

Big Bang Theory

SCRIPT:

Make a little spot...the smallest spot you can make with your fingers...so small, it's invisible! Now, imagine this is where the entire Universe came from...the Earth, the Sun, the Moon, all the stars, all the galaxies. Everything came from nothing? Wait a minute! Who would believe that? Well, most scientists in the world today.

The theory was first proposed by a German scientist, George Lemaitre (Lay-met-tray), in 1927. It's called the "Big Bang Theory," and it's based on scientific evidence.

Measuring the motion of the galaxies, and the temperatures in outer space, scientific calculations show that, in the beginning, 15 billion years ago, there was nothing, not even space.

And then, suddenly, from a point smaller than the head of a pin, the Universe was born. From nothing, came everything, pouring out like a fire hose in one gigantic explosion called the "Big Bang."

But scientifically speaking, how could everything come from nothing? Well, this is where scientists invite everyone to sit at the same table, and wonder along with them.

They have no idea how everything could come from nothing. And that's why the "Big Bang Theory" is perhaps the most amazing idea in all of science: That in the beginning, the entire Universe arose from a single point...smaller than this.

Relevant NSES Standards

NSES Content Standard A: Understanding about scientific inquiry.

(Grades K-8) Types of scientific investigation; describing events.

(Grades 9-12) Scientists can be limited by available technology.

NSES Content Standard B: Physical science.

(Grades 9-12) Properties of matter (related to the origin of all matter).

NSES Content Standard D: Earth and space science.

(Grades 9-12) Origin of the universe.

NSES Content Standard E: Understanding about science and technology.

(Grades K-4) Science is a way of answering questions about the natural world.

(Grades 5-8) Science can be limited by available technology.

(Grades 9-12) Science can challenge people's beliefs.

NSES Content Standard F: Science in social perspectives.

(Grades K-8) Science influences how we see and understand the world.

NSES Content Standard G: History and nature of science.

(Grades K-4) Science is never finished. Much more remains to be understood.

(Grades 5-12) Where evidence is incomplete, scientists develop theories.

Credits: Dr. Andrew Fruchter, Hubble Space Telescope; Dr. Barry Geldzahler, NASA

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