

SEAN RAMESWARAM: **It's Today Explained, but a very specific *kind* of Today, Explained: Today Explained to Kids.**

**If you were with us two years ago, you might have gone on a journey to the Island of Explained: a place where all the answers in the world come from. No big deal.**

**This summer, we have a whole new season of *Today Explained to Kids*, and you'll be hearing episodes in this feed on the weekends, which is weird because I don't usually work on weekends, but you can hear all of our episodes AND find related activities at [vox.com/today-explained-to-kids](http://vox.com/today-explained-to-kids). That's like T-O.**

**I'm going to do it again because it's long. That's [vox.com/today-explained-to-kids](http://vox.com/today-explained-to-kids).**

**This summer's season is all about making the world a better place. And today, we're taking a trip back to the Island of Explained to figure out how we can make the earth a better place for ALL creatures. Even bugs!**

[PRE ROLL]  
[KIDS THEME]

[Noir Music Plays]

SEAN: It's a cold, dark night in a city wrapped in secrets. But one small apartment on the 13th floor of a dark gray building is still lit by a single dim bulb.

A sign on the door reads: Today Explained To Kids

A smaller sign under that reads: Izii, Podcast Producer and Private Eye.

And under that, an even smaller sign: This is an episode for kids. Parents listen at YOUR own risk.

Inside the apartment, Izii, Podcast Producer and Private Eye, sits in a swivel chair, thinking. There are footsteps on the stairs. And then...

[knocking]

SEAN: A knock at the door.

[Door open]

SARA: He-Hello?

IZII: Hey there.

SARA: I need a detective.

IZII: Well, you've come to the right place. Pull up a chair– I didn't catch your name?

[chair scraping, sitting sounds]

SARA: Sara, I'm Sara.

IZII: Nice to meet you Sara. I'm Izii. Now... how can I help you today?

Sara: My friend Luz is missing.

IZII: Okay, can you describe this Luz?

SARA: Sure, of course. She's about one inch tall. She has six legs. And sometimes, her butt will light up bright green.

IZII: Got it. I'm not sure why I think this... but my detective instincts are telling me that Luz *might* not be a human?

SARA: Wow, you're good! No, Luz is a firefly.

IZII: I *knew* it. Alright, so tell me more about what Luz is like.

SARA: Well. Luz is... well, she's kind of a flashy personality. She's an artist, actually. She'll flash her lights in special patterns and codes. This one time I remember, she and all her firefly friends put on a light show in this forest in Tennessee. They lit up all together, so the whole forest looked like it was one big firefly flashing in the night. It was so beautiful.

IZII: One... big... firefly... in... the... night. Got it. So... when did you notice your friend Luz was missing?

SARA: Well... it's been a gradual thing. She doesn't have a phone or anything, so it's not like I can just text her and meet up. But... I've just been seeing less and less of her. And less and less of her friends, too. And I suddenly realized the other day that it's been *forever* since I've seen Luz. And that really worried me.

IZII: Very, very mysterious.

SARA: Do you think you can help?

IZII: Well, this is a really unusual case. Most of the people I track down are... people. Not fireflies. But we do have *one* option... if you're willing to go on a bit of an adventure?

SARA: I'm up for anything! I just want to find my friend.

IZII: Alright. Then because I don't know much about bugs, let's go to the one place I can always find answers. The place I go for my weirdest, most wonderful cases. The Island of Explained.

SARA: Wow! An Island! Okay! Should I book plane tickets? Or boat tickets?

IZII: Nah, the Island of Explained is a special kind of island. And there's actually a portal right here— in my closet.

[mux in ... we're going to the island]

### **ISLAND OF EXPLAINED**

[Sound of breeze blowing through reeds, lake waves lapping]

SARA: Wow, it's gorgeous here! Look at that lake... Is that a boat?

IZII: It is a boat. Hop in!

SARA: Uh, I've never seen Luz on a lake before.

IZII: Oh, that's not why we're here. Alright, put this on.

SARA: A diving suit?

IZII: Yep. This is Deep Dive Lake. It lets you dive deep on any subject. I figured the best way to start looking for Luz is to learn more about fireflies in *general* so we know where to look.

SARA: Sounds good to me! Let's jump in!

IZII: Wait— One thing to know about Deep Dive Lake. if you go too deep... you risk drowning in information.

SARA: Okay. That's a *little* scary.

IZII: Eh. We'll be fine. Probably. Now... think long and hard about what you're trying to learn more about. And then, on the count of three, we'll jump.

3.

SARA: *Fireflies.*

IZII: 2

SARA: *Fireflies.*

IZII: JUMP! [they both jump in]

SARA: Oooh... it's all blue green down here!

IZII: Look... here comes a factopus!

JESSICA: So fireflies are beetles.

IZII: Down here, all the animals down here will tell you information about the subject you're looking into!

JESSICA: Um, and as beetles, that means that they have a kind of a neat life cycle where they have a juvenile state and just kind of looks like a caterpillar, but it's not a caterpillar, it's the larva. Uh, and then it goes into a pupal stage, uh, kind of a Chrysalis, what you might imagine for a butterfly, but it looks a little bit different.

SARA: Okay... So firefly babies have a larval stage. That's cool but I don't need to know about firefly babies. I need to know where Luz is.

IZII: Well— all information is useful. But also— we can go a little deeper. Let's go see what that Truelapia over there has to say.

TRUELAPIA: Firefly babies eat slugs and caterpillars. But adult fireflies usually eat nectar, pollen... or other fireflies.

SARA: Okay. Still not that useful. I'll go further. Is that truelapia following us?

TRUELAPIA: Fireflies tend to live in forests, or humid places, with lots of plants and streams. But right now... some firefly homes— their habitats— they are being destroyed.

SARA: Wait— firefly habitats are being destroyed? Does that mean we're destroying Luz's home? Hey, come back here, Truelapia!

IZII: Careful, Sara! We're getting pretty deep now.

SARA: There's that Factopus again. Factopus! What's going on with the firefly habitats?

Jessica: Well, unfortunately for a lot of fireflies, they're losing their habitat. Um, they like to be out at night, um, and they do a lot of flashes using their body to make light. Um, and they flash to communicate and send signals to each other, but we make the dark

kind of disappear when we put lights on in our backyards and have a lot of light pollution. So they're facing a lot of threats just from being able to communicate with each other. Um, and then also we use a lot of chemicals that make it hard for them to survive.

SARA: Chemicals?

IZII: Sara! You're REALLY DEEP right now!

TRUELAPIA: Chemicals like pesticides, for example! Those are really bad for fireflies. And it's not *just* fireflies.

SARA: Not *just* fireflies? Wait *up*.

FACTOPUS: each of the species that might be in a community, they're all interacting with each other.

SARA: So if it's bad for the fireflies, it's bad for everyone? Or if the fireflies are gone, everyone else suffers too?

TRUELAPIA: Like I said, it's not JUST fireflies. Lots of bugs are struggling to cope with these things. And as they disappear, their communities are in danger of falling out of balance.

IZII: SARA, you're in too deep! I'm pulling the plug. Come on, let's get to the surface.

[Swimming up, surfacing]

IZII: Are you okay?

SARA: I don't know. That was a lot to take in. Why is it so dark out?

IZII: The sun must have set while we were down there. Come on, let's get to the shore. [padding] Phew. Okay. All good?

SARA: No, I'm not all good! [big sigh]. I'm all wet. It's getting dark and a little cold. And I thought we were just looking for my one missing friend, or maybe just looking for a few missing fireflies. But it sounds like there's a much bigger problem here... maybe with all bugs disappearing. *And* we're no closer to finding Luz *anyway*.

IZII: Well, that's not totally true! Sometimes, deep dives can be really overwhelming. There's a lot of information, and it can be pretty sad. But let's take a second to go over what we learned.

SARA: Okay. We heard a bunch of random facts about fireflies, and then some sad news about destroying their homes, and then some *bad* news about bugs in general.

IZII: Alright hold up. Think carefully about those *random* facts. Do you remember what the Truelapia said about where fireflies *live*?

SARA: Humid... woods? Wait, are there any humid woods near here?

IZII: There *are*! They're called the Knock On Woods. And they're actually really close by!

SARA: Do you think if we go to the woods, maybe we might find some fireflies who would know where Luz is?

IZII: That's *exactly* what I think!

SARA: Okay! Where are these woods!

IZII: Well, if we walk just over here... [footsteps] and then around this rock... See those trees?

SARA: Wait– look at that! That green light blinking!

IZII: Huh. That's funny.

SARA: That's Luz! I *know* it is! That's exactly the pattern of lights she would blink when she came to see me!

[running] Luz!!! Luz!!!

LUZ: SARA????? What are you doing here!

[MUX POST]

SEAN: And so, as often happens in this line of work, solving one mystery leads to the discovery of a new one, possibly an even darker one, an even grittier one than where we began. How deep does it all go? We'll find out in a minute.

[MIDROLL]  
[BUMPER]

SEAN: We're back with Today Explained To Kids. Let's continue with the case of the missing bugs.

[FADE TO BLACK]

SARA: Luz! I can't believe I found you! I've been looking for you with my friend Izii here.

IZII: [ahem] Actually, I'm a private eye, not just a friend.

SARA: Luz, where have you *been!*

LUZ: I've been here! With most of my firefly friends and a lot of other bugs too. Things at home are pretty bad. Our homes are disappearing. So we're trying to figure out how to save ourselves.

SARA: Yeah. I heard that fireflies– and all bugs– were in trouble! But... how can you figure out how to save yourself *here?*

LUZ: Well, the Island of Explained is where you go to find answers. And we picked the Knock on Woods specifically, because it's not JUST a great place for us to live. It's also a great place to run experiments.

SARA: How do you run experiments in the woods?

LUZ: Well the Knock on Woods are special woods. Do you know what cause and effect means?

SARA: Mmm. I'm not sure I do.

LUZ: Let's say you do something... like you knock on a tree. That's a cause... and it has an effect– it makes a sound. But in the Knock on Woods... the effects of your actions are made WAY bigger. And they happen immediately. So people use the woods to experiment. They say "If I do this... what would happen?" Like watch what happens when I turn on these floodlights...

[switch flips]

SARA: Woah! Woah. It's bright in here!

LUZ: Yeah, and what else do you notice?

SARA: Hmmm...

IZII: I can't see your light anymore.

LUZ: Exactly! When there's lots of light around, firefly lights get drowned out.

SARA: Oh! Oh woah!

Izii: What is it?

SARA: Oh, a slug! I think it fell on me?

Izii: A slug fell on you? Does that happen?

[The woods makes a BUNCH of squelchy, squishy sounds]

SARA: Uh... is that normal?

LUZ: Take a look at the woods!

SARA: EWWWW.

IZII: Those are all *slugs*?

SARA: The *whole woods* is covered in them. What's going on?

LUZ: [laughing] Well, too much light makes it hard for fireflies to communicate, right? So we *might* be seeing what happens if they all leave an area that has too much light.

SARA: Oh! Because baby fireflies eat slugs... so if you have no baby fireflies... you'll end up with more slugs!

LUZ: Exactly.

IZII: But what if slugs just love light? And THAT'S why they're here – and it's not related to fireflies at all.

LUZ: Good question! There's always some uncertainty when you're experimenting on something as complicated as an ecosystem. We'd have to do some more experiments to confirm there are more slugs *because* fireflies are going away, but they definitely seem related. Want to see something else?

SARA: Yeah!

LUZ: Okay, watch what happens when I get rid of **all** the other bugs! Here...turn off that floodlight... I'm going to fly up and flash the signal so they all leave the woods. [wingbeats, flashing.]

IZII: Ugh, *what* is that horrible, *horrible* smell.

SARA: I'm kind of afraid to even shine my light... but here goes... Oh *no*.

IZII: Is that...

SARA: I think it might be...

LUZ: Yeah, that's a HUGE pile of poop. Without bugs to break it down, you'd have a LOT of poop and rotting stuff lying around. We've also run this experiment in the daytime, and we noticed that... if all the bugs disappear, the birds in the woods disappear too, because they don't have any bugs to eat. And all the fruit on the trees and in the bushes— the strawberries and the blueberries— it all disappears, because bugs pollinate all those plants. Even chocolate might disappear.

SARA: Wait. NO BUGS MEANS NO CHOCOLATE???? THIS IS UNACCEPTABLE.

LUZ: I mean, no bugs also means no *me*.

SARA: Yeah, yeah, but also CHOCOLATE. This is *terrible*. I was just worried *you* were missing—and I was missing you as a friend. But now I'm realizing this is a MUCH bigger problem!

LUZ: Again, it feels like a pretty big problem regardless.

SARA: What do we *do*? To save the *CHOCOLATE*?

LUZ: Well... not ALL our experiments in the woods are scary. Like, come over to this stream here. One of the reasons bugs like me have been leaving the real world is because the waterways where we raise our young have been getting polluted with harsh chemicals.

SARA: Oh. Like the Truelapia said!

LUZ: Truelapia?

IZII: Dont worry about it. You were saying?

LUZ: Er, right. Well so we wanted to see what would happen if we filtered *out* those chemicals. Would that help bugs return? We've been filling this stream with all sorts of pollutants, but now let's see the effects of taking them away. This is an AQUA-CLEAN 3000. It's an Island invention that filters pollutants out of freshwater.

[machine hums to life]

SARA: Oh, look at all the lights! The fireflies are coming back.

IZII: And it looks like the slugs are thinning out a bit too.

LUZ: Interesting... so fireflies have come right back, and that does seem to have an impact on the slug population...

SARA: [pinching nose] Yeah but the poop is still around.

LUZ: Oh, sorry. We tend to leave that to the flies. Hang on. I'll call everyone back. [wings, lights, buzzing]

SARA: *That's* better. [deep inhale] Ahhh... so now we know all this stuff, are you gonna come back?

LUZ: I don't know. The more time I spend on The Island of Explained... the more I wonder why I would *want* to go back. People don't seem to want us around very much...

SARA: But I'll MISS your firefly shows in the forest!

LUZ: Those were pretty great, huh?

IZII: And SARA *did* have a point there about the chocolate.

LUZ: Note to self: lead with the chocolate...

SARA: I know! What if WE took the lessons you've learned and fixed the world. Would you come back then?

LUZ: You would do that?

SARA: I mean, of course! We're your FRIENDS, right Izii?

IZII: Well, technically I'm just closing a case—

SARA: WE'D LOVE TO HELP!

IZII: I guess we'd love to help.

LUZ: [sniffing] That's so sweet of you... [sniff] I didn't realize there were any humans left who cared about us bugs... I- [sniff] I- [fully sobbing] I'd love to come home! Thank you so much! You guys are the best friends ever!

SARA: [also crying] Aw, I love you too, Luz!

IZII: Now, hang on there, love bugs. It's one thing to fix the Knock On Woods. But there's a whole world out there. We can't just flip a switch and expect everything to get better just like that.

SARA: It does seem like a big task for just one or two people...

FACTOPUS: I think one person can make a big difference when it comes to insect decline.

SARA: FACTOPUS!

IZII: You can walk??

LUZ: Who's this?

IZII: We met her in the Deep Dive Lake.

SARA: Shh, she's still talking.

FACTOPUS: We can choose to turn off our lights in our backyards. We can choose not to put as many chemicals as we normally might put in our backyards or our garden. Um, and we can talk to our parents. We can talk to the principals of our schools. We can talk to the mayors in our towns to make decisions to kind of preserve that habitat where lots of insects can thrive.

SARA: Well, what do you think Luz?

LUZ: Those are all great ideas! You could start small with the lights and then work up to something big like talking to the mayor. But the Factopus is right, even one person can make a big difference!

Sara: Great! Let's get out of here, Izii. We've got a world to fix!

IZII: Sure, the exit's right over here. Would now be a good time to discuss my rate?

SARA: FOR THE FIREFLIES!!!

[MUX POST]

SEAN: That is it for Today Explained to Kids. If you liked that, be sure to stay tuned. There's going to be more coming next Saturday in this very feed. Until then, keep asking questions.

[END]  
[CREDITS]