

Sheet 1A**✚ ONCE UPON A TIME IN THE UNIVERSE!**

Once upon a time, a long, long, long time ago, there was nothing. No animals, no people, no Earth, no planets, no Sun, no stars, no galaxies, no Universe, nothing at all. Can you imagine? No space, no time, no matter. We must travel back in time about 14 million years ago when nothing existed. But, something happened. [Do you know what?] A big explosion took place in the middle of nowhere and from then on, things began to exist. This huge explosion, called the Big Bang, created an incredibly hot and dense Universe, smaller than an atom. In a fraction of a second, the Universe began to cool and expand in every direction, everywhere, a process which is still continuing today. [But, how can we describe the Universe?] Well, the Universe is the space and everything that exists in it, including the Earth, solar systems and galaxies. Imagine for a moment a big box with a lot of things inside: the big box is the Universe and the things inside are the planets, the stars, the Sun, galaxies, everything.

But let's go step by step. First of all, we had the Big Bang. [And after that, what happened?] Well, galaxies, solar systems, planets, stars and lots of other bodies started to shape the Universe. But the process was slow, really slow. For example, let's take the galaxies! Galaxies began to form one or two billion years after the Big Bang. [But, what is a galaxy?] In a simple way, a galaxy is an extremely large group of stars and planets. [Did you know there are about 100 billion galaxies in the part of the Universe that we can observe?] Basically, the matter in a galaxy is held together by the force of gravity, like human beings on Earth. Our home galaxy is named the Milky Way and contains about 200 billion stars.

And, what about the Solar System? [Why this name?] [Does it have anything to do with the Sun?] Yes, indeed! Think of our nearest star, the Sun. The Sun lies along one of the arms of our galaxy. Do you remember the name? Of course, the Milky Way! Seven planets

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plus the Earth move around the Sun. The name of this movement is known as an orbit. Then, smaller bodies, such as moons, asteroids, and comets, orbit the Sun or the planets. If we put all these bodies together with the Sun, we get the name: the famous Solar System. [By the way, did you know that our Sun was formed about 4.6 billion years ago?] [Did you know that this same Sun will die very far in the future?] [What will happen to us, then?]

And stars? [Do you want to know something about stars?] Stars are huge balls of gas made up mainly of hydrogen. Be careful if you want to touch any of them! They have a temperature of tens of millions of degrees. All stars look similar to our eyes in the night sky, but in reality they vary in their size, brightness, temperature and colour. Stars are continually being born and dying in the Universe.

Now, what about the planets? [How many of them have we got in the Solar System?] [Do you remember from last day?] Eight! Bingo! [Can you name them?] [Let's see...in order please from smallest to biggest: (expect from them to say: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune)]. That's right, brilliant! [But, what is a planet?] Scientists describe planets as spherical bodies that orbit the Sun or another star. As you said, there are eight planets in our Solar System and they can be divided into two main groups: the inner planets and the outer planets. Or, what is the same, the four small rocky planets nearest to the Sun, these are Mercury, Venus, the Earth and Mars, and the four gas giants which are farther away, these are Jupiter, Saturn, Uranus and Neptune.

So, just say that everything in the Universe is moving, the Earth is moving as well. But take care! Planets, solar systems and galaxies are not expanding. It is the space in between the galaxies which is stretching. It is believed that the Universe can only expand to a certain size. [Do you know what it means?] In billions of years' time, it will shrink and finally collapse. Another Big Bang, maybe?