

MOLLY BLOOM: You're listening to *Brains On*, where we're serious about being curious.

SPEAKER 1: *Brains On* is supported in part by a grant from the National Science Foundation.

SPEAKER 2: Now, you're going to translate the following sentence, let's go for a walk.

SANDEN TOTTEN: Oh, I know this one. R-r-ruff.

[DOG BARKS]

Thanks. I've been working on it.

SPEAKER 2: Now, translate this, there's a bush, I'm going to pee on it.

Rrr-ruff-ruff.

[DOG BARKING]

I know, that's a tough one.

MOLLY BLOOM: Hey, Sanden and Penelope poodle.

ZOSIA: What are you doing?

SANDEN TOTTEN: Oh, hey, Molly. Hey, Zosia. I'm using these tapes to work on my BSL.

MOLLY BLOOM: You're what?

SANDEN TOTTEN: You know BSL-- barking as a second language. Penelope's helping me work on my accent.

[DOG BARKS]

I know, I know it's terrible. But, hey, your language is really hard, Penelope. And I know I'm not even close to nailing the accent yet.

SPEAKER 2: Next, translate the following. Please, can I have your peanut butters?

SANDEN TOTTEN: Oh, I think it's--

[MIMIC DOG WHIMPERS]

[DOG WHIMPERS]

Wait, like this? [MIMIC DOG WHIMPERS]

MOLLY BLOOM: I think she's saying it more like, [MIMIC DOG WHIMPERS]

[DOG BARKS]

ZOSIA: No, you're mispronouncing the second half. It's

SANDEN TOTTEN: Whoa

MOLLY BLOOM: No, no, no.

ZOSIA: Whoa

SANDEN TOTTEN: Whoa Whoa. Whoa.

MOLLY BLOOM: You're listening to *Brains On* from APM studios. I'm Molly Bloom, and my co-host today is Zosia from Oxford, England. Hi, Zosia.

ZOSIA: Hi, Molly. I can't even begin to tell you how excited I am to be here. I'm doing my excited face right now. So it's just as, well. No one can see me.

MOLLY BLOOM: I would love to see what you're excited face looks like. But I am also very excited you're here, so I'm making my excited face, which you can't see. So, Zosia, this episode was inspired by a question that you sent to us.

You wanted to know how accents develop? So an accent is basically different ways of pronouncing the same words. So, for instance, I say, this water glass is half full. And Zosia, you say,

ZOSIA: This water glass is half full.

MOLLY BLOOM: Sounds a little different, right? Some words are pronounced very differently, especially between England where Zosia lives, and the United States where I live, like, vitamin.

ZOSIA: Vitamin.

MOLLY BLOOM: Schedule.

ZOSIA: Schedule.

MOLLY BLOOM: Tomato.

ZOSIA: Tomato.

MOLLY BLOOM: And depending on where you live in the UK or the US, you might pronounce these differently than Zosia and I do.

ZOSIA: Or maybe you live in Australia or India or Zimbabwe. Your pronunciation is probably pretty different too.

MOLLY BLOOM: So, today, we're going to look at why there are so many different ways to pronounce the same words and where our accents come from. And we should mention that you can have different accents in many different languages, but we're focusing on English today. So Zosia, I'm curious, what made you think of this question?

ZOSIA: Well, I was reading a Science Magazine, and it had a couple of pages about accents. But I really didn't think it delve deep enough, and I really wanted to find out more.

MOLLY BLOOM: So when you first talked to me about this, you said your accent, sort of, a muddle of different accents. So can you tell me what your accent is a mix of?

ZOSIA: It's, sort of, a mix of North and South English.

MOLLY BLOOM: So for people who are not from England like me, what are some of the differences that you've noticed in those two accents?

ZOSIA: Well, so, sometimes I say things like plant, grass, bath, which is sort of Yorkshire. Sometimes I say grass, path, bath, glass, which is where Oxford comes in, which is where I live. I hear a muddle of different vowels every day, so I say a muddle of different vowels every day.

MOLLY BLOOM: And right now, you're in Poland visiting your mom's family and friends because she's from Poland originally. So when you speak Polish, do you feel like your accent is different than the native speakers around you?

ZOSIA: Well, actually, I didn't. But someone pointed out to me that my accent is a little bit more singsong, and it goes up higher at the end. The native Polish speakers sentences, and I think that's something to do with my English accent, like maybe the same melody.

MOLLY BLOOM: That's really interesting. Could you do a little example of what it might sound like when you speak a Polish sentence and what maybe the other Polish speakers are picking up on?

ZOSIA: We accent Tony Starkey, no, never make the movie it's ala.

MOLLY BLOOM: So that's how you would say it.

ZOSIA: I speak like that a lot because sometimes I don't know what to say. So I kind of say but, and this thing, instead of the actual ones.

MOLLY BLOOM: That's really interesting. So your accent has hints of both of your parents. But you mostly sound like people from Oxford, which is a specific kind of British accent. And that makes sense because you live there, and lots of your friends speak with that accent.

ZOSIA: Right, and humans are wired to want to fit in with friends and neighbors.

MOLLY BLOOM: We are social animals. And that means we love being part of a group. Millions of years ago, as we were first evolving, being a part of a group kept us safe. We kept an eye out for predators, hunted for food together, shared the berries we gathered, working as a team helped us thrive.

ZOSIA: And that's affected the ways that we talk and act today. As soon as we're old enough to go to school, we want to fit in with the group. And part of that is talking like everyone else.

MOLLY BLOOM:

Even if you don't notice it, your brain is trying to get you to fit in with all of the other kids. Over time, your accent will become similar to theirs. So if you're at a school where everyone has a Minnesotan accent, soon enough, you'll sound Minnesotan too, even if your parents are from New York.

I lived in Brooklyn until I was six years old, and there are some home movies of me from when I'm about five. And I have this little New York accent, but then, we moved to Minnesota, and it started to fade as I wanted to sound more like the other kids my age.

ZOSIA:

But sometimes, if you learn a language later in life, it's harder for you to shed the sounds you grew up with. So you may still have an accent.

MOLLY BLOOM:

So, Zosia, can you roll your R's?

- Yeah, I can, actually, because I know both Polish and French pretty well. I can speak them, read them, understand them. And rolling your R's is like a key element of both of those languages. So if I say this little phrase in Polish, [NON-ENGLISH SPEECH]

MOLLY BLOOM:

Amazing. What does that phrase mean?

ZOSIA:

Me and Barbara are going on our bikes in Wroclaw, which is a Polish city.

MOLLY BLOOM:

Very nice. Yeah, so, I learned Spanish when I was in school, and it was hard for me to roll my R's. I did not grow up with that sound. And I can, kind of, do it now, but I will never sound like someone who grew up speaking Spanish or Polish like you.

ZOSIA:

The cool thing about accents is that they're full of history.

MOLLY BLOOM:

Right, the accents we have today took generations to develop, and changed over time as different groups of people moved around, and learned how to pronounce things from each other.

ZOSIA:

So, in a way, your accent tells a story of you. Who your ancestors are, or the places they lived, and where they moved.

MOLLY BLOOM:

Plus, the story of where you grew up, which groups of people lived there, and how their language is combined to influence the way you speak today. We have a special guest here to answer some of our questions about accents, his name is Erik Singer. He works with actors who need to change their accent for a role in a play, TV series, or movie. Welcome, Erik.

ERIK SINGER:

Hi.

ZOSIA:

So, how do you help people learn to do different accents?

ERIK SINGER: Well, the first thing we do is we always want to start with a model. We never want to, kind of, go, this is accent X because there's no such thing. You know accents are ultimately, we can draw big circles around groups of people. But ultimately, they are really individual thing.

And they're so tied to identity and every aspect of our felt identity and group belonging. I'm breaking it down into the various elements. So we have all the individual specific sounds.

But we also have kind of the shapes that the mouth and the jaw and the tongue and the lips make. And then the music, the musicality the intonation, the rise and fall of pitch, and sort of stress and rhythm and things because that's also a really integral part of an accent. And then, we practice and practice and practice and practice and practice.

ZOSIA: OK, so can you help us learn each other's accents? And what's a good sample sentence to practice with?

ERIK SINGER: Well, this is a fun one. I think going both directions is the following sort of little-- sort of little ditty little saying, right? So I'm going to say it first in an American accent. So I guess, Zosia, let's start with you, and we'll do it piece by piece. All I want.

ZOSIA: All I want.

ERIK SINGER: Good. So we're going to go "ah" for want. All I want.

ZOSIA: All I want.

ERIK SINGER: Much better. Is a proper cup of coffee.

ZOSIA: Is a proper cup of coffee.

ERIK SINGER: That was excellent.

MOLLY BLOOM: Wow.

ERIK SINGER: Great.

MOLLY BLOOM: Very good.

ERIK SINGER: Molly, you want to give that a go? Then you go, all I want.

MOLLY BLOOM: All I want.

ERIK SINGER: Very nice. Is a proper cup of coffee.

MOLLY BLOOM: Is a proper cup of coffee.

ERIK SINGER: You guys are geniuses. This is great. All right. We're going to go on from there then.

So, all I want is a proper cup of coffee made from a proper cup of coffee pot. So Molly will keep going with you for now. So, made from a proper copper coffee pot.

MOLLY BLOOM:

Made from a proper copper coffee pot.

ERIK SINGER:

You're doing really well getting those R's out there and getting that sort of slightly that, Oh, vowel sound, which is featured heavily in this little saying. So let's go back to Zosia.

So, now, of course, that same sound that, oh, sound in all those words. In American English, it's just, "R," right? It's a very simple plain open "R" sound. So made from a proper copper coffee pot.

ZOSIA:

Made from a proper copper coffee pot.

ERIK SINGER:

Pretty good. We're going to try it one more time, Zosia. And so, this time, coffee is a little bit lip rounded, whereas proper and copper and pot, they're all just, "R" sounds. So let's see if we can make that difference proper copper coffee pot.

ZOSIA:

Proper copper coffee pot.

ERIK SINGER:

That was really good.

MOLLY BLOOM:

Do you have a favorite accent to help people learn or to do yourself?

ERIK SINGER:

I really love Northern Irish accents. I really love-- I really love Swedish accents because that's my mom and some of my childhood.

MOLLY BLOOM:

Could you give an example of a Swedish accent?

ERIK SINGER:

So Swedish accents, I mean, obviously, individual, so one of the things we need to know is the Swede that we're talking about is their main model for their English. Is it American English? Or is it British English? Because these are going to be different things.

But there are certain things that are always going to be the case, which is that, for example, you really can't do "Z" sounds because it doesn't exist in Swedish. So this and that and those, it's always an "S."

MOLLY BLOOM:

And Eric, I was wondering to you, you talked a little bit earlier about the musical intonations. Are there other, sort of, musical cities that you've noticed in different accents that you'd like to highlight?

ERIK SINGER:

Somebody who is speaking English as a second language, let's say Russian as their first language. But there's just a little bit of something that you can tell that it's not quite actually a native speaker. So I'm actually going to try to lighten up some of these vowel sounds and things to get even more proficient with American English, but there's something about the intonation that you can hear that's it-- that's a little bit-- you might not even be able to tell exactly where it's coming from, but it's coming from Russian.

Because if I do stereotypical and we talk about squirrels, right? We've got da-da-da, da-da-da, that kind of music. But, yeah, it's about going up and going down, and it's about how we accent things. How we stress and highlight the important bits of what we're saying, so that people can latch on to them.

And there are a million different ways to do that. And each language and each accent has its own characteristics out of doing them.

MOLLY BLOOM: Thank you so much. Bye, Erik.

ERIK SINGER: Bye, bye

SPEAKER 3: Baba-ba-bye, ba-ba-ba-brains On.

MOLLY BLOOM: All right, Zosia, let's give our tongues a rest for a bit, and turn to our ears because it's time for the mystery sound.

SPEAKER 4: Shh. Mystery sound.

[MACHINE SOUND]

ZOSIA: It sounds like either a Hoover or a leaf blower. Very, very almost, certainly, I think it's like a Hoover.

MOLLY BLOOM: Hoover is what we would call a vacuum in the state.

ZOSIA: Vacuum, of course, yeah.

MOLLY BLOOM: Yeah, yeah. Definitely sounds like there's a motor happening. I don't know what this one is either. So I have no idea. Yes, some motor rise thing is happening. So Hoover or leaf blower.

ZOSIA: It also sounds like a coming out of something, like hotter.

MOLLY BLOOM: Interesting.

ZOSIA: But, I think, yeah, air comes out of Hoover or vacuum. So

MOLLY BLOOM: Very good. Well, we're going to hear it again, and get another chance to guess after the credits.

[MUSIC PLAYING]

We're working on an episode all about our super duper neato imaginations, and we want to hear from you. Have you ever had an imaginary friend? Tell us about them. So, Zosia, I'm wondering, have you ever had an imaginary friend?

ZOSIA: Yup. I had one when I was maybe four or five. His name was Ukee, he was a cartoon character. I got super angry when people sat on him in the bus, and I told some of my friends about him.

By the end of the year, they were all claiming he was their friend as well. All of my friends.

MOLLY BLOOM: Oh, man. Ukee, did you mind sharing Ukee with them?

ZOSIA: No.

MOLLY BLOOM: Was OK. What did Ukee look like?

ZOSIA: He looked like I don't really remember. I think he looked like one of the Teletubbies, but he wasn't a Teletubby. I really don't remember.

MOLLY BLOOM: But you remember Ukee, and that you did not want people to sit on him. Listeners, please record yourself telling us about your imaginary friend, and send it to us at brainson.org/contact. We'll play some of your answers on that episode.

ZOSIA: And while you're set, you can always send us your mystery sounds, drawings, and questions.

MOLLY BLOOM: Like this one.

MARGOT: My name is Margot, my question is, do your eyes close all the way, every time you blink?

ZOSIA: You can find an answer to that on the moment of our podcast.

MOLLY BLOOM: It's a dose of fabulous facts every weekday. Just search for a moment of amp, wherever you listen to brain on.

ZOSIA: And keep listening. You're listening to *Brains On* from APM studios. I'm Zosia.

MOLLY BLOOM: And I'm Molly. So this is something I've always wondered, and I both speak English, Zosia. And the reason I speak English is that British people colonize this land hundreds of years ago. So, why don't I have a British accent like yours?

ROSIE DUPONT: I can help answer that.

ZOSIA: It's Producer Rosie DuPont. Hi, Rosie. Hi, Zosia. Hi, Molly.

ROSIE DUPONT: So, I think accents are a bit like the vegetable soups my grandmother used to make. Whenever I'd go over to her house for lunch, she'd be whipping up a new one, and even though she claimed they were all the same, she'd always throw in different types and amounts of veggies. So every soup was totally unique.

Just like my grandma's veggie soup, we tend to lump British accents into one big group. But really, there are around 40 different accents in the UK. And every individual in the UK has their own special unique accent because there are so many different ingredients in each one.

MOLLY BLOOM: So each British accent has a slightly different recipe?

ROSIE DUPONT:

Exactly. So in order to answer the question, why don't Americans sound like British people? We have to talk about British and American accents in general.

For the sake of simplicity, I'm going to be talking about the most well-known British accent, which is called RP or received pronunciation. And the typical American accent, which is called GA or general American. And I actually got Erik to record some examples for us.

ERIK SINGER:

So here's an example of RP or Received Pronunciation, it's what you might hear on a News Channel like the BBC, especially, something like BBC 4. And here's GA accent or a general American accent, which is often incorrectly thought of as being no accent at all. That's not a thing.

ROSIE DUPONT:

Now, the biggest difference between those two accents is whether or not you can hear the "R" sound. Let's hear those R's in action.

ERIK SINGER:

Star. Star. Clear. Clear.

ROSIE DUPONT:

Can you hear the difference, Zosia?

ZOSIA:

I can. Very clearly.

ROSIE DUPONT:

There is a special word for pronouncing the "R" sound. It's called rhotic pronunciation. Rhotic.

ZOSIA:

Rho-tick

ROSIE DUPONT:

Rhotick

MOLLY BLOOM:

Rhotick.

ROSIE DUPONT:

Exactly. In general, Americans pronounce their R's so they have robotic accents, and British accents are mostly non rhotic. Meaning, they don't say all of their R's. Let's hear it one more time.

ERIK SINGER:

Father, father. Pok, pork.

ROSIE DUPONT:

Very different, right? So here's the strange thing. A few years ago, British people pronounced their R's much like Americans do today.

To understand what happened, we have to go back in time to 1607 before the US was even a country. When a bunch of Englishmen sailed across the Atlantic Ocean and landed in what is now Virginia.

[WAVE SOUND]

[WOOD CREAKS]

These British colonists settled on land already inhabited by Powhatan people and built a settlement called Jamestown.

[MUSIC PLAYING]

Over the next 175 years, as more and more British people came over the Atlantic to North America, they brought their rhotic accents with them. So most early American English speakers said all of their R's. Then, in the late 1700s, there was a big war called the American Revolution, where colonists living in North America fought for independence and kicked the British government out.

SPEAKER 5:

Give me liberty, or give me death. But, preferably liberty, because I like being alive.

MOLLY BLOOM:

So British people were still pronouncing their R's then, like, Americans do now?

ROSIE DUPONT:

Well, around this time, back in London, another British accent, one that drops the R sound in the middle and at the ends of words was becoming popular. London was the center of culture and influence. And so over the next 150 years, this non-rhotic, no R accent spread throughout the British empire.

ZOSIA:

But this trend never really reached America, so most Americans just kept saying their R's.

ROSIE DUPONT:

For the most part, yes. But there are a few exceptions. Like that veggie soup I was talking about, there are a ton of different accents in America too, even non-rhotic. No R ones.

In Boston, for example, a lot of folks drop their R's like this,

ERIK SINGER:

Hey, pack your car, and have it yet.

ROSIE DUPONT:

The English spoken in the Boston area was influenced by Algonquin Indians, Quakers, and Puritans. But no one knows exactly why it became a Bostonian thing to drop the "R" sound. Some people think it's because a lot of British folks with non-rhotic accents were spending time in Boston during the 19th and 20th centuries.

But accents are influenced by so many things, it's hard to say. And that's the story for most accents in the US. Immigrants from lots of other countries bring their own accents with them.

So what we think of the American accent is always changing.

ZOSIA:

Cool.

MOLLY BLOOM:

Thanks for that bit of history, Rosie.

ROSIE DUPONT:

Any time. Catch you later.

SPEAKER 3:

Brains, brains, *Brains On*.

MOLLY BLOOM: When we started researching this episode, we noticed something strange. We were looking for information on all of the unique accents that exist among English speakers and how those accents developed and changed over time. Instead, though, a lot of what we found was pages advertising fix your accent, or get rid of your accent.

ZOSIA: But why would someone want to change their accent? Everyone has one.

MOLLY BLOOM: Some are based on where you live. Others might also be unique to your racial or ethnic group.

ZOSIA: How someone speaks can be a very important part of their identity.

MOLLY BLOOM: But just like other aspects of identity, sometimes people believe untrue and unfair things about people based on accents.

ZOSIA: To learn more about this, we talked to Nicole Holiday.

MOLLY BLOOM: Nicole is a professor at Pomona College, and she's interested in sociolinguistics. Socio, means the study of society, and linguistics means the study of language.

NICOLE HOLLIDAY: So, basically, I'm very interested in questions about how people hear other people and then make social judgments about them.

MOLLY BLOOM: Nicole explained that sometimes when people point out that someone has an accent, they're just sort of noticing it.

ZOSIA: Like you say, to-may-to, and I say, to-mah-to.

MOLLY BLOOM: Exactly. But other times, it's more negative, like a complaint.

NICOLE HOLLIDAY: Because what they're saying is this person is different from me, and I'm not necessarily comfortable with that. And this isn't fair, right? It's a prejudice.

MOLLY BLOOM: A prejudice is a judgment someone makes about another person without getting to know them first. Like, deciding you don't like someone because of how they look or what they believe.

ZOSIA: And research has found people are prejudiced against certain types of accents.

MOLLY BLOOM: Yup. For example, researchers at the University of Chicago found that when a person with a noticeable foreign or regional accent, said a true, but sort of surprising statement.

ZOSIA: Like, did you know that giraffes can actually last longer without drinking water than camels can?

MOLLY BLOOM: Listeners were less likely to believe them. But if someone with a more common American accent said the same thing, they'd be quicker to think they were telling the truth.

ZOSIA: It's not fair. And most people don't want to think this way. But it usually happens without us realizing that we're doing it.

MOLLY BLOOM: And it can still cause major problems for people. An African-American researcher named John Baugh designed an experiment to study whether people treated you differently depending on your accent. In the experiment, he responded to newspaper advertisements for apartments.

He would call each phone number three times, and he always said the same thing. But he used three different accents. Here's John Baugh, demonstrating the African-American accent he used.

[PHONE RINGING]

JOHN BAUGH: Hello, I'm calling about the apartment you have advertised in the paper.

MOLLY BLOOM: And the so-called Standard English Accent.

[PHONE RINGING]

JOHN BAUGH: Hello, I'm calling about the apartment you have advertised in the paper.

MOLLY BLOOM: And finally, the Latino accent he used.

[PHONE RINGING]

JOHN BAUGH: Hello, I'm calling about the apartment you have advertised in the paper.

MOLLY BLOOM: When he spoke with an African-American or Latino accent, he was usually told the apartment was no longer available. But when he telephoned using what he calls professional standard English, he was often invited to tour the apartments. This is just one example of how a prejudice against an accent can affect a person's life.

ZOSIA: Right. And that's why some people with certain accents might want to change how they talk.

MOLLY BLOOM: Here's Nicole again.

NICOLE HOLLIDAY: Because the accents that we would say are stigmatized are, sort of, looked down upon, are ones that are frequently attached to people that have less kind of social power.

ZOSIA: But Nicole says people shouldn't have to change how they talk because of this. Instead, we should change how we listen.

MOLLY BLOOM: Right. Listeners should be careful not to make assumptions or judgments based on how someone talks. Instead of speakers having to change the way they talk.

NICOLE HOLLIDAY:

The burden to change should not be on the person doing the talking, it should be on the person doing the listening. Because in fact, humans are really good at adapting to other people's voices when we want to. So instead of stigmatizing or being prejudiced against some varieties or accents, really, we should, sort of, celebrate that this is part of the human experience.

Language always has this variation built in. And it's useful for us to know who people are and part of what their life story is.

MOLLY BLOOM:

So next time you hear someone who might have a different accent than you, just think about how you're really being told a story.

ZOSIA:

A story about that person's life. But also about their ancestors, and about how people have moved around the world for thousands of years.

MOLLY BLOOM:

Thousands of years of history in each word.

ZOSIA:

That's pretty amazing.

[MUSIC PLAYING]

MOLLY BLOOM:

Most languages have many different accents or different ways of pronouncing the same words.

ZOSIA:

The accent you have is based on a couple of different factors.

MOLLY BLOOM:

One is that we want to fit in with the people around us.

ZOSIA:

Every accent tells the story of how groups of people have moved around the globe.

MOLLY BLOOM:

Like, why Americans and British people sound different than each other?

ZOSIA:

Some people have prejudices against us in accents. So sometimes people try to get rid of their accents.

MOLLY BLOOM:

But your accent is beautiful and tells the story of you. So that's it for this episode of *Brains On*.

ZOSIA:

This episode was produced by Molly Bloom, Rosie DuPont, Anna Goldfield, Ruby Guthrie, Mark Sanchez, and Nico Gonzalez Wisler.

MOLLY BLOOM:

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ZOSIA:

Brains On is a nonprofit Public Radio program.

MOLLY BLOOM:

If you'd like the show there are lots of ways you can support us, like buy our books.

ZOSIA: Donate to the show.

MOLLY BLOOM: Tell your friends about us.

ZOSIA: Or send in your drawings.

MOLLY BLOOM: Brain's on is the place. OK, Zosia, now back to that mystery sound. You ready?

ZOSIA: Yup.

[MACHINE SOUND]

MOLLY BLOOM: What are your new thoughts?

ZOSIA: I actually don't have any thoughts. I still think it's a vacuum or a Hoover, as I would say. Or a leaf blower. I'm going to go with the one I think is most likely, which is a Hoover stroke vacuum.

MOLLY BLOOM: OK, I have no better guess than that. I agree. Sounds like air moving with a motor. All right. You ready to hear answer is?

ZOSIA: Yep, I think.

MOLLY BLOOM: All right. Here it is.

EVELYN: Hi, *Brains On*. I'm Evelyn and that was the sound of a paper shredder, shredding paper.

MOLLY BLOOM: Oh, a paper shredder. Have you seen one of those before?

ZOSIA: I have seen one. I've never heard one. I have seen a hoover stroke vacuum, and I have heard a hoover stroke vacuum.

[LAUGHS]

MOLLY BLOOM: Yes, because you can only imagine what you've heard before.

ZOSIA: Yup.

MOLLY BLOOM: So you've never heard of paper shredder. Yeah, I have heard one, and I still found that very hard to guess. That was a tricky one. Yes, I guess the motor was shredding the paper. So sucking in paper, rather than air.

ZOSIA: Yeah.

MOLLY BLOOM: That was a tricky one.

[PAPER SHREDDER SOUND]

Now, it's time for the brain's honor roll. These are the incredible kids who send us their questions, ideas, mysteries, sounds, drawings, and high fives. Summer and Lori from Vacaville, California. Averie from Wyckoff, New Jersey. Arthur from Clifton Springs, New York.

Sebastian and Noah from Cookeville, Tennessee. Ryker from Regina, Saskatchewan. Nathan from Evanston, Illinois. Holly from San Jose, California. Kameron from Daly City, California.

Jacob from Marlborough, Massachusetts. Wilbur from Regina, Saskatchewan. Zoe from Santa Cruz, California. Nate, Maya, and Sylvia from New Jersey. Lily from California.

Faye from Toronto. Maple from Taiwan. Tabitha from Birmingham, Alabama. Elise from Salt Lake City. Ebbie from Houston Quinn, and Cora from New Prague, Minnesota.

Teague from Kennewick, Washington. Owen and Charlie from Potomac, Maryland. Adeline from Oak Park, Illinois. Leo from Seattle. Sean from Los Angeles.

Maya from Tel Aviv, Israel. Kaavia from Brampton, Ontario. Averie from Wendell, North Carolina. Dan and Barrett from Redding, Connecticut. Cindy from Encino, California.

Charlotte, Natalie, and Genevieve from Lawrence, Kansas. Partha and Sadhana from Austin, Texas. Vera and Raya from Vienna, Virginia. Ivy from San Jose, California. Jackson from Clarksville, Tennessee.

Liana from Macau. Matthew from Dubai. Owen from Braidwood, Australia. David from Comer, Indiana. Ashland from Watertown, New York. Crystal from Powell, Tennessee.

Exley from Los Angeles. Camden from Front Royal, Virginia. Molly from Haslett, Texas. Devin, Carson, and Jacob from Alberta. Josa from Carbondale, California.

Adam from Sammamish, Washington. Claire from Mundelein, Illinois. Lydia from Edinburgh, Scotland. Grayson from Severn, Maryland. Zoe from Canada.

Willow from Kempton, Pennsylvania. Marcel from New Orleans. Liam and Julian from Louisville, Kentucky. Alden from Washington DC. Ada from Spokane, Washington. Walden from San Francisco.

Isla Rose from Cranford, New Jersey. Thea from Brooklyn, New York. Holden from Prescott, Arizona. Emma from San Francisco. Zachary from Kirkland, Washington.

Claire from Doha, Qatar. Andrew and Sadie from Spotsylvania, Virginia. Ebbie from Asheville, North Carolina. Sperry and Spencer from Washington, DC. Soleil Rosalie from Petaluma, California.

Christopher from Ashburn, Virginia. Peregrine from Woodinville, Washington. And Jubal and Billy from Olive Hill, Kentucky.

[MUSIC PLAYING] *Brains On.*

Will be back next week with more answers to your questions.

ZOSIA:

Thanks for listening.