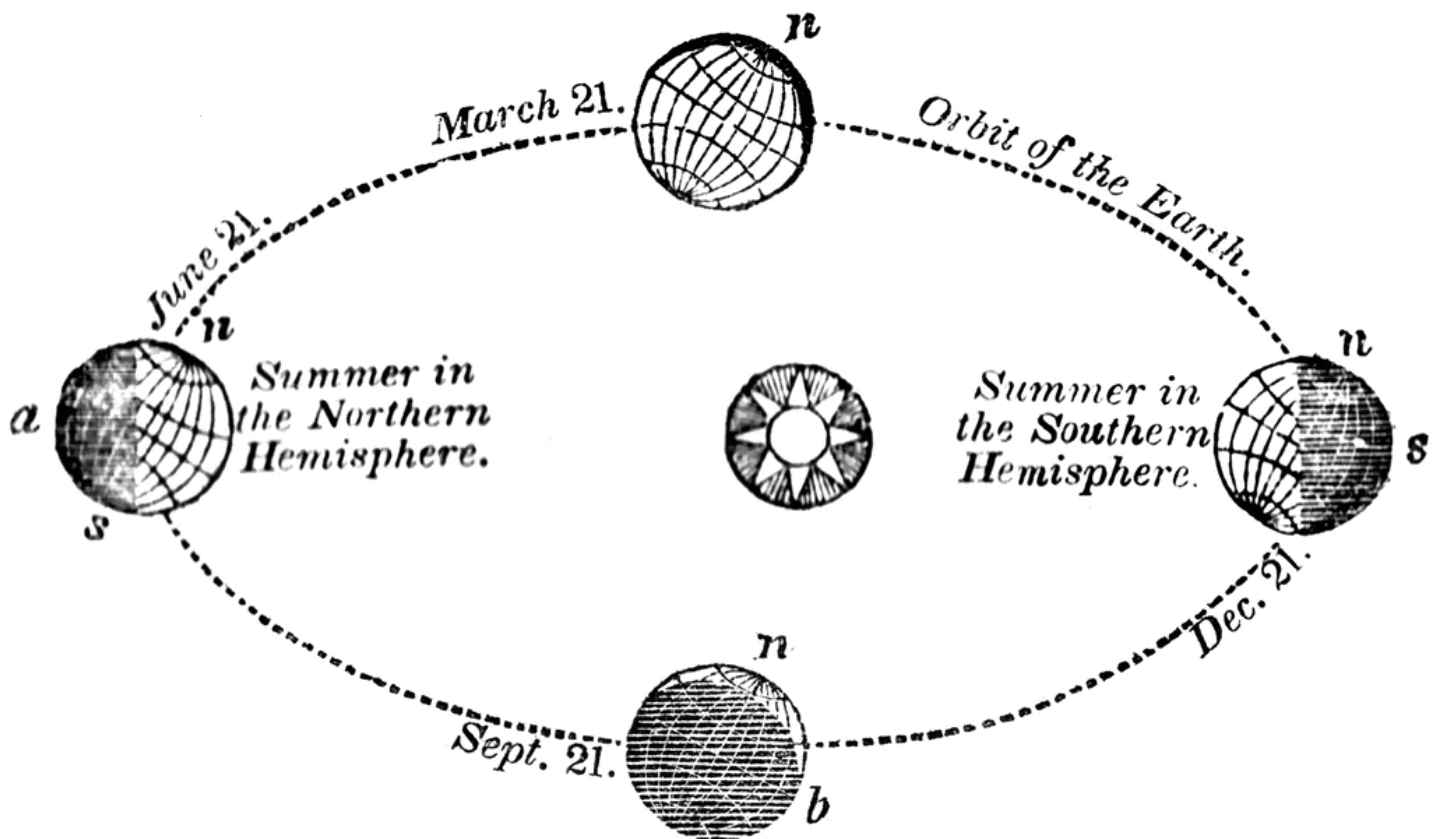


Let's Investigate

# Seasons & Calendar



Hi! I hope you enjoy exploring math with us this year. I created these pages for my children and I am happy to share them with you, so your family can enjoy them also. I have tried to include a variety of activities that can be used with children of all ages. Just print off the activities that you think will suit your children. Most of the activities are investigative, so you won't need an answer book. If you get stuck please email me and I will be happy to help. If the activities are research based questions I will provide links to help with finding the answers. I have also included a list of books, or web pages, you might enjoy to explore while looking at the topic. I hope you enjoy these investigations!

*Created by Jo Buijs*

*Instagram*

[nature\\_study\\_australia](#)

[Jo\\_mathinnature](#)

*Please print these pages freely within your home. If you would like to share this resource, please link back to [naturestudyaustralia.com.au](https://naturestudyaustralia.com.au). Thank you!*

*Any pictures are either my own work or have been sourced at*

*Clip Art ETC <https://etc.usf.edu/clipart/> (Images have been used according to the free classroom use license.)*

*Or*

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***Front cover picture:***

*J. L. Comstock A System of Natural Philosophy: Principles of Mechanics (: Pratt, Woodford, and Company, 1850) 309*

*Creating a Season Wheel (Paper plate, crayons or paint, ruler, magazine or old books)*

*Talk about the different seasons. What kinds of things will you see?*

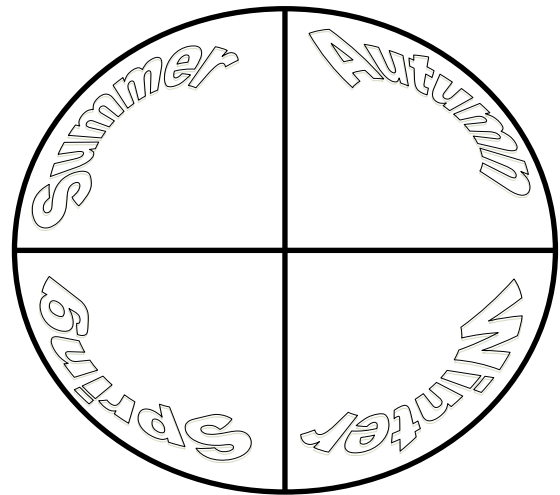
*Research the average temperature for each season in your area.*

*Divide the plate into four equal sections. Label each section:*

*Summer—Autumn—Winter—Spring.*

*Add the temperature data that you discovered to your circle.*

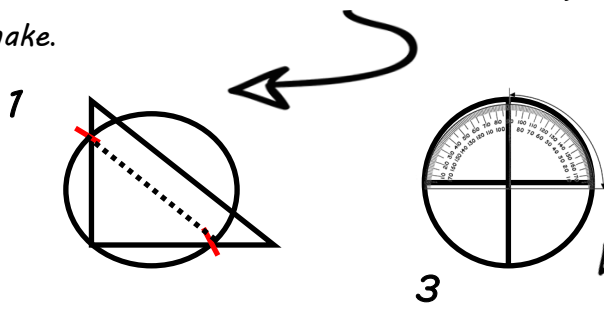
*Illustrate each section using cut out pictures or draw your own.*



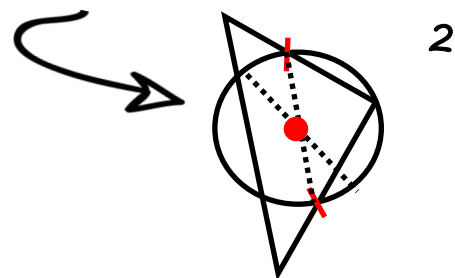
### *Dividing Circles*

*To divide a circle, we need to find the centre. For this activity you will need a compass, right angle triangle, ruler and protractor. Practice drawing circles of different sizes with your compass.*

*Take a right angle triangle. (You can use the corner of a piece of paper.) Lay the triangle in your circle so the point is touching an edge. Mark where the sides cross and draw a line from the marks you make.*



*Move the triangle to a different position and repeat.*



*Where the lines intersect is the centre of the circle..*

*Learn these circle words: Circle, Sphere, Diameter, Radius, Chord, Circumference, Area, Centre.*

*There are 360° in a circle, to divide it equally use a protractor and measure four equal 90° sections.*

## Solstice

When the Earth is the most tilted away, or towards, the Sun.

The days when this happens are called:

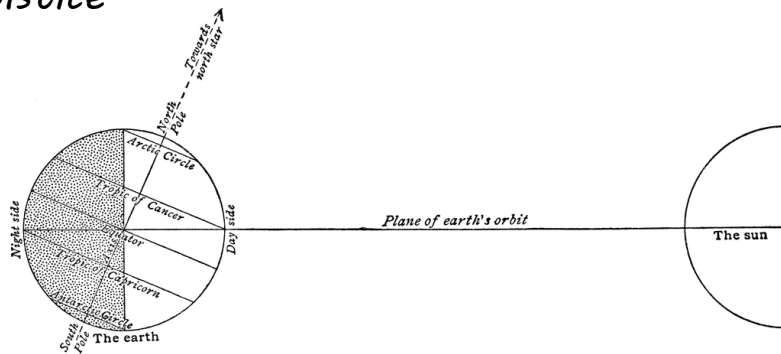
- Summer solstice (the longest day of the year)
- Winter solstice (the shortest day of the year)

Solstice happens around June 21 and around December 21.

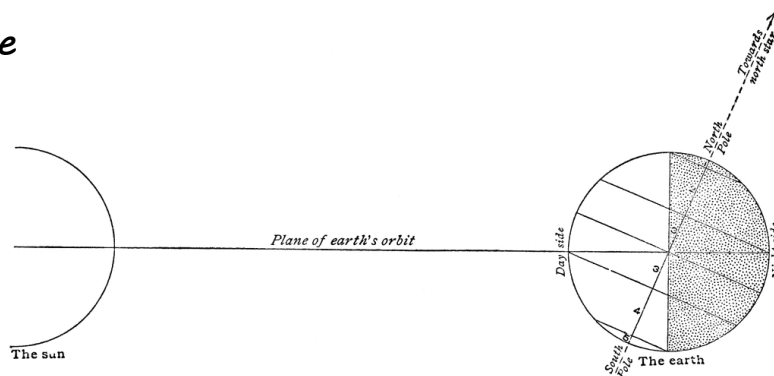
Find out the dates for where you live and copy the diagrams (on the next card) and dates into your math journal.

I wonder? Why are the dates opposite for the Northern and Southern Hemisphere?

### Summer Solstice



### Winter Solstice



## Discovering Seasons

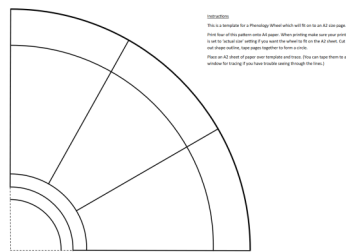
In some places around the world, there are not just four seasons.

Where I live the Indigenous calendar has six seasons.

Research the different seasons on the Indigenous Australian calendar. You can find information [HERE](#).

Chose one of the regions and draw a map and season wheel (phenology wheel) with information from your research. Add this to your pocket.

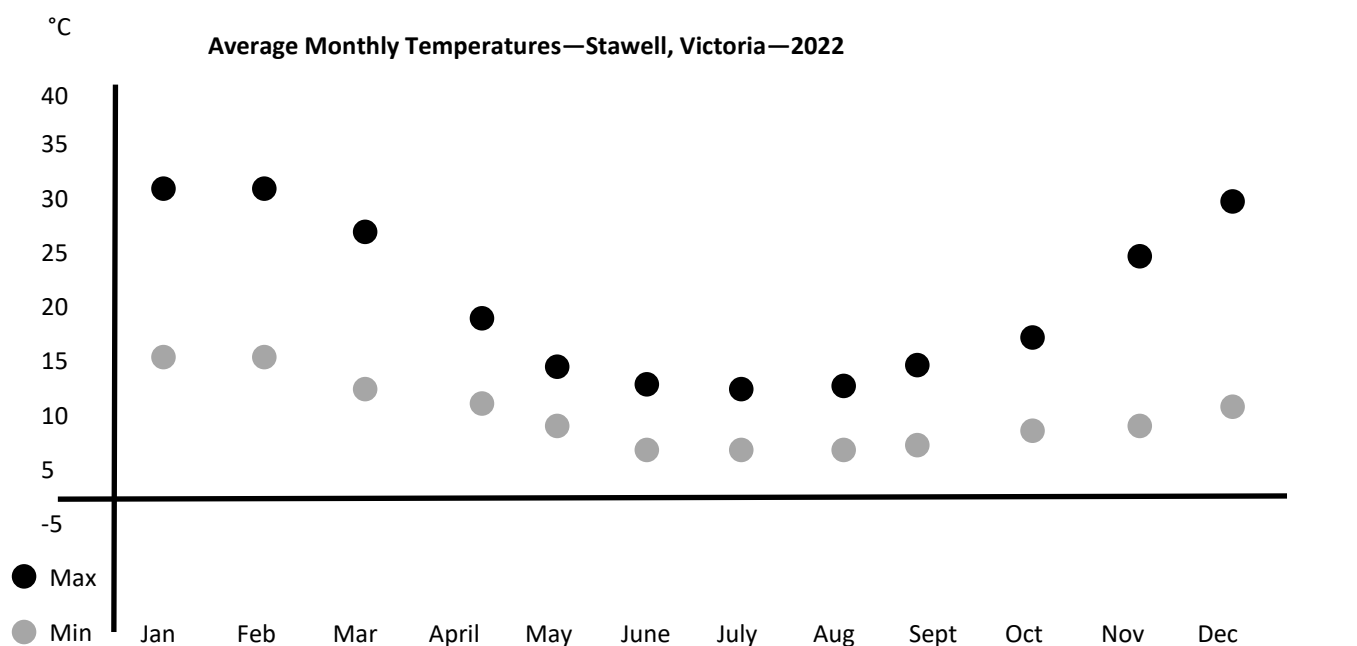
You can download a template for a phenology wheel [HERE](#).



Create a graph.

On the X-axis mark the months of the year. On the Y-axis mark the temperature.

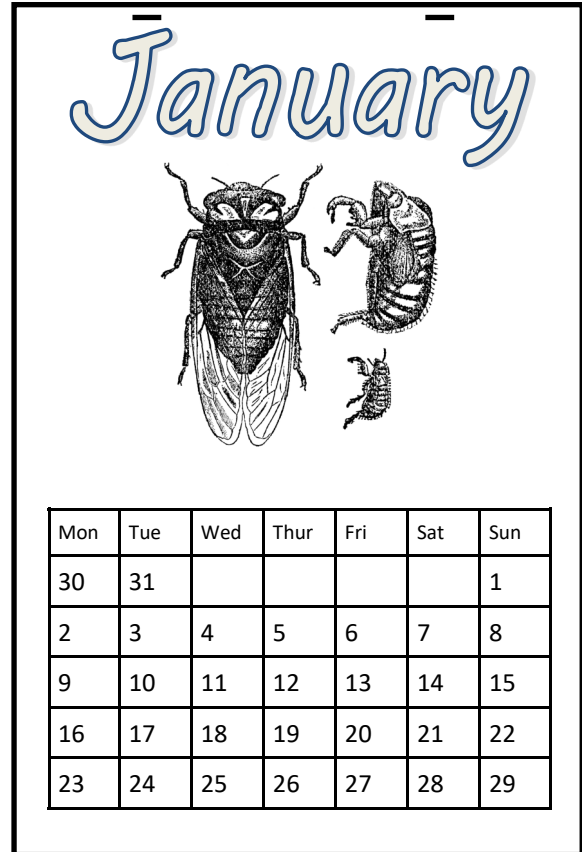
Graph the average monthly temperature for where you live. You can do this month by month over a year or research the temperatures and do the graph for the year past.



## Create your own calendar

Write out all the months of the year and how many days are in each month.

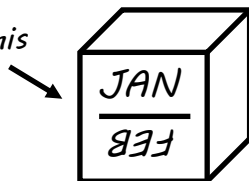
Divide a A4 page in half. On the bottom half draw a table, six rows and seven columns. Label the top row with the days of the week. On the top half write the month and draw a picture to show something about the season. Fill in the days and any special occasions to remember, like birthdays and celebrations. Staple all the pages together. You might like to make your calendar for next year, ready to give as a gift!



## Make a perpetual calendar

You will need three wooden cubes.

On the first cube label each side with the two months like this



On the second cube number each side

0,1,2,3,4,5,

On the third cube number each side

0,1,2,6,7,8

You now will have enough combinations for each day of the year.

**Challenge:** how many different number combinations can you make with the two number cubes? Write your working here



## Advanced Math Activities

**Research:** Do a research project on the [Wurdi Youang](#), or choose another ancient formation thought to be a calendar or time keeping structure.

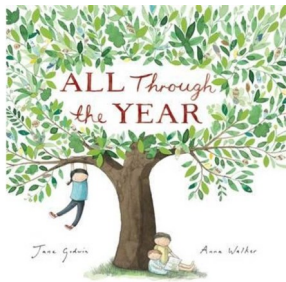
**Research:** Do research on why we have different seasons. Create a PowerPoint or slide show explaining the seasons.

## Extension Work

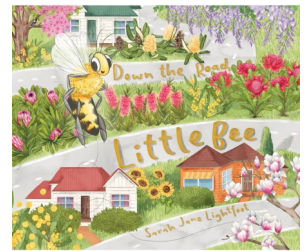
Watch this TEDed video on Vivaldi's Four Seasons. Chose a theme and learn to play it on your chosen instrument. You can download a free copy of the Spring theme from the Easy Piano Teacher [HERE](#).

Can you find math in music? Write about the math in music in your math journal!

Books, videos and links that you might find helpful...



- *All Through the Year*  
by Jane Godwin
- *Down the Road Little Bee*  
by Sarah Jane Lightfoot



## Video Links

[Calendar for kids](#)

[The Different Seasons in Indigenous Culture](#)

## Links

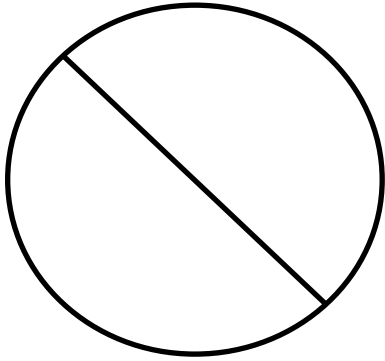
[Indigenous Weather Knowledge](#)

[Water Corporation Lesson Plan— Aboriginal Seasons](#)



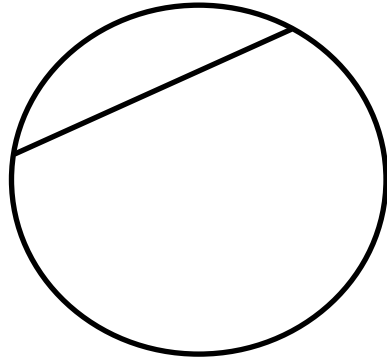


*The distance from one side of the circle, through the centre to the other side.*



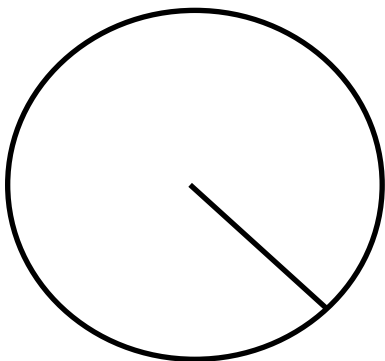
*Diameter*

*A line that goes from one side of the circle to another point on the circle.*



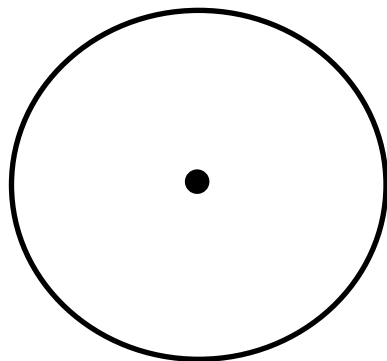
*Chord*

*The distance from the centre of the circle to the edge.*



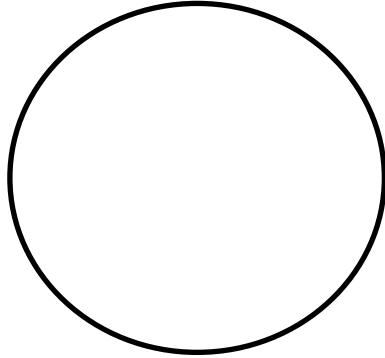
*Radius*

*The middle of the circle.*



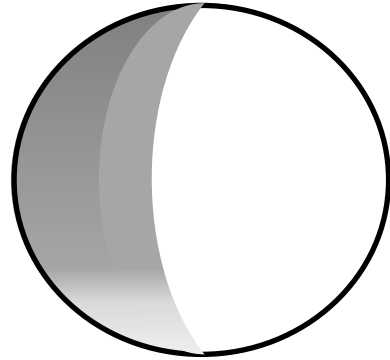
*Centre*

*A shape which has an equal distance from the centre to each point on the edge.*



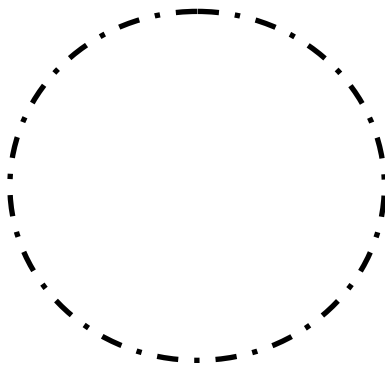
*Circle*

*The 3D circle shape*



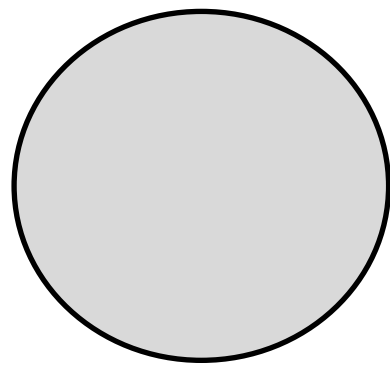
*Sphere*

*The distance around the circle.*



*Circumference*

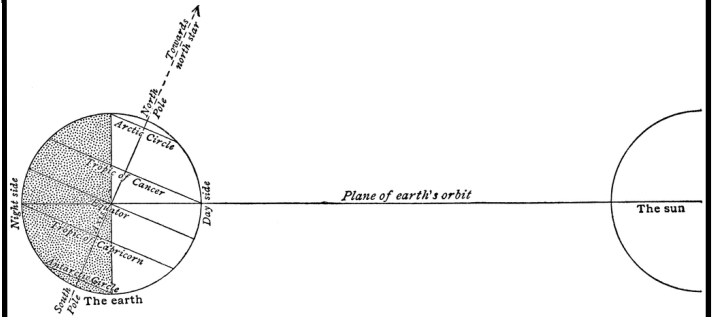
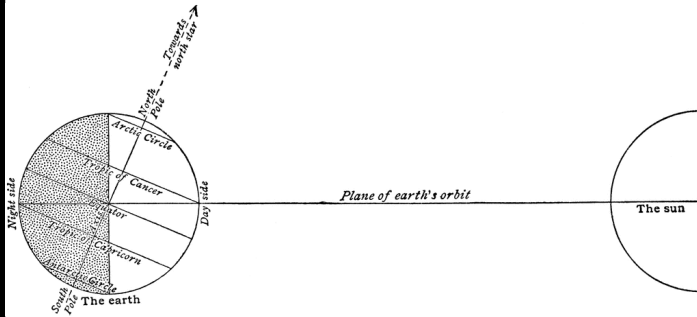
*The space covering the surface of the circle.*



*Area*

*Longest day of the year*

*Longest day of the year*

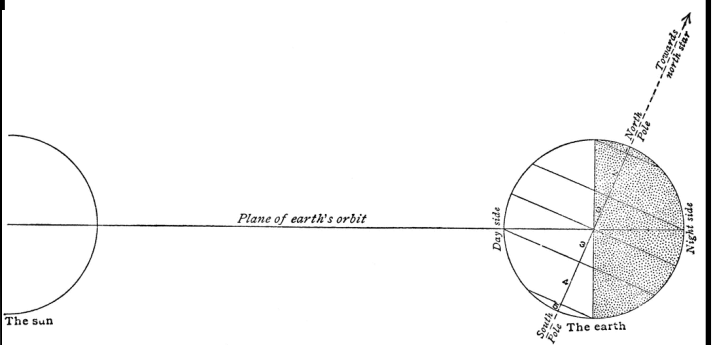
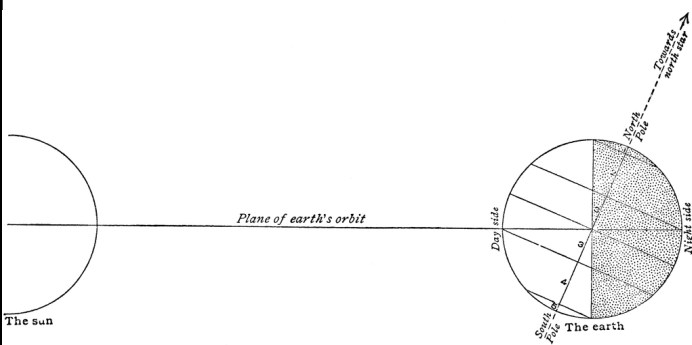


*Summer Solstice*

*Summer Solstice*

*Shortest day of the year*

*Shortest day of the year*



*Winter Solstice*

*Winter Solstice*

*September, October, November*



*Spring*

*September, October, November*



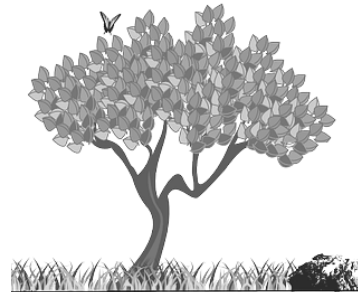
*Spring*

*December, January, February*



*Summer*

*December, January, February*



*Summer*

*June, July, August*



*Winter*

*June, July, August*



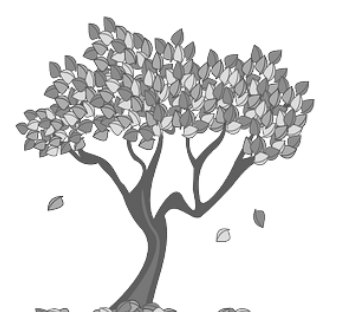
*Winter*

*March, April, May*



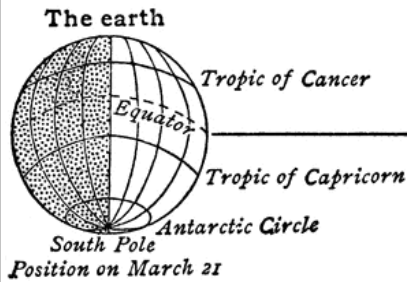
*Autumn*

*March, April, May*



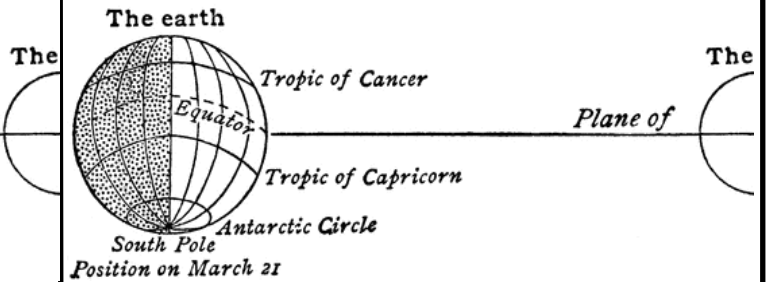
*Autumn*

*Length of day is almost equal to night*



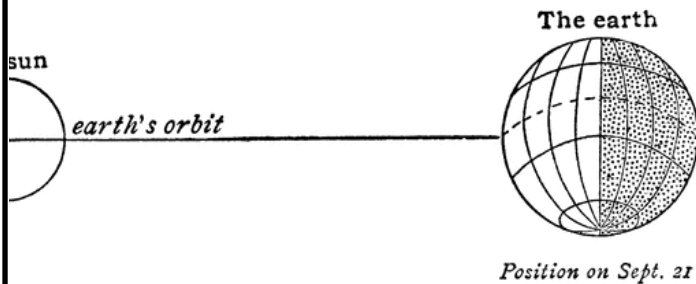
*Autumn Equinox*

*Length of day is almost equal to night*



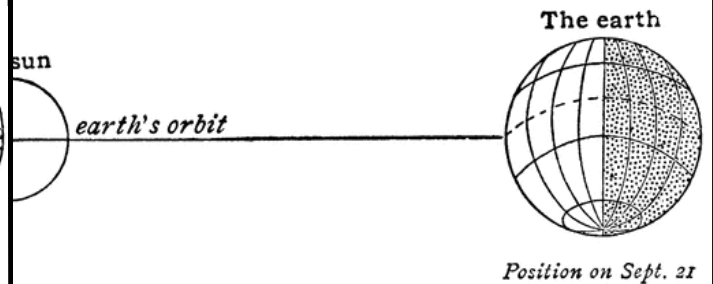
*Autumn Equinox*

*Length of day is almost equal to night*



*Spring Equinox*

*Length of day is almost equal to night*



*Spring Equinox*