Podcast: Imagine This

Episode: Why do stars twinkle?

Duration: 7’08

[ABC Podcast sting - This is an ABC Podcast]

[Crickets buzz, owl hoots]

Bri: Hello, I'm Bri, and today on Imagine This, we're talking about something that you can see in the night-time. If you look high up into the night sky, you might be able to see one. What do you think it could be? I'll give you a clue. It's something that twinkles.

Kids: A star.

Stars!

Star.

Stars, and they're twinkly.

Bri: You guessed it. We're talking about stars.Today's question is from three year old Max, and he wants to know something about stars.

Max: Why do stars twinkle?

Bri: Good question. Max wants to know why the stars twinkle. What do you think it could be?

[Curious xylophone music]

Kids: Because they get hit sometimes, and then they fall to the ground.

Because the brightness, and...

They are up there so when we go outside, we can see where we're going.

Because they're so pretty.

Some are made of erupting clouds.

Bri: Good ideas. Hmm. Let's look for some more clues. What does the twinkle look like?

Kids: Shiny.

They look like twinkles in the sky because they are twinkles.

Twinkle, twinkle, twinkle. Blink, blink, blink.

Bri: Yeah. Stars kind of look like they're blinking. Do you think they're winking at us? Maybe they're trying to tell us something.

Kids: No.

No.

Bri: Why not?

Kids: Because stars don't have mouths.

Bri: Oh yeah, stars can't talk. Hmm. Maybe we need another clue. I know someone who can help. My friend Jonty Horner is an astronomer at the University of Southern Queensland. Shall we ask him?

Kids: Yes.

Yes!

Yes.

Bri: Okay. Hey Jonty, come and say hello.

Jonty: Hello.

Bri: Jonty, you're an astronomer. So what does an astronomer do?

Jonty: Astronomers are like detectives. We sit there all day looking at clues, trying to work out what stars are like, what planets are like.

Bri: Ah, so you're looking for clues in the night sky, to find out about stars and outer space?

Jonty: Basically, yeah.

Bri: Then it sounds like you're the right person to help us. Jonty, Max wants to know why the stars twinkle. Do you have any ideas?

Jonty: A really big clue as to what causes that is that you see that the stars twinkle more when they're low down in the sky than when they're high up. And that's a clue that it's something to do with the atmosphere, with the air around us.

Bri: Hang on. Did you just say atmosphere?

Jonty: Yes!

Bri: Can you say that word again?

Jonty: Atmosphere.

Bri: Okay, Jonty. Break it down for us.

Jonty: At ...

Bri: At ...

Jonty: Mos ...

Bri: Mos ...

Jonty: Phere.

Bri: Phere.

Jonty: Yes. Atmosphere.

Bri: I like the sound of that word. Do you want to have a try?

Kids: At ...

At ...

Mos ...

Mos ...

Phere.

Phere.

Atmosphere.

Atmosphere.

Bri: So, what is the atmosphere?

[Wind blowing]

Jonty: It's this very thin layer of gas around the earth. It's the air that we breathe. It's everything around us.

Bri: So if the atmosphere is the air that's all around us, then all we have to do to breathe it in is go like this

[Bri inhales and exhales].

Yeah. You just breathed in the atmosphere, but how does it make the stars twinkle? Jonty, can you give us another clue?

[Jonty mimics the wind with his breath]

Bri: Hmm. That sounds like something I know. What does that sound like to you?

Kids: The wind!

Bri: Yes. Can you make sounds like the wind?

[Bree and kids mimic the wind through breath]

Bri: So this air and this wind in the atmosphere, it moves around.

Jonty: It bubbles and it whooshes and it blows around. So if you've ever been out on a windy day, that's one of the ways that the air moves.

Bri: How else does the air move?

[Mystical piano]

Jonty: It swooshes and whooshes. And it bubbles and it boils. You get bits of air that are rising, and other bits that are falling, and if they hit each other, they bounce off each other. They try and mix. They get all swirly-whirly and twirled up.

Kids: Whirly-twirly.

Twirly.

Twirly-twirly.

[Owl hoots]

Bri: It sounds kind of like a dance.

[Dramatic ballet music]

Kids: Yes!

Dancing.

Bri: Up in the sky.

Kids: Whoosh.

Whoosh.

Whoosh.

Bri: So, while the stars are shining their light to earth, how does the atmosphere and this dance in the sky make the stars twinkle?

Jonty: So, the air is bending the light. So the light that's coming to you from a distant star, once it hits the atmosphere, is being bent back and forwards, left and right.

Bri: So the air bends the starlight.

Jonty: That's right.

Bri: And that's what makes the stars twinkle. So, Max, the answer to your question is that it's the layers of the atmosphere, the air and the wind, that bends the light to make the stars twinkle. So now that you know what it is, what do you think of those stars out there?

Max: I like the twinkle.

Bri: I like the twinkle too, Max. Maybe one night this week, you and your family can go outside and have a look up into the night sky to see how many twinkly stars you can see.

[Music build to crescendo]

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