Podcast Name: Imagine This

Episode Name: Does space go on forever?

Duration: 9’25”

[ABC Podcast sting - This is an ABC Podcast]

Bri: Hello, I'm Bri. And here on Imagine This, we like to answer some of the big questions. And this question from Conrad could just be the biggest one of all…

[Cinematic music]

Conrad: Does space go on forever?

Bri: Does space go on forever? What planet do you live on?

[Birds tweet]

Kids: Earth.

 Earth.

 Earth.

Bri: And where is Earth?

Kids: Space? Yeah.

 Space.

Bri: I wonder, if you looked high up into the sky and you kept going up and up and up, how far it would go?

Kids: Further than anything.

Bri: That sounds pretty far. Well lucky for us, Dr. Tanya Hill from the Melbourne Planetarium and Scienceworks is an astronomer and she's going to help us find out how far space goes. Hi, Tanya.

Tanya: Hello.

Bri: Tanya, how far does space go on for?

Tanya: Bri, why don't you come with me and I'll show you?

Bri: You mean you, me, now? Outer space?

Tanya: Yes.

Bri: Okay. Do you want to come with us too?

Kids: Yeah.

 Yeah.

 Yeah!

Bri: What should we bring?

Tanya: Bri, we're going to need a spacesuit.

Bri: Why do we need a spacesuit?

Tanya: Well, because you can't breathe in space. We have to take the air along with us.

Bri: Okay, spacesuit. Anything else we should take with us?

Kids: You need to pack all your food.

 We have our special bags on, and our lunch box with all our food in it.

Bri: Okay. Have you got everything?

Kids: Oh, I've got my space bag, ready.

Bri: Yep. Bring your space bag and let's go.

Kids: Let's go!

Bri: Let's go straight up. Oh wait, a countdown. We should do a countdown.

Kids: Okay.

Bri: Absolutely, yes. We'll count from 10, ready?

[Rocket engine blaring]

Bri: 10, nine, eight, seven, six, five, four, three, two, one, blastoff!

[Rocket blastoff]

Bri: Up we go, through the sky.

[Uplifting music]

Bri: What do we see?

Tanya: Blue sky.

Bri: What's that over there, Tanya?

Tanya: That's a cloud.

Kids: It's behind the cloud.

Bri: Oh we're going up, behind the clouds. It's getting a little bit darker up here.

Tanya: Soon the blue sky will disappear and it will be black.

Kids: Yeah, it stays dark there every time.

 I think space is dark. It's really dark and there's stars.

Bri: It is getting darker and I can see some stars. But Tanya, it doesn't feel like we're very far out of the sky.

Tanya: Space is about a hundred kilometres above earth. It's not too far at all.

Bri: We're already out in space?

Kids: I'm not on the ground anymore.

 That's magic.

Bri: It is magic. Oh, it's a bit floaty out here.

Kids: Because there's no gravity.

 And there's gravity on the earth, and that's why we can sit down.

Bri: If there's less gravity in space, is that why we just float away?

Tanya: Yes, definitely.

Bri: So which way should we float? Towards the sun or towards the moon?

Tanya: Let's go towards the moon. I think the sun's a bit too hot.

Bri: All right, let's go that way.

Kids: Yeah.

 Yeah!

[Object whooshing past]

Bri: Whoa, what was that? Did I just see a spanner go past my head?

Tanya: Maybe.

Bri: Hey, what's that little thing floating in space?

[Object whooshing past]

Tanya: That's some space junk. It's a flick of paint from a spacecraft.

[Magical sound effect]

Kids: Space junk.

Bri: Junk from a spacecraft?

Tanya: Yeah.

Bri: Hey, is that a spacecraft over there?

[Warm uplifting music]

Tanya: That's the International Space Station. For the last 17 years, different astronauts have worked up here.

Bri: Wow. Is there always someone up here?

Tanya: There is always someone there. They're even growing a garden inside the space station so that maybe one day they could grow their own food to eat.

Bri: They might be lonely out here. Let's give them a wave. Hello there! Hi.

Kids: I see an astronaut

 Hello.

Bri: Sorry we can't stay. We're going that way. What do you think we'll see next?

Kids: Planets.

 I think more there's more planets.

 Stars and the moon?

Bri: Yes, we'll go past the planets in our solar system. Hey, look, there's the moon. Hi moon!

Kids: Let's land on the moon!

Bri: We could land on the moon, but not today. We're going to keep going past the moon. See you later, moon.

Tanya: Goodbye, moon.

Kids: Bye-bye.

 Bye.

 Goodbye.

Bri: Ah, Tanya, we're are really long way away from earth. I've never been out this far before. Do you think maybe we could hold hands in space?

Tanya: Oh, for sure. Yes.

Bri: Here, take my hand. That's so much better. Do you want to hold our hand?

Kids: Yeah.

Bri: Okay. Hold on. Tight. Let's go.

Kids: Wow!

Bri: Ooh, what's that little thing?

[Mischievous music]

Tanya: That's a little rock space.

Kids: Space rocks!

Bri: Space rocks, asteroids. We must be in the asteroid belt.

Kids: Asteroids where rocket ships get broken.

Bri: Yeah. I heard that passing through the asteroid belt is a really dangerous, but there doesn't seem to be that many rocks out here.

Tanya: They're spread out all across the belt. There's lots of rocks out here, but there's also lots of space between them as well.

Bri: Shew. Wow. Look at all the stars out here.

[Uplifting music]

Tanya: They're everywhere. Keep looking, and you start to see more and more. There are billions and billions of stars and that's even within our own galaxy. We haven't got out of the Milky Way Galaxy yet.

Bri: We live in a galaxy full of stars?

Kids: Yeah.

 Yeah.

 Yeah. The galaxy.

Bri: Yes. We live in the Milky Way Galaxy. What's that little spot over there past our galaxy?

[Chime sound]

Tanya: It's another galaxy, way over there.

Bri: There are more galaxies out there like ours?

Tanya: There certainly are.

Bri: Well what's past that galaxy?

Tanya: Even more galaxies, no matter which direction we look.

[Chime sound]

Bri: So what's at the end of the universe?

Tanya: It keeps going on and on, maybe even forever. And there not even be an end to the universe.

Bri: We can't see the end?

Tanya: No, we actually can't because we can only see a certain part of the universe. We can't see the end.

Bri: What about a faster rocket ship or a bigger telescope to see the end?

Tanya: No matter how hard we look, we can't see everything.

Bri: But I want to know the end.

Tanya: The universe is so big. We just have to be okay that some things, we just may never know.

Bri: So it's bigger than we can even imagine. I guess we should turn around then.

Tanya: I want to go home now Bri, what about you?

Bri: Yeah, let's go back to earth.

Tanya: That's where home is.

Kids: Time to go home.

Bri: Okay. Let's float back down and let gravity…

[Birds tweeting]

Bri: put our feet on the ground.

[Chime sound]

[Building classical music]

Bri: Conrad, you have asked one of the biggest questions of them all, "Does space go on forever?" And the answer is, we think so, because we can't see the end of space. We can only see a little part, but what we can see is more and more galaxies, full of stars and planets and space rocks just like ours. Next time you're playing in the sand pit or at the beach, have a look at those little grains of sand and imagine that each one is a galaxy full of billions of stars. There are more galaxies in our universe than there are grains of sand on all the beaches and all the sand pits in the world. That's too many to count.

[Chime sound]

Bri: Imagine This is produced by me, Brianna Peterson, and is a co-production between ABC Kids Listen, and The Conversation. To hear more episodes of Imagine This, plus a range of music and stories for young children, download the ABC Kids Listen app.