Sheet 27A

TEXT TO BE READ OUT

BEYOND EARTH

This is a about Earth and you will hear some interesting things in relation with our home planet. First of all, a bit of history. We must travel back in time so many years, more than we can imagine, to find the formation of Earth. After the Big Bang, the Earth did not exist as it exists now. Astronomers believe we have to differentiate some stages in the Earth's formation: in the very beginning, there were just hot **clouds of dust and gas** circles to form the Sun; later, groups of dust formed together near the centre of the Solar System; the forming Earth was then bombarded with excess **gas and dust** blown off by the Sun. Much later it is when Earth starts to cool down and volcanoes throw up gases forming clouds; finally, rain fell to make the oceans.

We must distinguish some important characteristics about the Earth now, as for example the **atmosphere**. Earth's atmosphere consists mainly of nitrogen (75%), from the eruption of volcanoes over billions of years, and the oxygen (23%) produced by plants. There are different layers in the atmosphere. All living things and the weather are in the lowest, called the **troposphere**. Then we have the **stratosphere**, like a lid of the troposphere. Far above, we find the **mesosphere**, **thermosphere** and **exosphere**.

Another important characteristic about Earth are the **seasons**. As the Earth moves around the Sun, there are periods of the year in which some parts of the Earth are closer to the Sun and others which are farther away. So places receive more light and heat at some times of the year than at others, producing a pattern of changes in the weather called seasons. Places between the equator and the poles have four seasons: **spring**, **summer**, **autumn** and **winter**. As an example, summer happens in the southern hemisphere when the South Pole inclines toward the Sun. On the contrary, winter happens in the southern hemisphere when the South Pole inclines away from the Sun.

Sheet 27B

In relation with the spinning Earth, we find the **day** and **night**. Although the Sun seems to rise in the sky during the day and sink at night, it is really the Earth that is moving, not the Sun. When a part of the Earth turns towards the Sun, we can see as if the Sun is up in the sky and we have daytime. But, when a part of the Earth turns away from the Sun, it seems to disappear below the horizon. We find there is no light and it is very dark, this is when we say we have night.

Another important characteristic about Earth is **gravity**. Gravity is an invisible force that attracts objects towards another with much more mass. This is the reason why humans cannot jump and stay in the air floating, for example. When we try to do it, automatically the Earth's gravity attracts us to the ground. This force of gravity comes from the centre of the Earth, a place we cannot see, and other examples of gravity forces can be found in the Earth and the Moon; the Moon is attracted by the Earth because it has less mass than our home planet. The same happens with the Sun and the eight planets. The Sun has got much more mass than all the planets so the Sun attracts them making them orbit around it.