonstrate this phenomenon. Students will then compose a melodic sequence based on the math term pi (3.1415) using the free Chrome Music Lab platform. The process will be expanded to create individual personalized melodies using students' birthdays, house number, parts of their phone number etc. Students will then learn to use an alphanumeric matrix to convert the letters in their name into music notes to “compose themselves”. The custom melodies created will foster resiliency, self-esteem and excitement in learning music theory as well as manipulating numbers.

I developed this idea years ago and always use it as an introduction to music theory and the concept of scale degrees in order to have students compose original works which are personalized just for them.. The concepts can be explained quite simply and the process works extremely well and is effective for ALL ages. I am always excited to see faces light up when they hear a melody that they themselves created based on their own names and personalized numbers such as their own birthdays or phone numbers.

The goal of this project is to help students and teachers recognize that the structure of music can be used to link many different disciplines, with special attention to the musical alphabet and numbers represented by musical notes. Any musical melody can be described using scale degrees (numbers). Composers often use numeric sequences to strengthen a "hook". Ubiquitous songs will be analyzed to demonstrate this phenomenon. Students will then compose a melodic sequence based on the math term pi (3.1415) using the free Chrome Music Lab platform. The process will be expanded to create individual personalized melodies using students' birthdays, house number, parts of their phone number etc. Students will then learn to use an alphanumeric matrix to convert the letters in their name into music notes to "compose themselves". The custom melodies created will be transcribed using music notation software and recorded. Students will videotape themselves to document the process and edited in order to share and post on social media. The project will foster resiliency, self-esteem and excitement in learning music theory as well as manipulating numbers, resulting in significant gains in attendance and test scores.

It has been shown that students who build and create their own melodies, especially ones that are based on their own names or personalized numbers are much more engaged and more likely to continue formal music instruction on "real" instruments. They also change their attitudes about math and science when they not only see but understand how the various disciplines are interconnected as well as how music can be represented by names, numbers, and geometric patterns. By understanding how music can be analyzed and created using simple names, words and number sequences, it allows for students to inter-relate music, math, and science in new and profound ways. When this basic insight is gained it will increase interest and participation in the instrumental programs at the school with excitement and engagement in learning.

The six main goals of this project for TEACHERS attending today's Learning Expo AND THEIR STUDENTS are as follows:

- 1) Teachers and their students will understand how the piano keyboard is constructed and how to easily identify any white note letter. Teachers will understand Sharps and Flats and be able to identify BOTH letter names of any black note.
- 2) Teachers and their students will learn how to use a simple alpha-numeric Matrix to convert their name (or ANY word) containing the 26 letters of the alphabet into the 7 music note letters with variations using sharps and flats.
- 3) Teachers and their students will learn how to read and understand a single page scale matrix of all musical scales/keys for major (happy) and minor (sad) containing any number of sharps or flats.

- 4) Teachers and their students will learn how to analyze and deconstruct simple commonly known melodies to convert them into a sequence of numbers which can then be easily transposed into any other key or converted between major (happy) and minor (sad)
- 5) Teachers and their students will learn to use this concept in order to create their own compositions based on number sequences unique to themselves (i.e. birthdays, phone numbers, home address numbers etc.)
- 6) Teachers and their students will learn how to translate these numbers into numeric and then melodic sequences in a simple music sound loop using the FREE Google Chrome Music Lab platform.

This project fulfills many important needs of today's students, many of whom are facing particular challenges. This project fills a critical need for engaging, inclusive, and relevant instruction that connects with students on a personal level. Many students today struggle to see the value of traditional music theory or mathematics when taught in isolation. They may also feel disconnected from classroom content, especially if they don't see themselves reflected in the learning experience. Overall, this project helps bridge gaps in engagement, access, identity, and achievement by making learning more personal, creative, and empowering. In particular, this project addresses several key challenges:

1. Low Engagement and Motivation

Many students view music theory and math as abstract or difficult. By integrating personal data into music composition, the project makes learning interactive, fun, and meaningful, increasing student motivation.

2. Limited Access to Resources

Not all students have access to private music instruction or expensive technology. This project uses free and accessible digital tools, ensuring equity in learning opportunities.

3. Lack of Personal Expression

Students often lack opportunities to connect learning to their identity. "Compose Yourself" puts students at the center of the creative process, helping them build self-esteem, ownership, and voice.

4. Attendance and Academic Performance

For students who feel disconnected or unmotivated, attendance and academic performance can suffer. This project gives them a reason to show up, engage, and succeed, with music as the vehicle for broader growth.

5. Emotional and Social Challenges

Many students are navigating complex social and emotional pressures. The project supports self-reflection, resilience, and personal expression, providing a creative outlet that supports mental well-being.

Florida Standards

Note: Because this project can be presented in the various academic disciplines of math, science, music or art, the following CPALMS Florida State Standards can be applied with slight variations across the grade levels and curriculum spectrum.

MA.5.AR.3.1 Given a numerical pattern, identify and write a rule that can describe the pattern as an expression.

MAFS.5.OA.2.3 Generate two numerical patterns using two given rules.

MU.3.S.2.1 Identify patterns in songs to aid the development of sequencing and memorization skills.

MU.5.S.2.In.a Re-create musical patterns from familiar music.

MU.68.F.1.1 Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.

MU.912.O.1.1 Evaluate the organizational principles and conventions in musical works and discuss their effect on structure.

MU.912.O.2.2 Transpose melodies into different modalities through performance and composition.

MU.912.H.3.1 Apply knowledge of science, math, and music to demonstrate, through an acoustic or digital performance medium, how sound production affects musical performance.

VA.68.S.1.1 Manipulate content, media, techniques, and processes to achieve communication with artistic intent.

Materials/Costs

Yamaha PSR-EW320 76-Key Portable Keyboard With Power Adapter



Item #:1500000430391 POS #:120071964

\$299.99

<https://www.guitarcenter.com/search?typeAheadSuggestion=true&fromRecentHistory=false&Ntt=Yamaha%20PSR-EW320>



***Note: ANY keyboard or piano can be used, but most affordable ones are limited in the the number of notes and features. This is just one model that has extra notes, plenty of features, and still very affordable.**

FREE:

[Shared Piano - Chrome Music Lab](https://musiclab.chromeexperiments.com/Shared-Piano/#cqb4omQsW)

<https://musiclab.chromeexperiments.com/Shared-Piano/#cqb4omQsW>

[Chrome Music Lab - Song Maker](https://musiclab.chromeexperiments.com/Song-Maker/song/5440392362852352)

<https://musiclab.chromeexperiments.com/Song-Maker/song/5440392362852352>

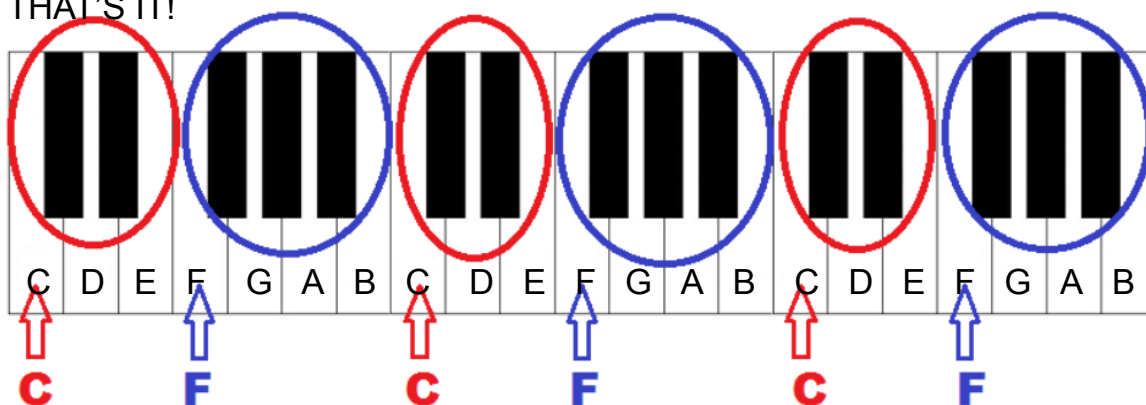
Lesson Plan

Part 1: Understanding the Piano Keyboard & Musical Letters

I have used this project for some time with my keyboard students in order to introduce them to the notes of the piano. In order to play their name they first need to learn the note letters of the piano. Note this is before they learn to read music on the staff, so they don't have to worry about lines, spaces, clefs, ledger lines, note heads, stems, rhythmic values etc. This is to ONLY learn the layout and note letter names of the musical keyboard. For those already familiar, feel free to skip this section.

If you have never learned the piano notes, here's a super easy way, (which will work just as effectively with pre-schoolers as adults.

- 1) Musical notes use only the 1st 7 letters of the alphabet for their names and should always be written in simple, printed, capital, block (san serif) handwriting or typeface... A B C D E F G. Once the letters are used up, it starts over at A. So the letter A will always follow G and G will always precede A. Everyone can see that the piano uses white notes and black notes, and the A-G letters are ONLY attached to the white notes reading from left to right. So, in effect if ANY white note can be identified, then ALL white notes can be determined.
- 2) When viewing a keyboard, notice that the layout of any keyboard uses grouping of black notes in alternating groups 2's and 3's. Most physical keyboards, and almost all printed pictures of the keyboard start with a grouping of 2 black notes. The first white note to the immediate left of any group of 2 is the musical letter C. THAT'S IT!



- 3) Once the note letter C is identified, then it's as simple as filling in the rest of the alphabet D, E, F, G... then A, B, and C again (which will also be immediately to the left of the group of 2 black notes), and the process continues until ALL white notes are labeled. Conversely one can also work backwards from C and label the

note to the left of C, B, and then A, and then G etc. For right now we will hold off on the actual names of the black notes.

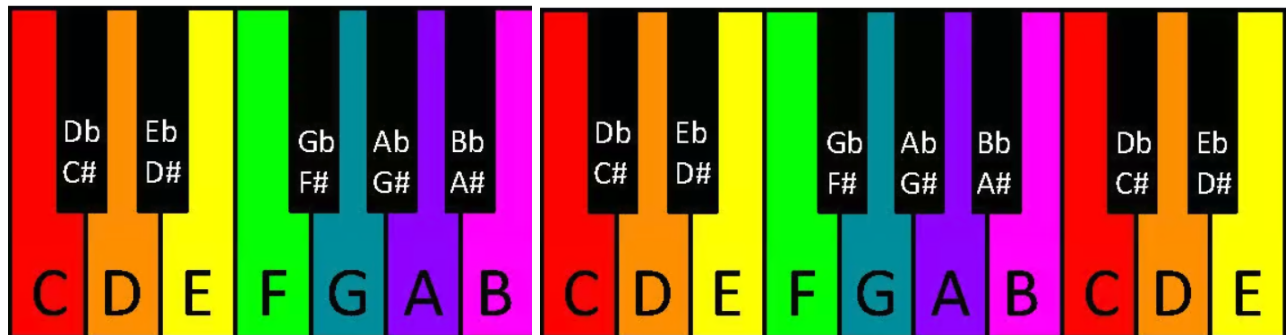
- 4) We now try to find someone in the class whose name (first or last) begins with the letter C (such as Christina or Caleb, or Castellanos etc) and have each of them come up and find and play all the “Christina” notes or “Caleb” notes, etc..
- 5) Next, we notice that the letter F is also easy to find as the white note that is always immediately to the left of the group of THREE black notes. “Who has a name beginning with “F”, and we can now call that note the “Francisco Note” - or if no one in the class has an F name, we can call it the “French Fry” note, or “Flower” note, or any “Favorite” word you want to use.
- 6) Continue this activity for the remaining letters for any A-G names and make each of these people not only learn the C but also the letter corresponding to their name, asking them to describe where THEIR note is in relation to the black notes. “Is it part of a group of 2 or 3? If 2 is it on the left (C) , in the middle of the 2 (D) or on the right of the 2 (E)? If part of a group of 3 black notes, is it on the left (F), on the right (B), or, if in the middle, is it in between the first 2 black notes (G), or between the 2nd and 3rd black notes (A).
- 7) Hint: for really little kids, I have found the easiest note to find of ANY note is actually the letter D, since anyone, even pre-K, can locate the note in the middle of the grouping of 2 0 even if they haven’t yet learned left or right. I usually call this note the “Doggy” note or “Dinosaur” note.
- 8) You may be wondering why we started with C, and not with A?? While most keyboards and pictures of keyboards begin with C, a real full sized 88 note piano (see below) actually DOES start with an A but at first glance, one may mistake the pattern as 1, 2, and then 3 black notes. The very first black note is NOT a group of 1 but actually the last black note in a group of 3 (where the first 2 black notes got “cut off”. As you’ve learned the note A is found in a group of 3 between the 2nd and 3rd black note. If we start with the white note A, then we ONLY see the 3rd black note, and, for most students, you can see how this may just confuse them. So for our purposes, it’s probably best to just begin with the simple group of 2 black notes and the white note C.

(3) 2 3 2 3 2 3 2 3 2 3 2 3 2 3

B ^b A [#]	D ^b C [#]	E ^b D [#]	G ^b F [#]	A ^b G [#]	B ^b A [#]	D ^b C [#]	E ^b D [#]	G ^b F [#]	A ^b G [#]	B ^b A [#]	D ^b C [#]	E ^b D [#]	G ^b F [#]	A ^b G [#]	B ^b A [#]	D ^b C [#]	E ^b D [#]	G ^b F [#]	A ^b G [#]	B ^b A [#]	D ^b C [#]	E ^b D [#]	G ^b F [#]	A ^b G [#]	B ^b A [#]	D ^b C [#]	E ^b D [#]	G ^b F [#]	A ^b G [#]	B ^b A [#]							
A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C

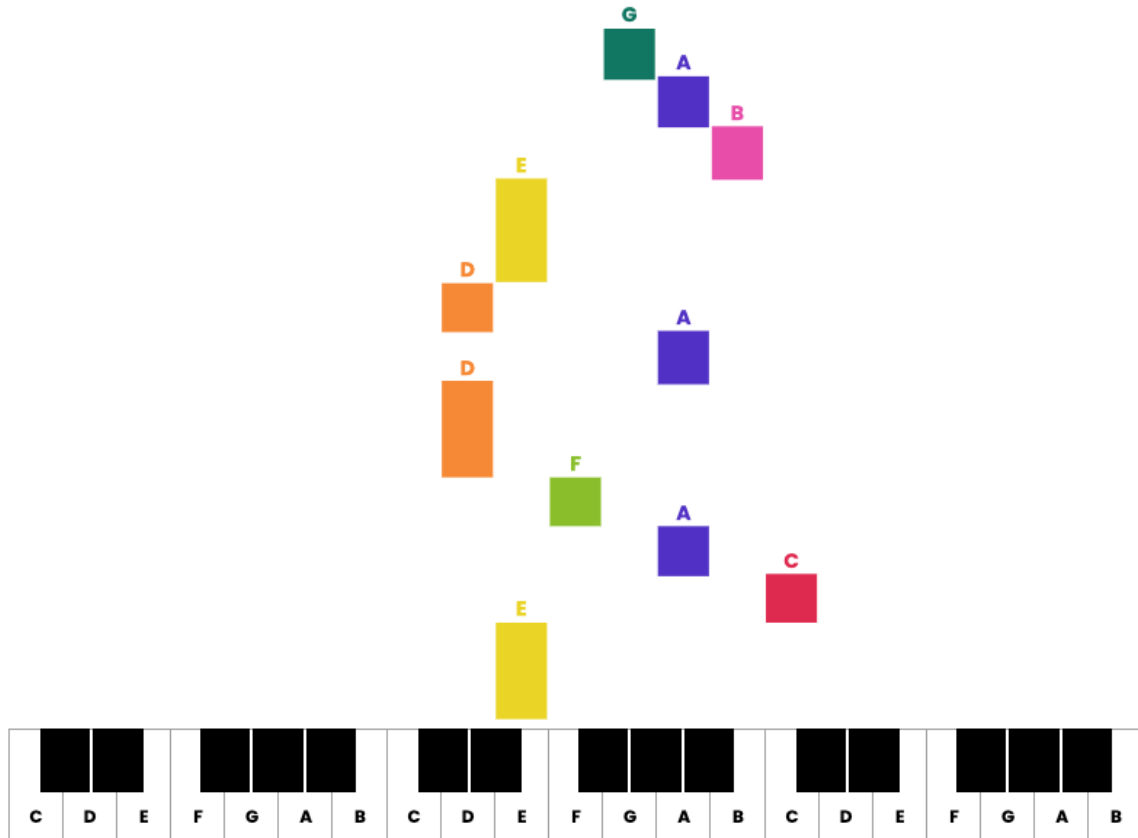
- 9) For any black note name, you simply look to each of the white notes surrounding it. Sharps (#) go UP or to the RIGHT, while Flats (b) go DOWN or to the LEFT. So, for the first of the group of 2, the black note between C and D has TWO

NAMES - C# (C sharp) and Db (D flat). All 12 notes (7 white notes and 5 black notes) are labeled below. Oftentimes, a rainbow color coding is used to further distinguish the notes, which are often implemented on other music education tools, such as bells, boomwhackers etc.



Part 2: Converting Your Name (or any word) Into Music Notes

So far we have learned the letters of all the notes on the piano (white AND black) and highlighted anyone whose name BEGINS with the letters A-G. If you had a name containing ONLY these letters such as “GABE” or “ADA” it would be simple to play your name on the piano or compose your name using the music notes. Below is a graphic representation of the name “GABE DADFACE” if played in the Google Chrome MusicLab Shared Piano.



However, we know nearly all names contain many letters NOT found in music. So if we want to convert a name (or any word) containing ANY letter let's say ...

"A U D R E Y O N Y E I K E" she only has a few music notes
 "A D E E E" so we need to come up with a conversion table (Shown below). As you can see the letter "U" would be converted to the music note "G" Both "R" & "Y" turn into "D" etc. Her full name is shown below.

Note Letters	A	B	C	D	E	F	G
Remaining Alphabet	H	I	J	K	L	M	N
	O	P	Q	R	S	T	U
	V	W	X	Y	Z		

A	U	D	R	E	Y		O	N	Y	E	I	K	E
A	G	D	D	E	D		A	G	D	E	B	D	E

My name, would be...

W	A	L	T	E	R		B	U	S	S	E
B	A	E	F	E	D		B	G	E	E	E

Using the conversion matrix above, print your full name, or ANY word or phrase, and "compose yourself" below each letter, using uppercase, block printed letters, and leaving a blank in between words.

Let us now hear what some of your names sound like...

Part 3: Performing your name live & programming your name in Google Chrome Music Lab

When playing your name on the piano, there are some options you have. If you are moving from A to F, for instance, you can play the A and then the F which is the sixth note to the RIGHT jumping UP... OR you may prefer to play the A and go to the CLOSER F, which is the third note DOWN to the LEFT. It is also easier on the brain to try to find groupings of 2-5 notes that may all be close together, repeated or form shapes or patterns. You also have plenty of leeway in how long each note lasts, what type of rhythm you may want to use, or even what style of accompaniment, with matching chords (for those who may already have more advanced skill sets).

If you don't have access to a piano, you can use any of the free online virtual pianos such as the Google Chrome MusicLab Shared Piano. (link below - screenshot shown above)
[Shared Piano - Chrome Music Lab](#)

You can also program your name in the online Chrome Music Lab Song Maker tool, where the name can be repeated, be sped up or slowed down, played with different instrument sounds, and even add a drum beat. Below is Audrey's name put in twice. See below and click on the link to hear her's and then program your own name!!

[Chrome Music Lab - Song Maker](#)

The screenshot shows the Chrome Music Lab Song Maker interface. At the top, there's a browser window with multiple tabs. The main area is a piano roll with a grid of colored squares (purple, green, yellow, orange, pink) representing notes. Below the piano roll is a control bar with a play button, a tempo slider set to 115, and buttons for Synth, Electronic, Midi, Mic, Settings, Undo, and Save. At the bottom, there are two rows of letter boxes for programming a name. The first row contains 'A U D R E Y' and 'O N Y E I K E'. The second row contains 'A G D D E D' and 'A G D E B D E'.

A	U	D	R	E	Y		O	N	Y	E	I	K	E
A	G	D	D	E	D		A	G	D	E	B	D	E

Part 4: Using Sharps and Flats for Melodic Variations

We will now consider a few ways to create variations in your name, using some of the sharps and flats. So far we have converted the names into ONLY white note letters. The following simple method can be applied to create some variations. For variation #1 we will keep our original name, using only white notes. For variation #2, we will copy the name exactly, but alter just 4 of the 7 letters changing the white notes F, C, G, & D to corresponding SHARPS F#, C#, G#, & D#. Letters A, E, & D do NOT change and remain on the white notes. For variation #3 we implement the same idea, but change the letters B, E, A, & D to their corresponding FLATS Bb, Eb, Ab, & Db. In this flat version, letters G, C, & F remain the same on the white notes. An example of all 3 variations of my name is shown below.

Original Name

W	A	L	T	E	R		B	U	S	S	E
---	---	---	---	---	---	--	---	---	---	---	---

Version #1: Name Converted to White Notes

B	A	E	F	E	D		B	G	E	E	E
---	---	---	---	---	---	--	---	---	---	---	---

Version #2: Name with F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

B	A	E	F#	E	D#		B	G#	E	E	E
---	---	---	----	---	----	--	---	----	---	---	---

Version #3: Name with B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

Bb	Ab	Eb	F	Eb	Db		Bb	G	Eb	Eb	Eb
----	----	----	---	----	----	--	----	---	----	----	----

Now take a few moments to do the same for your name...

Original Name

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #1: Name Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #2: Name with F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #3: Name with B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Below are some blank forms for you to try other names, words, or ANY phrase...

Original Name/Phrase

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #1: Name/Phrase Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #2: Name with F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #3: Name with B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Original Name/Phrase

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #1: Name/Phrase Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #2: F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #3: Name with B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Original Name/Phrase

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #1: Name/Phrase Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #2: F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #3: B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Part 5: Understanding Melodic Analysis and Converting Your B-Day, Phone #, Address (or any set of numbers) Into Music Notes

So far, we have explored converting names, words and phrases from the 26 letters of the alphabet to the 7 letters used in music A-G. Next we will consider when numbers represent personal information. This can be for birthdays, phone numbers, addresses, etc. Many do not realize that just about ALL music from anywhere or any time, can be represented and analyzed numerically. Furthermore, there are mathematical and geometric patterns all throughout musical compositions and composers will often utilize these tools in order to create stronger, and more memorable melodies, sometimes called “hooks”. In its simplest form, we simply assign each musical letter to a number starting with 1 at A, 2 for B and so on. We call these SCALE DEGREES. Notice that the number 8 is the same as 1, 9=2, 10= 3 etc. The number zero could either be letter G, or C as in the number 10.

G	A	B	C	D	E	F	G	A	B	C	D	E
(0)	1	2	3	4	5	6	7	8	9	10	11	12

Without getting into too much music theory, it is important to know that if we start on A as #1 and it becomes our “Home” we end up with an A Minor Scale - which is usually interpreted as “sad”.

Because the note C is home for most beginning songs that are happy (ie Major), we can also use the MORE COMMON C Major (Happy Scale) where the note C is home (1 & 8)

B	C	D	E	F	G	A	B	C	D	E	F	G
(0)	1	2	3	4	5	6	7	8	9	10	11	12

In reality, we can actually start with #1 on ANY note (black OR white) and then that note becomes the “home” or “tonic” and once we understand how all the scales work and are constructed we can do all sorts of manipulations, conversions, transpositions etc. but most of that is beyond the scope of this project. (if interested.. See the key signature/scale worksheet matrix at the end of this paper)

If our address happened to be the math number pi 3.1415, we could convert to music notes in two possible ways below. Understand that these can ALSO utilize the SHARP 7 FLAT variations to change some of the notes, the same way we did with the names above.

<i>pi π</i>	3	1	4	1	5	<i>pi π</i>	3	1	4	1	5
A MINOR	C	A	D	A	E	C MAOR	E	C	F	C	G

Now, using the charts on the previous page for A minor and C major scales, take a few moments to do the same for some numbers significant in your life ...

USING THE A MINOR SCALE

Original Numbers.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #1: Numbers Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #2: Numbers with F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #3: Numbers with B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

USING THE C MAJOR SCALE

Original Numbers.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #1: Numbers Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #2: Numbers with F, C, G, & D Converted to SHARP Notes (B, E & A stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Version #3: Numbers with B, E, A, & D Converted to FLAT Notes (F, C, & G stay white)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Part 6: Developing Melodies With Melodic (Number) Sequences

We are now going to get really creative using a tried and true compositional technique that composers have used throughout the ages - and is still used today, in order to create strong memorable melodies that may stick in your head like a proverbial “ear worm”. By taking a short melodic theme, and converting into numbers, that idea can be strengthened by repeating the same idea, but just moved up or down by one number. In math we call this numeric sequencing or number sequences. The same idea applies in music and is called Melodic Sequencing. It is ubiquitous in all styles, genres, and ages of music and one of the most famous is shown below. Beethoven used this simple 4 note motif where he repeated the 5th note of the C minor scale (G) three times on short notes and then went to the third note of the scale (Eb) for a longer note. This 5-5-5-3 idea is then repeated, but one step lower, by simply subtracting 1 from each note = 4-4-4-2.

Beethoven Symphony No. 5 in C minor



Beethoven's sequence above is descending, or going down, but it is just as common to ADD 1 (or 2) to each number (scale degree) in order to “hook” a listener. Below are two examples of an ascending sequence used in the Sound of Music.

Sound of Music - Do-Re-Mi by Rodgers & Hammerstein (in C Major)

1 2 3 1 3 1 3 2 3 4 4 3 2 4
3 4 5 3 5 3 5 4 5 6 6 5 4 6
5 1 2 3 4 5 6 6 2 3 4 5 6 7 7 3 4 5 6 7 8

Below is one of my favorite 20 note motifs with a descending melodic sequence ingeniously constructed by Mozart utilizing the scale of G minor.

Mozart 40th Symphony in G minor

It's important to note that most of the time composers use it sparingly, and only go through one or two iterations before moving on to another idea. Otherwise, it begins to sound like an academic study, as used extensively in warm ups and specifically in a famous technique book for piano called the Hanon Exercises.

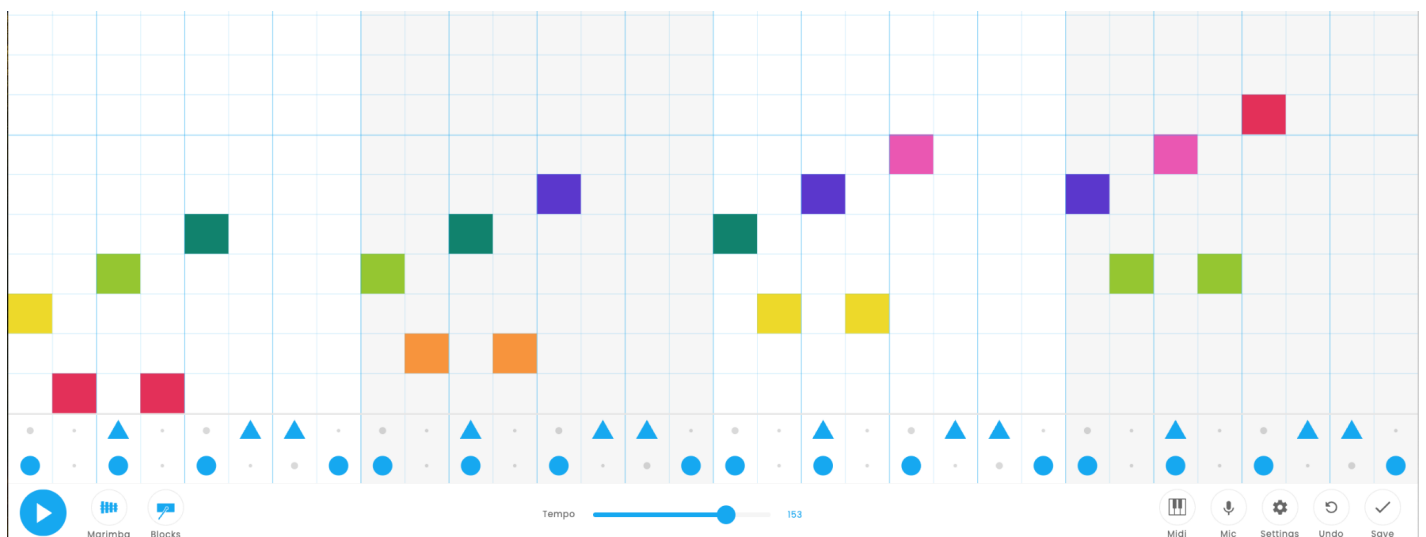
Here is what the number pi (π) 3.1415 would be as it moves up by one step in 4 iterations in the scale of C Major. 31415, (+1) = 42526, (+1) = 53637, (+1) = 64748. And below is what it looks and sounds like when programmed in Chrome Music Lab.

Pi (π) 3.1415 melody in C MAJOR with ascending melodic sequence four times.

[Chrome Music Lab - Song Maker](https://musiclab.chromeexperiments.com/Song-Maker/song/6314962796019712)

<https://musiclab.chromeexperiments.com/Song-Maker/song/6314962796019712>

3	1	4	1	5	(+1)	4	2	5	2	6	(+1)	5	3	6	3	7	(+1)	6	4	7	4	8
E	C	F	C	G	(+1)	F	D	G	D	A	(+1)	G	E	A	E	B	(+1)	A	F	B	F	C



On the following page try to create your own melodic sequence using a few numbers from your life. Try one going up (ascending) and one going down (descending).

CREATING ASCENDING MELODIC SEQUENCE

Original Numbers.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

ORIGINAL THEME (MOTIF): Numbers Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #2 Numbers (add +1 to original numbers)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #2 NOTES (or next letter of alphabet from Orig Theme Notes)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #3 Numbers (add +1 to above Seq #2 numbers)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #3 NOTES (next letter of alphabet from Seq #2 Notes)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

CREATING DESCENDING MELODIC SEQUENCE

Original Numbers.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

ORIGINAL THEME (MOTIF): Numbers Converted to White Notes

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Descending Sequence #2 Numbers (subtract -1 from original numbers)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #2 NOTES (or previous letter of alphabet from Orig Theme Notes)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #3 Numbers (subtract -1 from Seq #2 numbers)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Ascending Sequence #3 NOTES (previous letter of alphabet from Seq #2 Notes)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Part 7: Advanced Techniques: Adding Chords, Harmonies, Accompaniments & Musical Styles using an Arranger Keyboard

What is nice about this project is that it can be used at ANY level of music education. From Pre-K 3 where kids can hear what their name sounds like - through advanced High Level IB or college composition student projects. Beginning piano students of any age, can use these techniques to learn the notes of the piano, or be inspired to write original songs. The melodies can be very simple, using only a few notes, or can be a basis for themes used in Canons and Fugue writing, or even 12 Tone Serial composition projects in various creative ways. One student even took her first name as a basis for the main melody played by her right hand on the piano, and, at the same time used her last name to form the accompaniment played by her last name, with both names overlapping and played simultaneously. In the case of film scoring, musical theatre, or opera creation, the various characters' names can each be represented as a unique lietmotif. For those with more knowledge and experience, these melodies will oftentimes evoke specific chords, harmonies, or musical style, where full songs and arrangements can be improvised using auto accompaniment features of arranger keyboards.

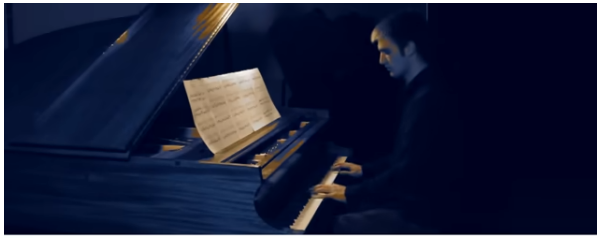
It's also important to understand that music is not an exact science. Many of these techniques, in the hands of experienced composers and arrangers, more often than not, will be used merely as fodder for thematic material, that will inspire other melodies or musical ideas. As a composer myself, sometimes it only takes a few notes put together in a new way that will cause spark and get the creative juices flowing.

Hopefully, wherever you may be on your life's musical journey, you will find something in this project that will help you to "COMPOSE YOURSELF".

*As always, these projects can be altered and adapted to fit your situation, budgetary constraints or your students interests and/or abilities.

EXTRA:

Resource List

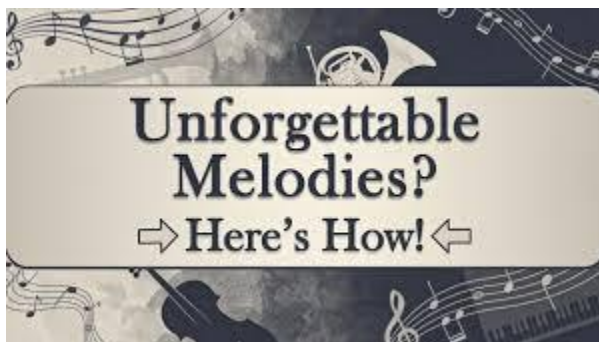


I created the melody for this song by taking π and assigning each number to a note on the A Harmonic Minor scale.

[Song from \$\pi\$! \(Studio Version\)](#)



[Songs That Use Sequence](#)



[Unforgettable Melodies: Step-by-Step Guide](#)



[Melodic sequences: To create contrast in your Music](#)

Major & Minor Scales Worksheet

KEY SIGNATURE SCALE WORKSHEET									
Qty #s. b's	Order #'s b's	Major Key	1 2 3 4 5 6 7 8 Do Re Mi Fa Sol La Ti Do	Relative Minor Key (6th of Maj)	1 2 b3 4 5 b6 b7 8 Do Re Meh Fa Sol Leh Teh Do	Minor scale Leading tone #7			
7	F# C# G# D# A# E# B#	C#	C# D# E# F# G# A# B# C#	A# m	A# B# C# D# E# F# G# A#	GX			
6	F# C# G# D# A# E#	F#	F# G# A# B C# D# E# F#	D# m	D# E# F# G# A# B C# D#	Cx			
5	F# C# G# D# A#	B	B C# D# E F# G# A# B	G# m	G# A# B C# D# E F# G#	Fx			
4	F#, C#, G#, D#	E	E F# G# A B C# D# E	C# m	C# D# E F# G# A B C#	B#			
3	F# C# G#	A	A B C# D E F# G# A	F# m	F# G# A B C# D E F#	E#			
2	F# C#	D	D E F# G A B C# D	Bm	B C# D E F# G A B	A#			
1	F#	G	G A B C D E F# G	Em	E F# G A B C D E	D#			
0	NONE	C	C D E F G A B C	A m	A B C D E F G A	G#			
1	Bb	F	F G A Bb C D E F	Dm	D E F G A Bb C D	C#			
2	Bb Eb	Bb	Bb C D Eb F G A Bb	Gm	G A Bb C D Eb F G	F#			
3	Bb Eb Ab	Eb	Eb F G Ab Bb C D Eb	Cm	C D Eb F G Ab Bb C	Bb			
4	Bb Eb Ab Db	Ab	Ab Bb C D Eb F G Ab	Fm	F G Ab Bb C D Eb F	Eb			
5	Bb Eb Ab Db Gb	Db	Db Eb F Gb Ab Bb C Db	Bb m	Bb C Db Eb F Gb Ab Bb	Ab			
6	Bb Eb Ab Db Gb Cb	Gb	Gb Ab Bb Cb Db Eb F Gb	Eb m	Eb F Gb Ab Bb Cb Db Eb	Db			
7	Bb Eb Ab Db Gb Cb Fb	Cb	Cb Db Eb Fb Gb Ab Bb Cb	Ab m	Ab Bb Cb Db Eb Fb Gb Ab	Gb			
Chord Roman Numerals		Maj	I ii iii IV V vi vi° I	Min	i ii° bIII iv v(V) bVI bVII i				