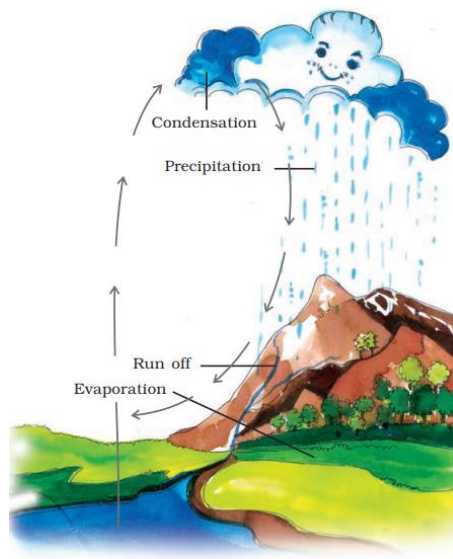


Chapter – 5: Water

- Rivers, waterfalls, rain drops – everything contain water
- Children – float paper boats – water puddles – vanishes by noon
- Sun's heat – evaporation – water to vapour
- Vapour cools down – condenses – from cloud – rains over the land and water bodies
- This process – changing of forms of water – circulates between oceans, atmosphere – water cycle
- Earth is like a terrarium – same water – circulates in the nature
- Terrarium – sealed glass jar – creates a small fake environment
- Major sources – fresh water – rivers, ponds, glaciers, etc
- Oceans and seas – salty water – lots of dissolved salts – most common – Sodium Chloride (common table salt)



Distribution of Water Bodies

- 3/4th of earth's surface – covered by water
- More water than land on earth – many countries face water problems
- Distribution of water –

○ Oceans	–	97.3	Saline water
○ Ice-caps	–	02.0	Fresh water
○ Ground water	–	0.68	Fresh water
○ Fresh water lakes	–	0.009	Fresh water
○ Salt lakes	–	0.009	Fresh water
○ Atmosphere	–	0.0019	Fresh water
○ Rivers	–	0.0001	Fresh water
○ Total	–	100.00	
- Water – very imp. – do not waste it

Ocean Circulation

- Wet sand on the beach, cool breeze, smell of salt, music of waves – feels so good
- Ocean water – moves continuously

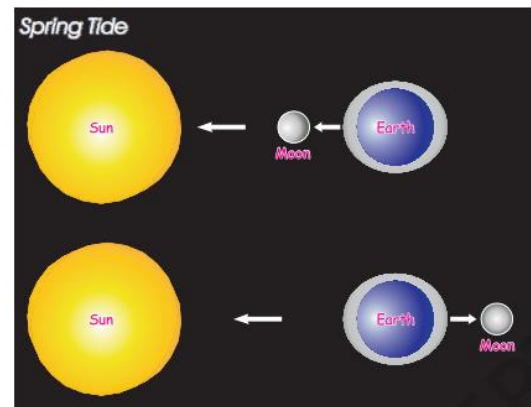
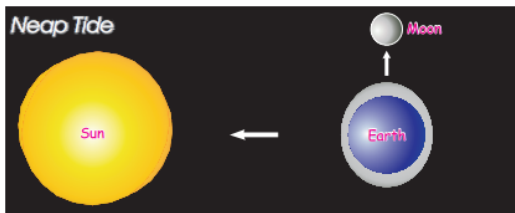
- Movements in oceans – waves, tides, currents

Waves

- Water – surface of ocean – rises and falls – waves
- Playing throw ball – ball falls in the water – comes back with waves
- Storm – winds – blow at very high speeds – form huge waves
- Earthquake, volcanic eruption, landslide – under water – cause huge waves – **tsunami**
- Waves during tsunami – reach heights of 15 m
- Largest tsunami – 150 m high
- These waves – travel at 700+ km per hour
- Tsunami 2004 – caused lots of damage – Indira point, Andaman and Nicobar Islands – submerged

Tides

- Rhythmic rise and fall – ocean water – twice a day – tide
- High tide – water rises to highest level
- Low tide – water falls to lowest level
- Cause of tides – gravity of Sun and Moon
- Water of earth – closer to the moon – gets pulled – gravity of moon – high tide
- Full moon and new moon days – Sun, Moon, Earth – same line – highest tides – spring tides
- Moon – 1st and last quarter – ocean water – pulled in diagonally opposite directions – gravity of Sun and Moon – low tides – neap tides
- High tides – help in navigation – raised water level – helps the ships – arrive at harbour easily
- High tides – also helps in fishing – more fish come near the shore – fishermen catch lots of fish
- Rise and fall of tides – used to generate electricity



Ocean Currents

- Streams of water – flowing constantly on the surface – definite directions
- May be warm or cold
- Warm ocean currents – equator to poles
- Cold ocean currents – polar (higher) latitudes to tropical (lower) latitudes
- Labrador ocean currents – cold current – Gulf stream – warm current
- Ocean currents – affect the temperatures
- Areas – warm and cold currents meet – best fishing place – BUT – foggy weather – difficult to navigate
- Seas around Japan, eastern coast of North America

