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Social Science - II
Chapter-1 Class-1



Seasons and Time



Biju KK, HST Social Science, GHSS Tuvvur 2021-22







Seasons

- Winter,
- Spring,
- Summer, and
- Autumn.

Why seasons change?

- Revolution of Earth around the Sun
- The tilte of the Earth's axis
- The parallelism of the Earth's axis.

**(As a result the Sun' apparent movement between
Tropic of Cancer ($23\frac{1}{2}^{\circ}\text{N}$) and
Tropic of Capricorn ($23\frac{1}{2}^{\circ}\text{S}$)
(Utharayanam and Dakshinayanam)
the different seasons get appear in the Earth)**

Revolution of Earth

-The Earth revolves around the Sun in an elliptical Orbit. -This is known as revolution of Earth

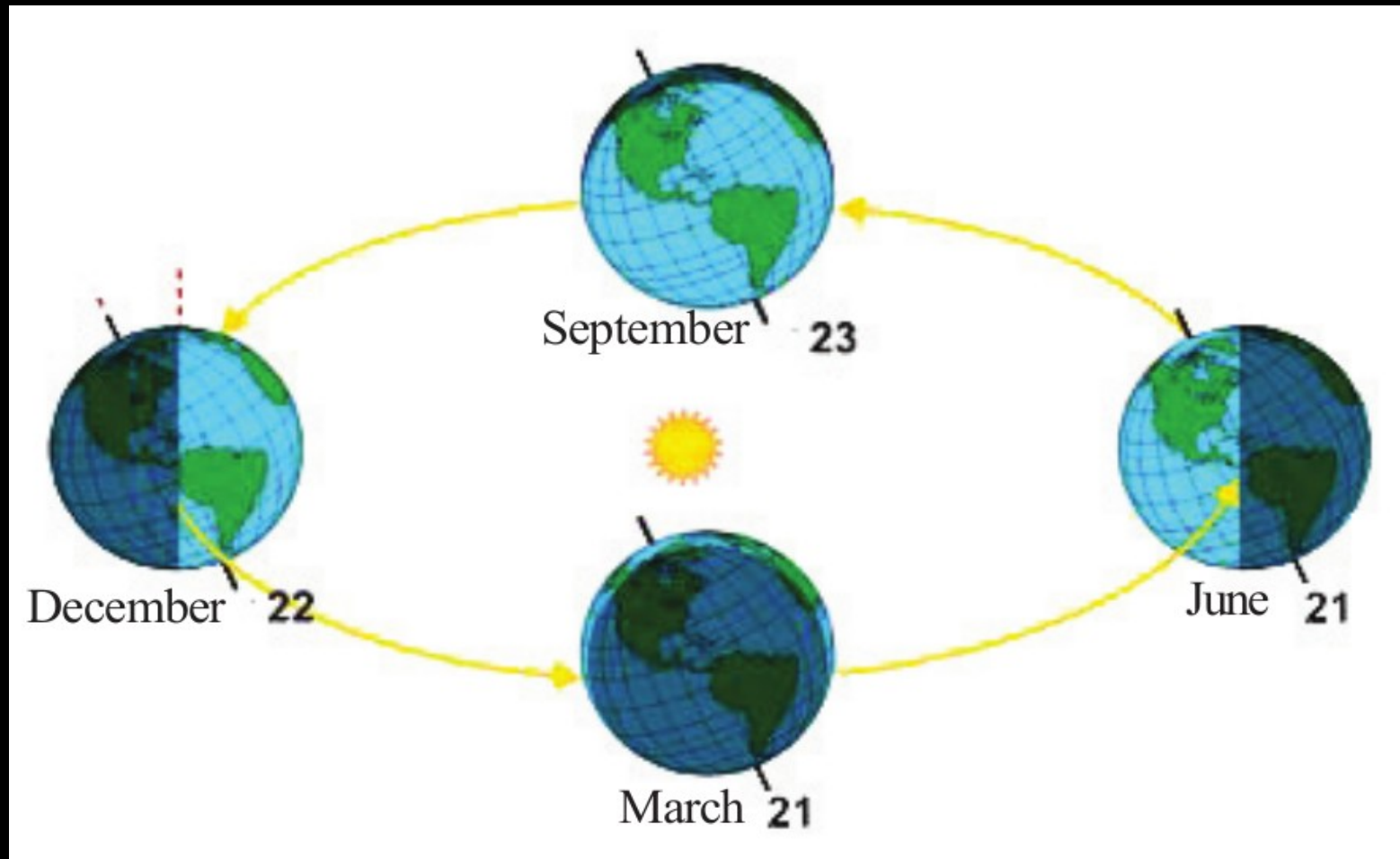
-How much time does the Earth take to complete one revolution?

365 1/4 days

What is a leap year?

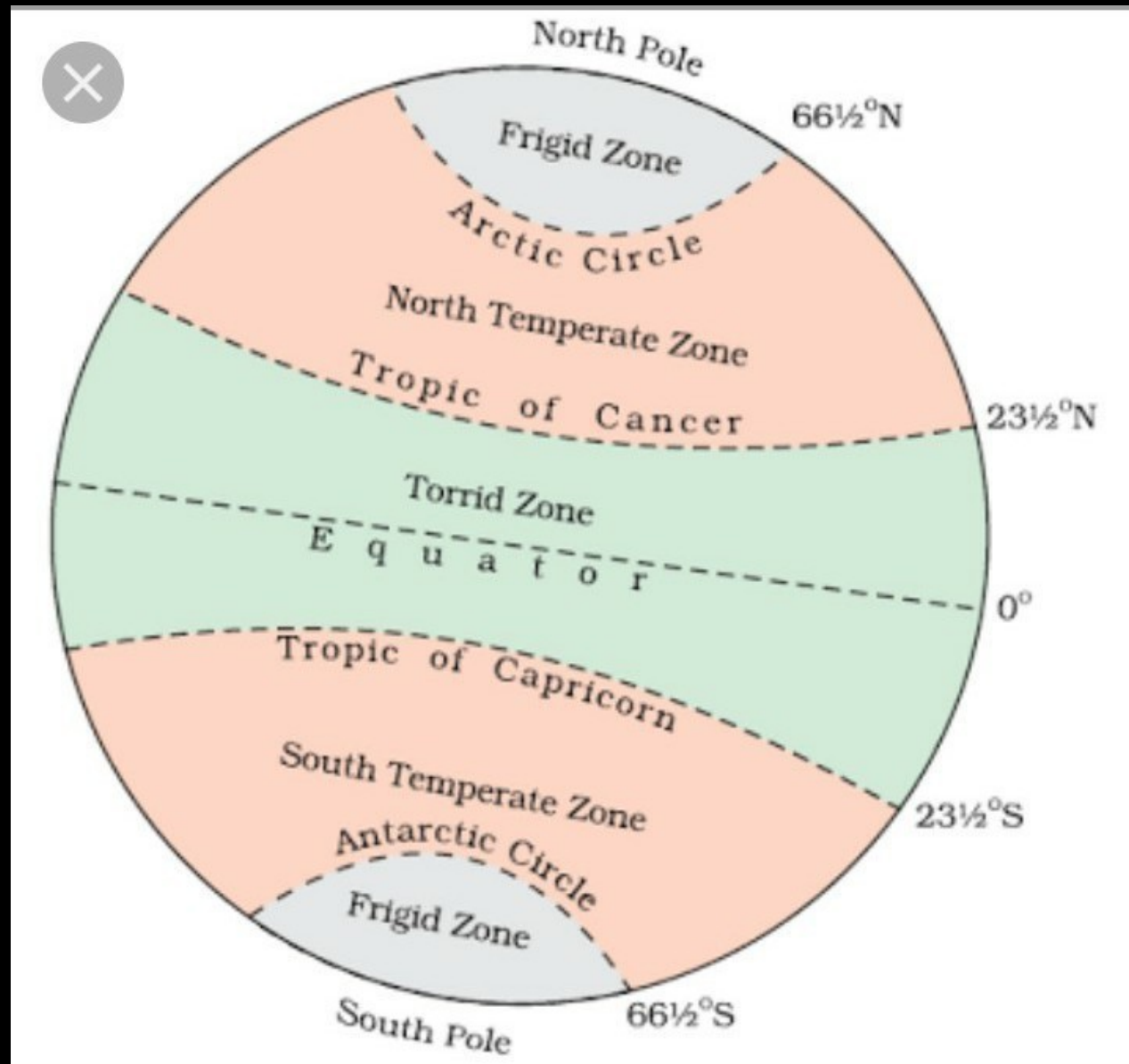
A year, occurring once every four years, which has 366 days including 29 February as an intercalary day (Every four years, February has 29 days instead of the usual 28. So 2020 will be a 366-day year).

The parallelism of the Earth's axis.



**The Earth maintains angles of axis throughout its revolution.
This is known as the parallelism of the Earth's axis.**

HEAT ZONES OF THE EARTH



Apparent movement of the Sun

-Since the parallelism of axis of the Earth is maintained same throughout the revolution, the position of the Sun in relation to the Earth varies apparently between Tropic of Cancer ($23\frac{1}{2}^{\circ}$ North) and Tropic of Capricorn ($23\frac{1}{2}^{\circ}$ South).

-This is known as the apparent movement of the Sun.

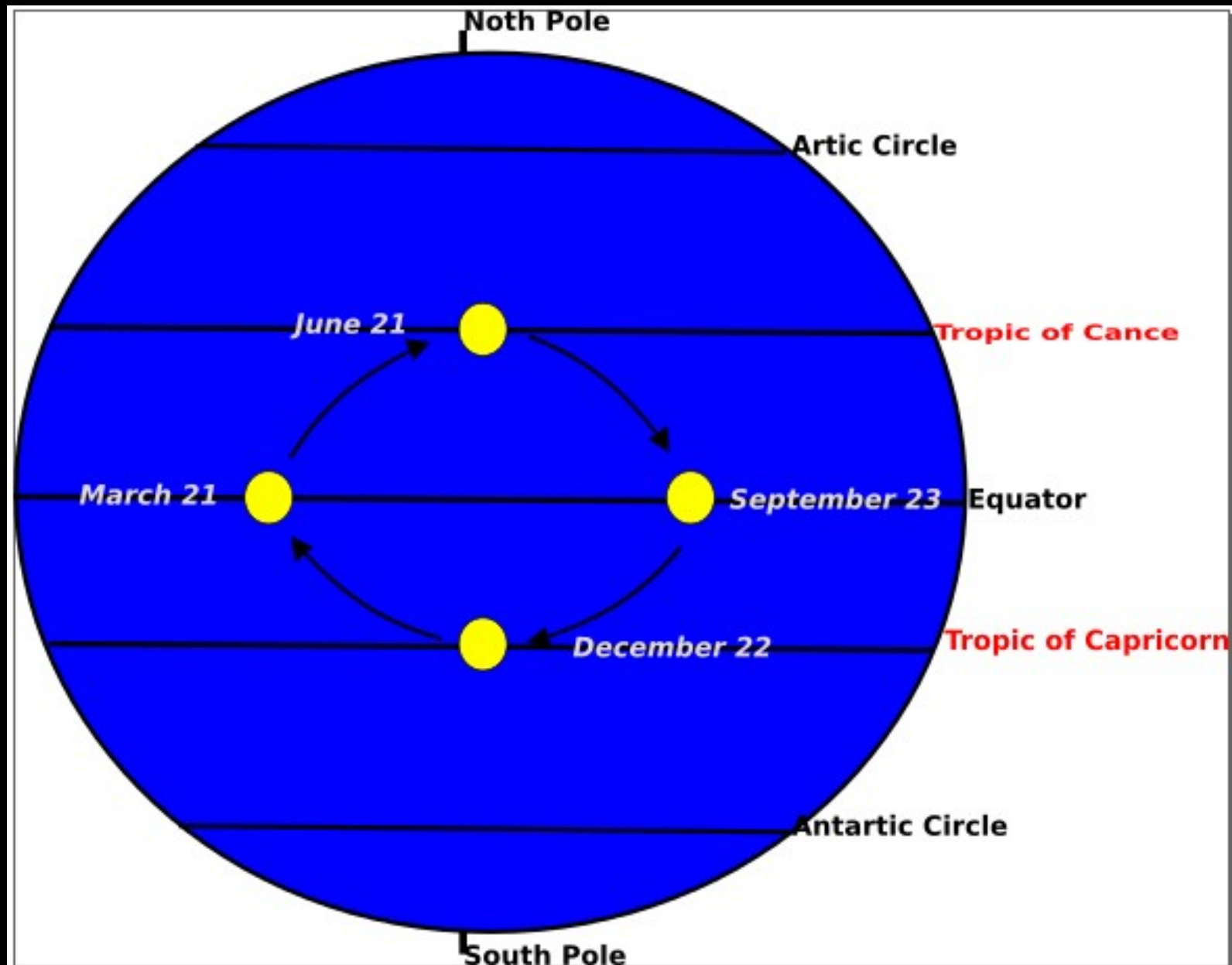
-There is variation in the sunlight that falls on the Earth due to the apparent movement of the Sun.

-The Sun's rays fall vertically over one hemisphere during one half of the year and on the other hemisphere, during the other half.

-Temperature will be higher over those hemisphere where the vertical -rays of the Sun fall. (Summer season)

-The temperature will be low at hemisphere where the Sun's rays are slanting. (Winter season)

APPARENT MOVEMENT OF THE SUN



Seasons and apparent movement of the Sun

- As a result of the apparent movement of the sun between Tropic of Cancer ($23\frac{1}{2}^{\circ}\text{N}$) and Tropic of Capricorn ($23\frac{1}{2}^{\circ}\text{S}$), the different seasons get repeated in a cyclic manner.
- The seasons are Spring, Summer, Autumn and Winter.
- Seasonal changes are not usually very obvious in the tropical regions because of the incidence of large amount of Sun's rays throughout the year.
- Characteristics of different seasons are clearly felt in the mid latitudinal or temperate zones.

Seasons and apparent position of the Sun

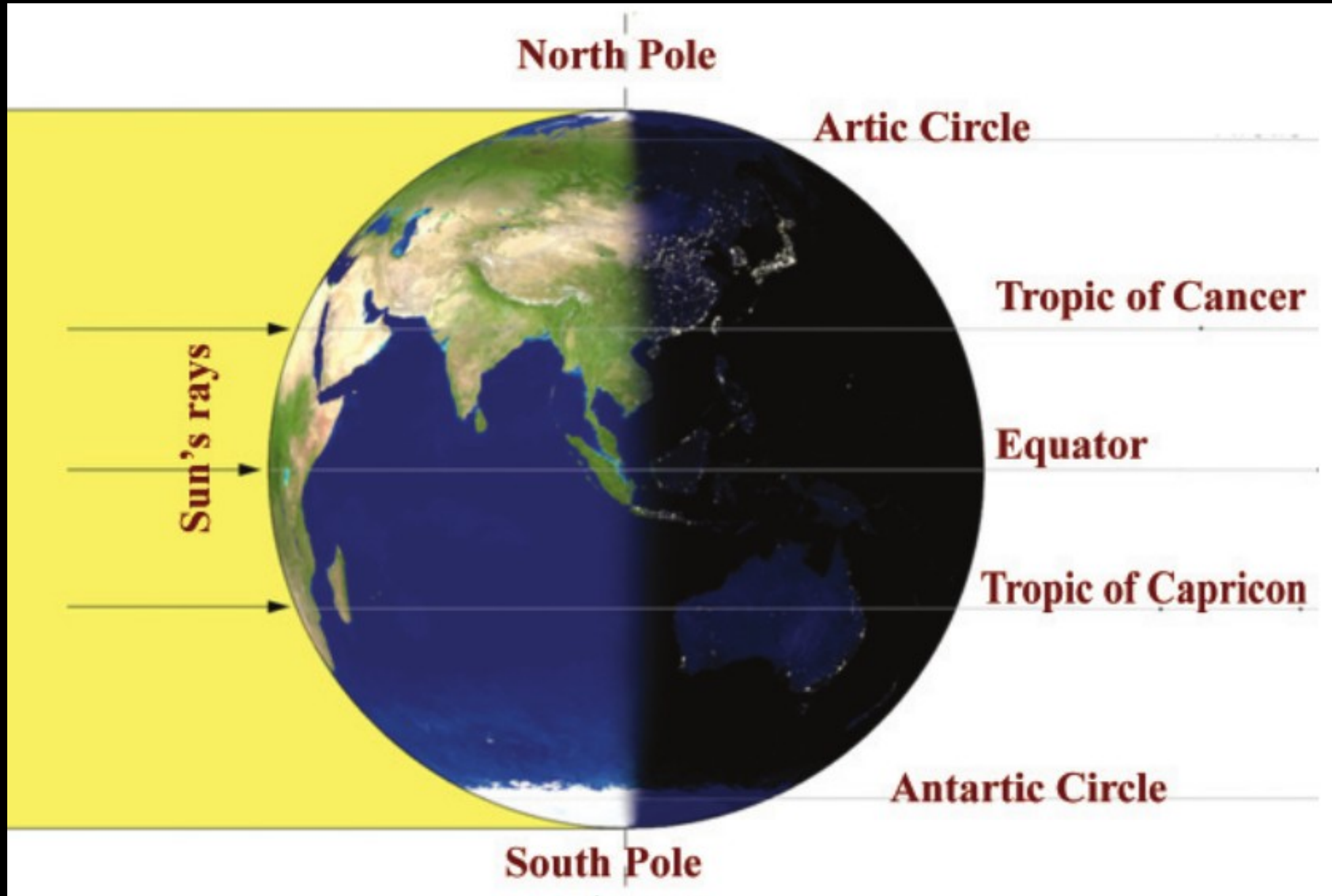
Months	The apparent movement of the sun	Seasons	
		Northern hemisphere	Southern hemisphere
From March 21 to June 21			
From June 21 to September 23			
From September 23 to December 22			
From December 22 to March 21			

Seasons and apparent position of the Sun

Months	The apparent movement of the sun	Seasons	
		Northern hemisphere	Southern hemisphere
From March 21 to June 21	From the Equator to Tropic of Cancer	Spring	Autumn
From June 21 to September 23	From Tropic of Cancer to the Equator	Summer	Winter
From September 23 to December 22	From the Equator to Tropic of Capricorn	Autumn	Spring
From December 22 to March 21	From Tropic of Capricorn to the Equator	Winter	Summer

Summer Solstice

- From 21 March onwards, the Sun apparently shifts from the Equator northwards and reaches vertically over the Tropic of Cancer ($23\frac{1}{2}^{\circ}\text{N}$) on 21 June.
- 21 June is known as the Summer Solstice in the Northern Hemisphere.
- On this day the Northern Hemisphere experiences its longest day and shortest night.
- But Southern Hemisphere experiences its longest night and shortest day.
- From 21 March to 21 June Northern Hemisphere generally experiences spring season and Southern Hemisphere experiences Autumn.



EQUINOXES

- The apparent position of the Sun during the Earth's revolution will be over the Equator on March 21 and September 23.
- The length of day and night will be equal during these days on both the hemispheres.
- These days are called equinoxes.

WINTER SOLSTICE

- The Sun continues its southward apparent shift from the Equator from 23 September and reaches vertically above Tropic of Capricorn ($23\frac{1}{2}^{\circ}\text{S}$) on 22 December
- 22 December is known as Winter Solstice in the Northern Hemisphere.
- On this day the Northern Hemisphere experiences its shortest day and longest night.
- What is the peculiarity of the day and the night in the Southern Hemisphere on 22 December?*
- This day the Southern Hemisphere experiences its longest day and shortest night.



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SPRING SEASON

- The Northern Hemisphere generally experiences spring season between 21 March and 21 June.
- Spring is the season of transition from winter to Summer.

Features:-

- The plants sprouts,
- Mango trees blooms.
- Jack fruit trees bearing buds.



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SUMMER SEASON

- The Northern Hemisphere generally experiences Summer season between 21 June and 23 September. (Southern Hemisphere experiences Winter season)
- The southward apparent movement of the Sun begins from 21 June and reaches vertically above the Equator on 23 September.

What are the changes observed in nature during the summer season?

- Increase in atmospheric heat,**
- Water bodies getting dry.**



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Autumn Seasons

- The period of the Sun' apparent shift from the Equator to the Tropic of Capricorn (23 September - 22 December), the Northern Hemisphere experiences Autumn season.
- Autumn is the transition from summer towards winter.
- During this period, the atmospheric temperature decreases Considerably.
- There is shortening of day and lengthening of night during the Period.
- This is the season during which the trees generally shed their leaves.

-The shedding of leaves is a form of adaptation to survive the forthcoming dry winter.

What is the season in the Southern Hemisphere, when it is autumn in the Northern Hemisphere?

-Spring

WINTER SEASON



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WINTER SEASON

- The northward apparent shift of the Sun begins by 22 December and reaches vertically above the Equator on 21 March.
- This period marks the winter season in the Northern Hemisphere.

What are the peculiarities of Winter Season?

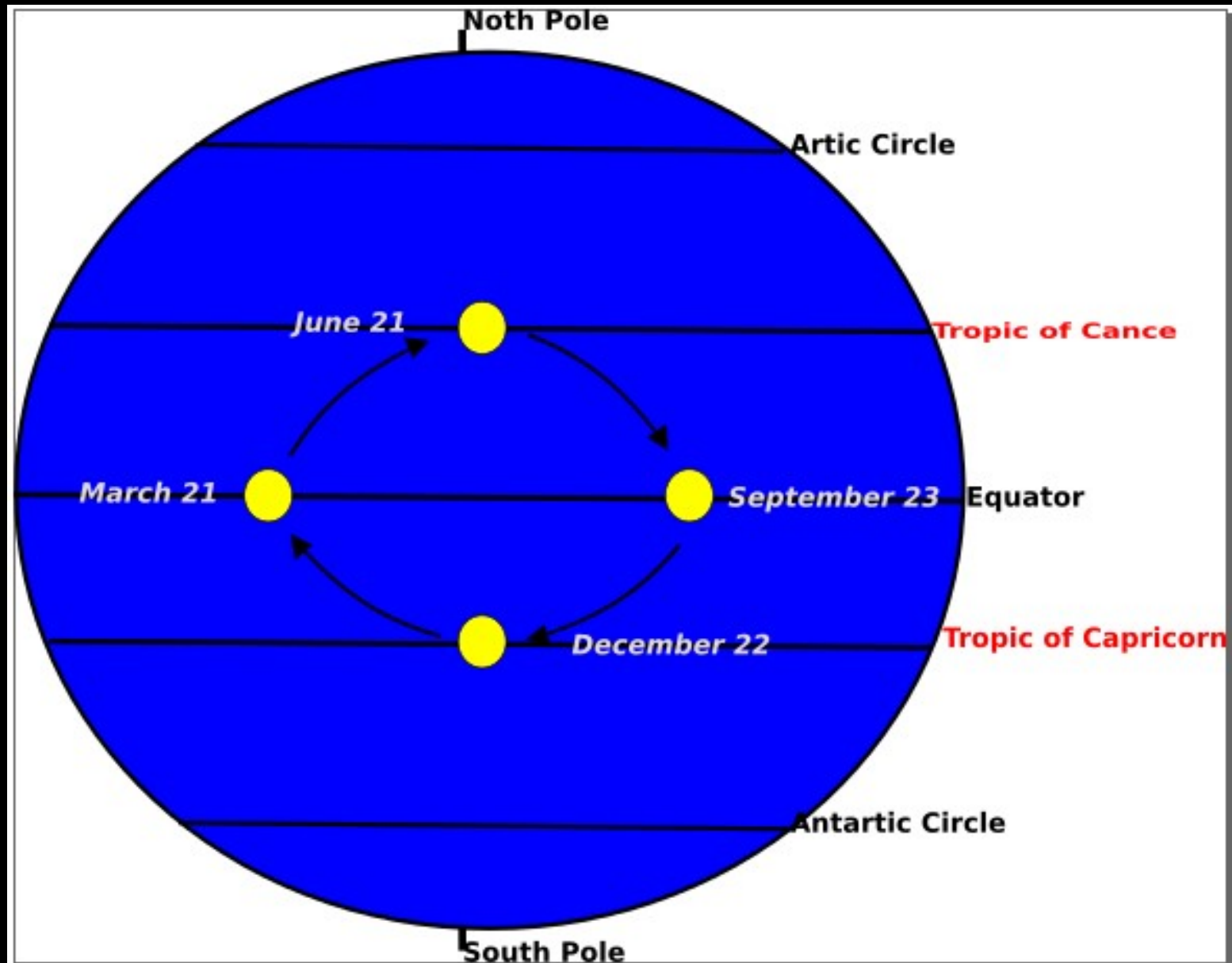
-Falling snow

-Freezing cold temperatures

Which will be the season in the Southern Hemisphere when it is winter in the Northern Hemisphere?

-Summer

UTHARAYANAM AND DAKSHINAYANAM



UTHARAYANAM

- Northward apparent movement of the Sun from Tropic of Capricorn to Tropic of Cancer is termed as 'Utharayanam'.**
- The period is 22 December to June 21**
- The duration of day in the northern hemisphere gradually increases during this period.**

DAKSHINAYANAM

- Southward apparent movement of the Sun from Tropic of Cancer to Tropic of Capricorn is termed as 'Dkshiayanam'.
- The period is 21 June to 22 December
- The duration of day in the Southern hemisphere gradually increases during this period.

ALL THE BEST

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