

**Become the Music: The Science Behind Brains and the Beat**  
**By Mindy Thomas**

<<scene opens with the gang in the ice cream truck singing, *Oops I Slipped On a Penguin*>>

Everyone: <<singing along to the radio>> Oops i slipped on a penguin

Gramma G-Force: Fingerling, quit dancin' on me! You almost poked my face out!

Fingerling: Well quit sticking your face in my dancin'!

Mindy: <<sigh>> <<turns off radio>> Quit fighting, you two! Don't make me turn this ice cream truck around!

Guy Raz: Maybe don't dance so hard, Mr. Fingerling.

Fingerling: Oh, I can't help it! Whenever I hear that song, my body just wants to move! You know?

Dennis: And when I hear that song, it makes me cry a little bit because I wish I had a penguin to slip on. <<cries a little>>

Guy Raz: Huh?

Gramma G-Force: Quit gettin your leaky face juice all over me, boy!

Dennis: Oops, sorry.

Guy Raz: So Mindy, what is this thing we're going to again?

Mindy: Oh, it's this really cool workshop called, Become the Music.

Guy Raz: Huh?

Mindy: And it's taught by this really cool instructor who has been working on it ever since she read this really cool new study in the scientific journal, Nature Reviews Neuroscience. Also, did I mention how cool the instructor is?

Guy Raz: Uh, yeah, you did.

Mindy: Good, because she's really cool.

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Dennis: Oh yeah, she sounds so kew-wal.

Mindy: I know. And the study is all about how we humans physically become the music we listen to!

Guy Raz: Become the music we listen to? How could that be possible?

Mindy: I don't know. Here, take a look at this brochure on the workshop.

Guy Raz: Ah, let's see here. Ahem. <<reading>> Become the Music. Think music is just something you hear? Well, think again, pal! Join me, a really cool instructor, as I take you into your brain, through your body, and out your butt—<<stops reading>> Mindy, what is this?

Mindy: It's science! Keep reading!

Guy Raz: <<keeps reading>> <<sigh>> Okay, we will explore how music on the outside connects with what's happening on our insides.

Mindy and Guy Raz together: It's time to become the music. And it's gonna be bonkerballs.

Dennis: So kew-wal.

Guy Raz: Yeah, I think I'm getting a clue as to who this "super cool" instructor is.

Mindy: Hmm, I wonder who it could be?

Fingerling: Oo-da-lolly! Are we going to dance class?! <<starts dancing>>

Gamma G-Force: No! Stop.

Fingerling: Uh.

Mindy: Oh, looks like we're here! <<slams on the brakes>>

Everyone: ahhhh!

Guy Raz: <<a little out of breath from the sudden stop>> Mindy, we're right back home at the laboratory of bad ideas!

Mindy: Yeah, like I said, we're here!

Guy Raz: Did you just drive us in a circle?

Gramma G-Force: Is that why I'm dizzy?

Mindy: Sorry, no time for questions. We gotta get inside! I don't wanna be late for this really cool instructor who's waiting.

Guy Raz: Okay, come on. Everyone out.

<<doors slam>>

Guy Raz: Okay, let me just put the code in for the laboratory of bad ideas...

<<keypad>>

Dennis: Oh look! There's a new sign on the door- Become the Music

Fingerling: Neat.

Guy Raz: There we go.

<<lab doors open>>

<<music changes to something mysterious>>

<<everyone walks in>>

Dennis: Why is it so dark in here?

Gramma G-Force: I can't see nuthin! Who unplugged my eyeballs?

Guy Raz: I think the lights are just off.

Fingerling: Oh, it sure is mysterious with no light

Dennis: I don't like it.

Guy Raz: Hello? Anybody home? We're here for the Become the Music workshop...

Gramma G-Force: And I am here against my will.

Guy Raz: Hello? <<loud whisper>> Mindy, what's going on here? Where are the lights? Mindy? Mindy??

<<curtain opens>>

Everyone but Mindy: <<gasp>>

Guy Raz: Is that a stage?

<<spotlights turn on>>

Everyone but Mindy: <<gasp>>

Dennis: Oh! A baby grand piano!

Booming Announcer: Welcome to... Become the Music!

Guy Raz: <<sigh>> Mindy...

Booming Announcer: A scientific sensory spectacular through song!

Everyone but Mindy: <<gasp>>

Gramma G-Force: I do not want to be here.

Fingerling: G-Force, quiet!

Booming Announcer: Give it up for your super cool brain and body musical guide... Mindy!

<<Mindy comes out to the stage>>

Everyone but Mindy: <<applause and wooting>>

Mindy: Thank you! Thank you everyone!!

Reggie: coo

Dennis: I know her! Hi Mindy! It's me, Dennis! Look guy, it's Mindy!

Guy Raz: Yep, I see her, Dennis.

Dennis: We love you, Mindy!!

Reggie: coo

Mindy: Hello everyone and thank you all for coming out tonight.

Guy Raz: Mindy, it's 10am!

<<Mindy sits at the piano>>

Mindy: Now, here at Become the Music, we're going to explore the ways in which we not only enjoy music, but how our bodies synchronize with the music that we hear.

Reggie: coo

Fingerling: Synchronize? You mean, like indancing?

Mindy: Yes, but even deeper than dancing. Because inside our bodies, inside our brains, our biological beats and rhythms, synchronize with the music we hear.

Guy Raz: Really?

Mindy: Really.

Dennis: What? Music can sync with our actual brain waves?!

Mindy: That's right!

Guy Raz: So, if music can affect our brain activity, is that how music can change the way we feel?

Mindy: Well that's a great question, young man.

Guy Raz: Young man?

Mindy: Can I get your name?

Guy Raz: Mindy! You know my name! I'm your best friend, Guy Raz!

Dennis: Yeah! And we wanna know how body and brain beats matching with music beats, can change the way we feel!

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Mindy: Well why don't I answer your question... with a song.

Guy Raz & Dennis: A song?

Reggie: coo

Mindy: <<plays song #1>>

<<song #1 ends>>

Everyone but Mindy: <<cheering and hoorays>>

Dennis: Wow! I felt it! I felt the music change me!

Guy Raz: Really? How do you feel?

Dennis: I feel awe and curiosity!

Reggie: coo

Fingerling: Me too!

Gramma G-Force: Not me. That song was a little repetitive if you ask me.

Guy Raz: Well I'm feeling curious as well! I want to know more!

Mindy: Okay! Well, thanks to a group of scientists at McGill university in Montreal, Canada, there is now a scientific theory for these feelings you were all experiencing during that song!

Everyone but Mindy: There is?

Mindy: There is! It's something called neural resonance theory.

Gramma G-Force: That is too many words I have never not heard.

Fingerling: Yeah! Say those words again, mandy!

Mindy: Neural resonance theory, or NRT for short.

Gramma G-Force/Dennis/Fingerling: Huh?

Guy Raz: Oh, I got this Mindy. Okay, so neural just means anything having to do with your brain or nerves.

Mindy: Yeah, like the super fast electrical wires that send messages all over your bodies.

Fingerling/Gamma G-Force/Dennis: <<murmur in understanding>>

Guy Raz: And resonance means when two things line up or vibrate together.

Mindy: Yeah, like when Dennis and Reggie are both swinging on swings and if they start pumping at just the right time, they can weing higher and higher, together.

Reggie: coo.

Fingerling/Gamma G-Force/Dennis: <<murmur in agreement>>

Fingerling: That is a very good analogy.

Guy Raz: And a theory is an idea that scientists have tested over and over again to help explain how something in the world works.

Mindy: So all together, neural resonance theory is a term used to describe what happens when the natural rhythms of our brains sync, or line up, with the rhythms in music!

Gamma G-Force: I do not know what that is.

Guy Raz: The rhythms in music, you know, like the beats, melodies, and harmonies.

Dennis: Yeah, like this! <<sings a little song>>

We're singing!  
and clappin our hands  
and stompin our feet  
all together  
we're-

Gamma G-Force: No!!

Dennis: Okay.

Reggie: coo

Fingerling: Hold on, just a minute, mandy. Are you saying that no one's ever studied music and its effects on the brain before?

Mindy: Oh no. There have been studies. You see, before NRT, scientists believed that people enjoy music because our brains enjoy guessing what comes next in a musical pattern.

Guy Raz: Oh, like if a song goes, boom-boom-clap... boom-boom-clap- our brains think, "Oh! I know the next sound!"

Mindy: Right! And then it happens, and it feels fun.

Guy Raz: Interesting...

Dennis: Oh, I get it. It's like when a song walks into our brain, our brain says, "Oh, hello song, may I have this dance? And then the song is like, "Sure, only if you can keep up." And then they dance and dance and it looks good and everyone else in the brain is like, "Wow, you are so in sync with each other! You two should go on the Dance Pants Evolution tour!"

Guy Raz: What?

Mindy: Well, yeah, basically!

Dennis: Thank you!

Gamma G-Force: But Mindy, what happens in my brain after that?

Fingerling: Yeah! We wanna know what's happening during the brain dance!

Guy Raz: That's a great question.

Gamma G-Force: I know it is Garage.

Mindy: Well, I could tell you.....

Everyone but Mindy: Yessssss?

Mindy: Or I can sing it with you!

Gramma G-Force: Not again.

Mindy: Now hold on tight everyone, because we're about to take our bodies and brains on an emotional rollercoaster ride through song.

Mindy: <<starts song #2>>

<<song #2 ends>>

Everyone: <<out of breath>>

Guy Raz: That was incredible!

Fingerling: Oh, I think I'm gonna barf.

Mindy: Oh, you'll be fine. Did you all notice how your brains were basically dancing with the song just now?

Gramma G-Force: I noticed that it put me on an emotional runaway rollercoaster!

Guy Raz: Yeah! Me too!

Mindy: Exactly! When this neural resonance, or the natural rhythm of our brains, lines up with the rhythm of a song it can do wild things inside our bodies!

Guy Raz: Like make us feel different emotions! Happy, sad, excited, calm.

Fingerling: Well, when my brain started dancin with the song my body couldn't help but join the party! I was wigglin' all over the place!

Mindy: Yes, and that's because this lining up of the rhythms also impacts the way we move when we hear music!

Guy Raz: Huh, so what this study is suggesting here Mindy, is that when our bodies start to react or move with music, it's because our brains have synced or lined up with it?

Mindy: You know it! and that's because music is not something we just hear or learn, it's our brains and bodies literally vibrating along with it and this is something that happens naturally! and not just from being taught.

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Dennis: And maybe that's why we can't help but dance! Or cry! Or feel happy when our brain beats are dancing with the music we hear!

Mindy: Yes! You've got it Dennis!

Dennis: Ha, ha, ha, Hooray!

Gramma G-Force: Mindy.

Mindy: Yes, Gramma G-Force?

Gramma G-Force: I have a question.

Mindy: Sure! Let's hear it.

Gramma G-Force: Why should I care about none of this?

Fingerling: Yeah

Mindy: Well, this new discovery can have a big impact on people around the world. First off, it could maybe be used for coming up with tools to help people heal their brains and bodies when they're sick or feeling down.

Guy Raz: And I'm guessing they could also use this discovery to help people learn to keep a beat and sing on pitch when they're learning music.

Mindy: For sure! But most importantly, this discovery is helping to explain why music makes people dance! and sing! And why it has the power to connect people from different cultures around the world, even when they don't speak the same languages!

Dennis: Not to mention, this probably gives scientists the secret scoop on how to scientifically design music. Like, I don't know, if they wanted to make the scientifically most danceable song in the whole wide world!

Mindy: Oooh! which reminds me! I've been wanting to dust off an old friend, and I think now might be the perfect time.

Guy Raz: <<murmuring>> Old friend?

Gramma G-Force: <<murmuring>> I don't like old people. I only like the new ones.

Dennis: Ooh! What is it, Mindy!?

Mindy: Anyone remember... the sing-a-ma-thing?

<<Mindy rips a sheet off of a large machine>>

<<we hear the sing a ma things sputter to life and die back down>>

Dennis: <<gasp!>>

Gramma G-Force: No.

Guy Raz: Wait! Is that the old machine you invented years ago that turns speech into song?! I thought it exploded or something!

Mindy: What? No! It's still good!

<<pats machine>>

<<sputters and hisses and a piece falls off>>

Mindy: Mostly. What do you say we power this puppy up and see if it's still got its magic.

Guy Raz: Well, don't know if that's necessary, Mindy. I mean I think we could just-

Mindy: Too late! <<effort>> <<pull cord>>

<<sing-a-ma-thing rumbles to life>>

Everyone: Whoa!!!

Mindy: Yup, still works!

Reggie: coo

Mindy: Now what do you say we use this singamathing and what we've learned from the NRT study to create a song!

Guy Raz: Uh, okay, what do we do first?!

<<song #3 begins>>  
the scientifically most danceable song in whole wide world intro

Mindy: [spoken]  
Let's start with a kick drum... and set the bpm to 125

Dennis: [spoken]  
Kew!

Guy Raz: [spoken]  
Now snare...  
A simple 4/4 beat.

Dennis: [spoken]  
Ooh a synth riff!  
[sung] in a serious minor key

Gramma G-Force: [spoken]  
Guitar! Oh snap

Fingerling: [spoken]  
Sick! ... sync-o-pa-tion

<<sing 3 ends>>  
<< singamathing sputters and stops>>  
<<breaks apart and falls?>>  
<<Fingerling is the only one still dancing and clapping and singing>>

Fingerling: ... song in the world... whole wide world... oh... nevermind.

Dennis: Hey, what happened?

Gramma G-Force: Boy, we became the music.

Mindy: We sure did! Class dismissed!

Everyone: <<cheers>>

<<singamathing plays musical button to end episode>>

THE END