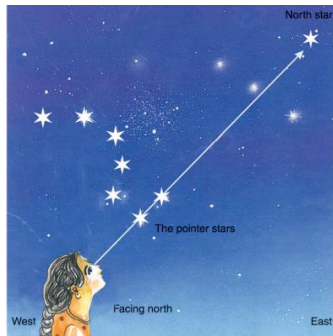


Chapter – 1: The Earth in our Solar System

- Wonderful – watch sky after sunset – one or two bright dots – soon – number increasing
- Whole sky – tiny shining objects – some bright – others dim
- All – appear to twinkle – BUT – some do not twinkle
- Along with these – moon – most days – different time, shape, size
- Full moon – once a month – **full moon night** – *Poornima*
- 15 days (fortnight) later – no moon – **new moon night** – *Amavasya*
- During day – see nothing – sun – too bright
- Sun, moon and other objects in sky – **celestial bodies**
- Some – very big and hot – made of gases – emit (give out) heat and light – **stars** – SUN
- Twinkling stars – night sky – similar to sun – do not feel heat and light – very far away
- Night sky – various patterns – different group of stars – **constellations** – Ursa Major or Big Bear
- Easily recognizable – *Saptarishi* (seven sages) – group of seven stars
- Ancient times – directions – help of stars
- North star – **pole star** – North direction – locate – help of Saptarishi



- Some celestial bodies – no heat and light – lighten up by light of stars – **planets** – comes from Greek word – ‘planetai’ – meaning – wanderers
- Earth – planet – heat and light from sun – nearest star
- Moon – satellite – revolve around earth
- Seven other planets – heat and light from sun – some have moons

The Solar System

- Sun – eight planets – satellites – other celestial bodies – asteroids and meteoroids form the solar system
- Solar family – sun – head

The Sun

- Centre – solar system
- Huge – made of hot gases
- Gravity – binds – solar system
- Ultimate source of heat and light
- Heat – not felt by us – nearest star – YET – 150 million km away

Planets

- Eight planets – solar system

- My Very Efficient Mother Just Served Us Nuts – Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune
- Revolve around sun – fixed path – **orbits**
- Mercury – nearest to sun – 88 days to complete orbit
- Venus – Earth's twin – size and shape – similar
- Until August 2006 – Pluto – planet
- Meeting – International Astronomical Union – Pluto and other celestial bodies (Ceres, 2003 UB₃₁₃) – declared – dwarf planets

The Earth

- 3rd nearest to sun
- Size – 5th largest
- Slightly flattened at poles – **Geoid** – earth-like shape
- Conditions – favourable for life – neither too hot nor too cold – water and air – oxygen – unique planet
- Earth – from space – blue – 2/3rd planet covered with water – blue planet

The Moon

- Earth – one natural satellite – moon
- Diameter – 1/4th of earth
- Appears big – nearer to earth than other – 3,84,400 km
- Moon revolves around earth – 27 days – only one side visible
- Moon – not favourable for life – mountains, plains, depressions

Asteroids

- Numerous tiny bodies – between Mars and Jupiter orbit
- Part of planets – exploded many years ago

Meteoroids

- Small rocks – around sun
- Sometimes – come near earth – drop on it
- Friction – air – heat up – burn – **meteor**
- Some meteor – unburnt – fall on earth – create crater – **meteorite**

- White broad band – white glowing path – cluster of million stars – *Milky Way Galaxy*
- Ancient India – imagined – river of light – *Akash Ganga*
- **Galaxy** – collection – billions of stars and clouds of gases and dust
- Millions of galaxies – together – **Universe**
- Scientists – uncertain of size