

1. Shape and size of the Earth

Shape of the earth:

- Earth is not a perfect circle
- It is an “Oblate Spheroid”.
- It is like a sphere, but the distance between pole to pole is less than the equatorial distance.
- It gives earth a flattened shape
- It is also known as “Ellipsoid” or “Geiod”

Our planet “Earth” is considered as a sphere, but is not a perfect sphere. Sir Isaac Newton first suggested that our earth is not a perfect sphere, but rather somewhat flattened at its poles. He calculated that the earth’s shape is an “Oblate Spheroid”

The equatorial diameter of the earth is 12,756 km and its polar diameter is 12,714 km. It has a difference of only 42 kms.

“Geodesy” is the science that studies the shape and size of the earth. In ancient period most of the people considered the shape of the earth as a flat surface. Aristotle and Pythagoras both argued that the earth was a sphere. They demanded it from the curved shadow cast at the time of lunar eclipses.

The shape of the earth can be compared with an orange which two poles are squished. It bulges at the equator and flat at the pole. The sphere of the earth is distorted due to the centrifugal force as it rotates.

Size of the Earth:

Aristotle was the first person who tried to calculate the size of the earth. Then the Greek philosopher *Erastosthenes* was able to calculate the earth’s

circumference at 25,000 miles. It is slightly higher than today's modern scientific calculation.

The latest survey about the dimensions of the earth are as follows:

- Equatorial circumference: 40,075 km
- Polar circumference: 40,007 km
- Equatorial diameter: 12,756 km
- Polar diameter: 12,714 km

Today satellite and GPS technology can make extremely accurate calculation of the size of the earth.

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