

STUDY GUIDE Test 2

(AFRICAN AND MAYA History [Belizean Studies])

ORIGINS

The Most Astounding Fact

Neil deGrasse Tyson

The most astounding fact is the knowledge that the atoms that comprise life on Earth, the atoms that make up the human body, are traceable to the crucibles that cooked light elements into heavy elements in their core, under extreme temperatures and pressures.

These stars, the high mass ones among them, went unstable in their later years. They collapsed and then exploded, scattering their enriched guts across the galaxy... Guts made of carbon, nitrogen, oxygen, and all the fundamental ingredients of life itself.

These ingredients become part of gas clouds, that condense, collapse, form the next generation of solar systems, stars with orbiting planets, and those planets now have the ingredients for life itself.

So when I look up at the night sky... I know that, yes, we are part of this universe, we are in this universe, but perhaps more important than both of those facts... **is that the universe is in us.**

When I reflect on that fact, I look up... many people feel small cause they're small and the universe is big, but I feel big. Because my atoms came from those stars.

There's a level of connectivity.

BELIEFS

Zulu Creation Story:

Long ago, before man or any animals roamed the earth, there was just darkness and one very large seed. The seed sank into the earth and from it, long reeds began to grow. They were called "Uthlanga", which means the source of all things. Slowly, one reed grew into a man.

It was **Unkulunkulu**, First Man, and the creator of all things. The larger he grew the heavier he became. Finally, when he was fully-grown, he broke off from the reed and fell to earth.

As he strolled up and down the earth, he saw other growing reeds forming into men and women. Unkulunkulu broke off the first men and women; medicine men and their dreams. He pulled off cattle and fish and birds and fierce creatures.

He created streams and mountains, lakes and valleys, wind and rain and the sun and the moon. Unkulunkulu created everything we see around us today.

When all of this was done, Unkulunkulu sent the languid chameleon out into the world with the message that his people will never die. The **chameleon** plodded on his mission slowly, slowly, slowly. After several days, Unkulunkulu became impatient and sent a **speedy lizard** out into the world with the message that Death was on its way.

The Maya Creation Story of the Maya:

In the beginning there was no light, no land, no plants, no people, and no animals.

Two gods **Tepew and Quetzal Serpent**. These deities, helped Heart of Sky, also known as Hurakán, create the Earth. Their spirit essence and their miraculous power gave the Earth its creative energy. Now the land had a heart, and they called it Heart of Earth.

The plants were next created to live on the Earth. And then the animals were created. But the animals did not speak and could not worship. So the deities decided to create human beings from **Clay (mud)**. But these first humans had no souls and were not good "keepers of the days." They destroyed them in a great flood.

The deities tried another time, and created humans from **wood**. But the wooden people could not worship either, so they were destroyed. Those that survived are said to have become the monkeys in the trees.

The deities created the final form of human beings using white and yellow corn. **Corn** is the precious substance that ultimately succeeds in producing true, and enduring, humans.

BELIEFS (defined)

1. An acceptance that a statement is true or that something exists.
2. Trust, faith, or confidence in someone or something.

BIG BANG! Within a fraction of a second, the **Big Bang** creates all the energy that will ever exist. All the energy that will power the stars. That will fuel anything that ever lives. All the energy that you will ever consume dates back to the beginning of time.

Universe 300 million years after the Big Bang, inside a foaming galaxy, **gravity** continues to squeeze together cloud of gas and dust causing pressure and heat to violently rise. When the temperature reaches 18 million degrees Fahrenheit, **Hydrogen**-atoms slammed together creating a new element - **Helium** - and radiating burst of energy.

The first **stars** are born. Suddenly there were new beacons of light shining forth, pouring energy into the universe. The complicated elements... the heavier things that we built stuff out of, for example, iron or carbon, things like that, they are manufactured in stars. Stars are element factories. They fused Hydrogen into Helium, Helium into Lithium, forging 25 of the common elements we'll need to live including Carbon, Oxygen, Nitrogen and Iron.

First stars formed, some of them exploded. These explosions - known as **Supernovas** - are the biggest blasts in the universe since the Big Bang - providing the extra boost of energy needed to fuse heavier elements. Stars create uranium, gold, all the rest of the elements that will fill our world including copper.

EARTH 4.5 billion years ago, an object the size of Mars smashes into the planet at 25 thousand miles per hour. Earth swallows up much of the impact, but a spray of molten debris whipped off into space. Within as little as a year, gravity gathers this debris into a secondary sphere in orbit around the earth, where it has been ever since. The formation of the **moon** was an incredibly important event in earth's history. And in fact, in creation of over 4 billion years ago, it's really important to the earth's climate today.

The moon keeps earth steady; its gravitational pull prevents the planet from wobbling, saving us from wild climate swings, and the collision that formed the moon leaves earth tilted on its axis, giving the planet a key ingredient to life: **seasons**. Having seasons is very important for the evolution of life on the earth.

LIFE What distinguishes life from nonlife? Life is as hard to define as complexity or information, and there seems to be a murky border zone between life and nonlife. Most modern definitions of life on Earth would include the following five features:

1. Living organisms consist of **cells**
2. They have a **metabolism**
3. They can **adjust to changing environments**
4. They can **reproduce by using genetic information** to make almost exact copies of themselves.
5. But the **copies differ** in minute ways from the parents, so, over many generations, the features of living organisms slowly change as they evolve and adapt to changing environments.

