Bang!

Where do we come from?

Where do we live?

What do we know?

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Tutor: Sometimes I wonder.

*Student: What?*

Where do we come from?

*Where do we come from?*

Yes. Where do we come from?

*I suppose I do too, sometimes.*

Where did it all start?

*Where did all what start?*

Everything.

*Everything?*

Yes*.*  Everything.

*I don’t quite understand.*

How do you mean?

*I don’t quite get it.*

Pardon?

*I don’t quite get what you’re after.*

Umm …

*How could “everything” start?*

Oh. Well, nobody really understands that.

*Nobody?*

No. Not really.

*Nobody really knows?*

Nobody really seems to know.

*Oh.*

Not for sure, anyway.

*How do they think everything began?*

They think everything began at the same moment.

*Surely everything has always been there?*

Well, no. Apparently not.

*Apparently not?*

No. Apparently not.

*How do you mean?*

Well, to begin with there was nothing.

*Nothing?*

Apparently.

*Nothing at all?*

Nothing at all.

*How do you mean “nothing at all”?*

Well, that’s what they say.

*How can there be nothing?*

I don’t know.

*It doesn’t make sense.*

Well, no. Not to me anyway.

*Maybe it’s impossible to know.*

Not for sure, anyway.

*It was billions of years ago, after all.*

Yes. Maybe 14.

*14 billion years!*

So they say. 14 billion years, give or take.

*Give or take?*

Well, yes. I mean nobody seems very sure.

*It beats me.*

What does?

*It beats me how they know all this.*

Me too.

*But they do seem to.*

Well, they think they do. Sort of …

*Yes. Sort of …*

Anyway, back to the Big Bang.

*The Big Bang? What’s the Big Bang?*

That’s what they call the very beginning.

*The beginning of everything?*

That’s right.

*When everything began?*

From absolutely nothing.

*That’s the bit I think is crazy.*

The idea of nothing at all?

*Yes.*

I know what you mean.

*There can’t have been nothing at all.*

Well, that’s what they say, though.

*There must have been something.*

They say not.

*Mmmm…*

And time didn’t exist. There was no time.

*No time?* *It didn’t exist?*

No time and no stuff.

*No time and no stuff?*

There was just a great big nothing at all.

*Well, so they say, apparently.*

And there was no time.

*Do you understand any of this?*

Well, I can understand the words, sort of.

*Yes, sort of.*

But I can’t really understand the ideas.

*Me neither.*

I might be able to imagine no stuff.

*If I really tried.*

Yes. But I can’t imagine no time. Surely there’s always time?

*It doesn’t seem possible not to have time.*

But that’s what they say.

*So we have absolutely nothing at all.*

Absolutely diddly squat.

*Diddly squat?*

It’s American slang.

*Oh.*

Diddly squat means “nothing at all”.

*So, how did everything begin?*

Right from the beginning?

*Yes. From diddly squat. What happened next?*

The Big Bang.

*The Big Bang?*

That’s when everything began.

*What was the Big Bang?*

It was a sudden change in nothing.

*A change in nothing?*

Yes. They sometimes describe it as a sort of crack.

*A sort of crack in nothing?*

Yes. Kind of.

*This is all very difficult.*

Very!

*It’s like you were saying before.*

Oh?

*You said you understood the words, but not the ideas.*

So I did. And I meant it!

*That’s exactly how I feel.*

The words make sense.

*Sort of.*

But what do they mean?

*So the Big Bang was an explosion?*

They say not.

*Well, what was it?*

It was more like expansion.

*Expansion?*

Yes. Stuff appeared, suddenly.

*Stuff appeared out of diddly squat?*

And expanded.

*Expanded?*

In all directions. At very high speed.

*Weird!*

Absolutely weird!

*And time began at the Big Bang?*

Yes. It did.

*Whatever that means!*

Right!

*I don’t understand that at all.*

No.

*How can time begin?*

Search me!

*This Big Bang is difficult.*

Everything suddenly appearing.

*At the Big Bang.*

Out of nothing.

*And time beginning.*

Whatever that really means.

*And after a while, we had a universe.*

And time.

*I still don’t get that bit.*

Neither do I.

*But that’s what they say.*

It makes you wonder what time really is.

*I suppose it does.*

There was tremendous heat.

*Oh?*

Everything was tremendously hot. At the Big Bang.

*But it cooled down, over time.*

Yes. I suppose.

*Earth isn’t hot.*

No.

*Maybe it cooled down more in some places than others?*

I suppose.

*I mean stars are still very, very hot.*

So hot they give off light.

*That’s why we can see them. Because they give off light.*

Yes. We can only see the hot stars.

*Like the sun. Our sun is a star.*

Yes. Our sun is a good example.

*Most stars have planets going round them.*

Yes. They do.

*Earth is a planet.*

Yes.

*Going round the sun.*

And the sun is a star.

*Yes. Like any other star, apparently.*

And we can see loads of other stars like our sun.

*Loads of them.*

Loads.

*And there are loads of stars we can’t see.*

Apparently.

*So they say.*

They’re all millions and millions and millions of miles away.

*Yes. And that’s another thing.*

Another thing?

*Another thing I can’t get my head round.*

What?

*The distances.*

The distances?

*Yes. The distances in space.*

They are huge.

*Light years and all that.*

Well, yes. The distances are enormous.

*I can’t get my head round them.*

Me neither.

*They talk about “light years”.*

That’s how they measure distance in space.

*And they say the stars are many light years away.*

They all are.

*Yes.*

A light year is an enormous distance.

*It’s the distance light travels in a year.*

Which is too much for me to understand.

*I know what you mean.*

Light travels at about 12 million miles a minute, you know.

*12 million miles a minute!*

So I can’t even imagine a light year.

*Not if a light minute is 12 million miles!*

Goodness knows what a light year is, then.

*Billions of miles, I suppose.*

And all the stars we can see are thousands of light years away.

*Thousands and thousands.*

And that’s light years!

*So they’re all billions and billions of miles away.*

Thinking about all this makes me feel small.

*I know what you mean.*

Small and cold, somehow.

*Yes.*

And a little bit lonely.

*I know what you mean.*

There’s nobody near us, that’s for sure!

*Maybe there isn’t anybody out there at all.*

In space?

*Yes.*

Do you think there is?

*Anybody out in space?*

Yes.

*Any life on other planets?*

Is there life out there, do you think?

*I don’t know.*

There are loads of stars out there.

*Yes*.

Loads and loads of stars.

*Yes.*

Millions and millions of them.

*Millions and millions of them just in our galaxy!*

You mean the Milky Way?

*Yes. And there are many other galaxies.*

There are millions of other galaxies. Apparently.

*Probably.*

Millions of them.

*And millions of stars in each of those galaxies too.*

So there must be billions of stars in the universe.

*Yes. Billions and billions of them.*

And most of them probably have planets going round them.

*Planets like Earth.*

I suppose so.

*So there must be billions of planets like Earth.*

Billions of them.

*So there must be life on some of them.*

Do you think so?

*Well, there must be.*

If there are that many planets, I guess there must be life on some of them.

*If there are billions of planets, I suppose so.*

Some of them must have life on, surely.

*I suppose so.*

They must do.

*But why do we never hear from them?*

I don’t know.

*Why don’t we hear from them?*

I don’t know!

*Some of them must have invented radio and all that.*

I suppose they must have done by now.

*Maybe it’s because of the distances.*

You mean they’re too far away?

*Yes.*

Radio waves travel at the same sort of speed as light does.

*I think they travel at exactly the same speed.*

Do they?

*I think so.*

So if they sent a signal out, it would take years to get here.

*If a planet was a thousand light years away it would take a thousand years.*

And they all are.

*Pardon?*

All the stars.

All the stars what?

They’re all at least a thousand light years away.

*Oh. Yes, they are. Apparently.*

Thousands and thousands of light years…

*So if they sent a signal, we’d have to wait a while to hear it.*

Thousands and thousands of years.

*No point in holding our breath, then!*

No.

*I don’t suppose we will ever hear anything.*

From life in space?

*Yes. From life on other planets.*

No. I don’t suppose we will.

*Sad really.*

Yes.

*It would be interesting.*

Yes.

*There’s such a lot we don’t know.*

About space?

*Yes.*

I wonder if we will ever really know.

*About the Big Bang?*

About any of this stuff.

*Probably not.*

Not for sure, anyway.

*And it’s very weird.*

Very weird.

*I don’t understand most of it.*

Me neither.

*That stuff about time.*

Before the Big Bang?

*How could there be no time?*

I know what you mean. I don’t get it.

*It’s what they say, though.*

They do.

*Oh well.*

Fancy a cup of tea?

*Why not!*

We do have time, after all.

*Whatever that means!*

Mmmm…