

# The Effects of Rotation and Revolution on the Earth

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# Introduction

This presentation is geared towards informing the viewers about the effects of rotation and revolution on the Earth.



# Objectives

At the end of the presentation you should be to:

- ❖ define rotation
- ❖ explain the effects of rotation
- ❖ define revolution
- ❖ explain the effects of revolution



# Rotation



# Definition of Rotation of the Earth

Rotation is the movement of the Earth on its axis over a twenty four (24) hours period. The speed of rotation is  $24,855 / 24$  hours or 1,038 miles/hr.



# Rotation

Earth Rotates on its axis.



One complete rotation takes  
23 hr 56 min 4.1 sec.



# The Effects of Rotation on the Earth



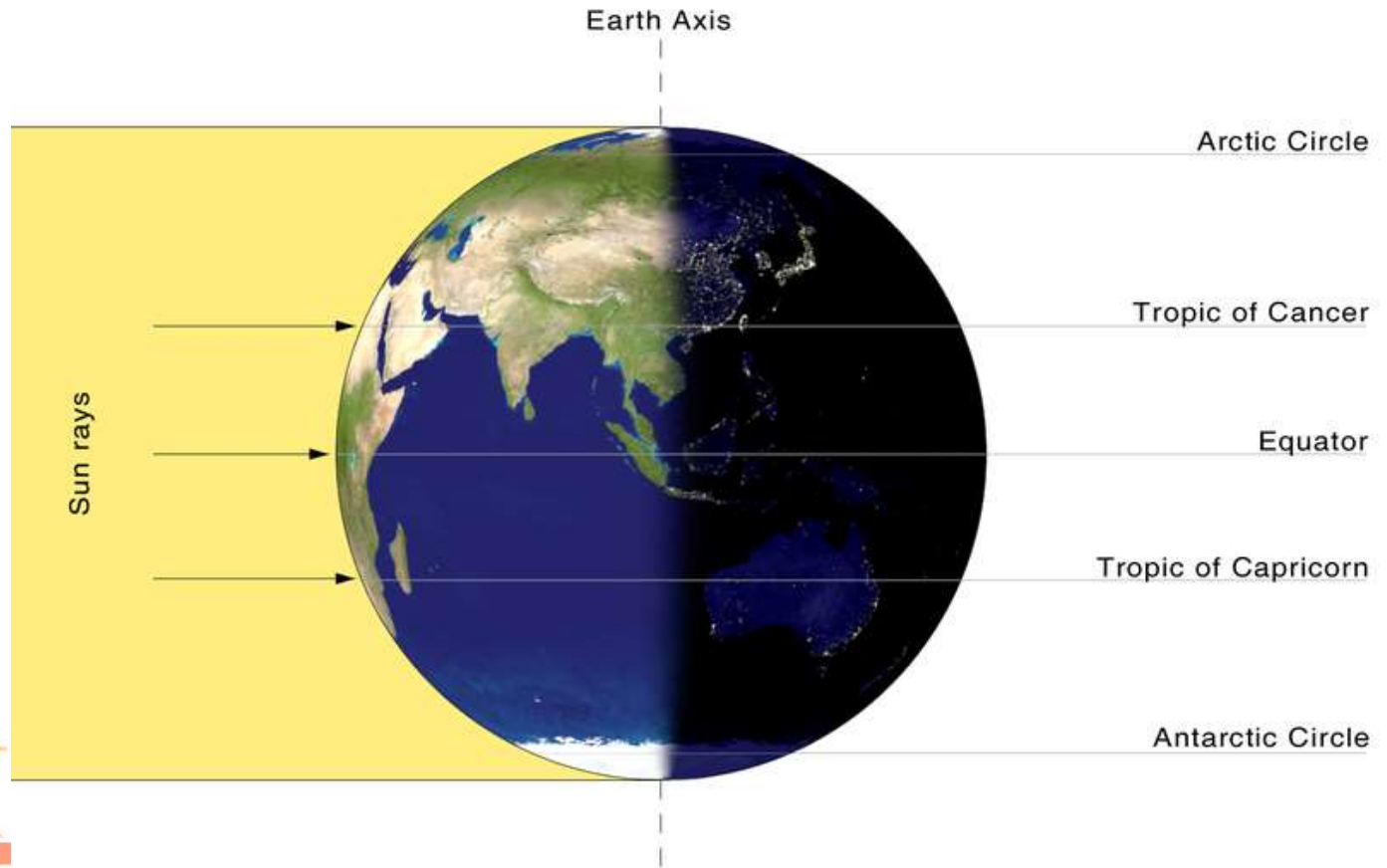
# Day and Night

As the earth rotates on its axis, half of the earth faces the sun and half of the earth faces away from the sun. The half of the Earth that faces the sun will experience day while the half of the Earth that faces away from the sun will experience night.





# Image of Day and Night



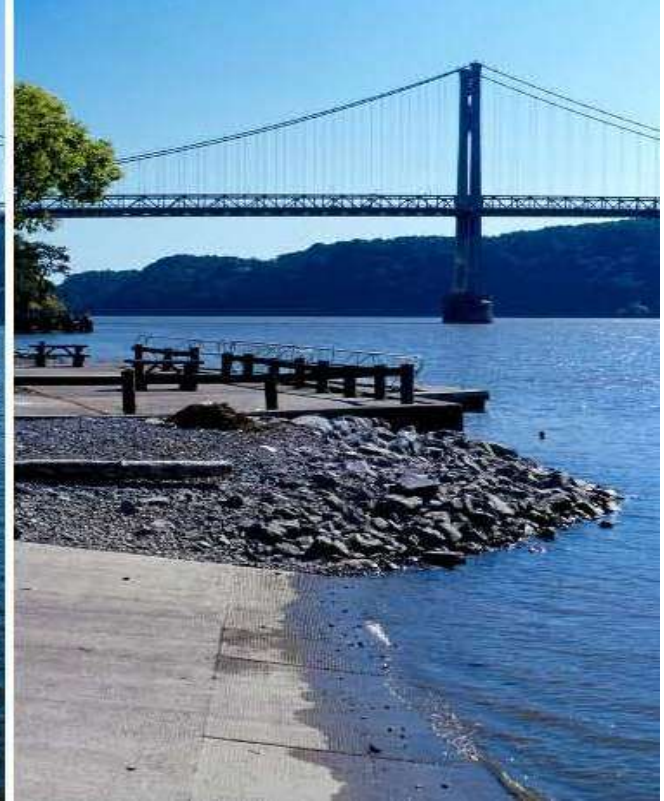
The half of the earth that is facing the sun rays will experience day while the half of the sun that is away from the sun rays will experience night.

# High and Low Tide

High and low tide is a result of the gravitational pull between the sun and the moon. When the earth rotates, the sun and the moon pulls it, however, one of the force is usually stronger than the other. Hence, we will experience high and low tide.



# Image of High and Low Tide



High Tide

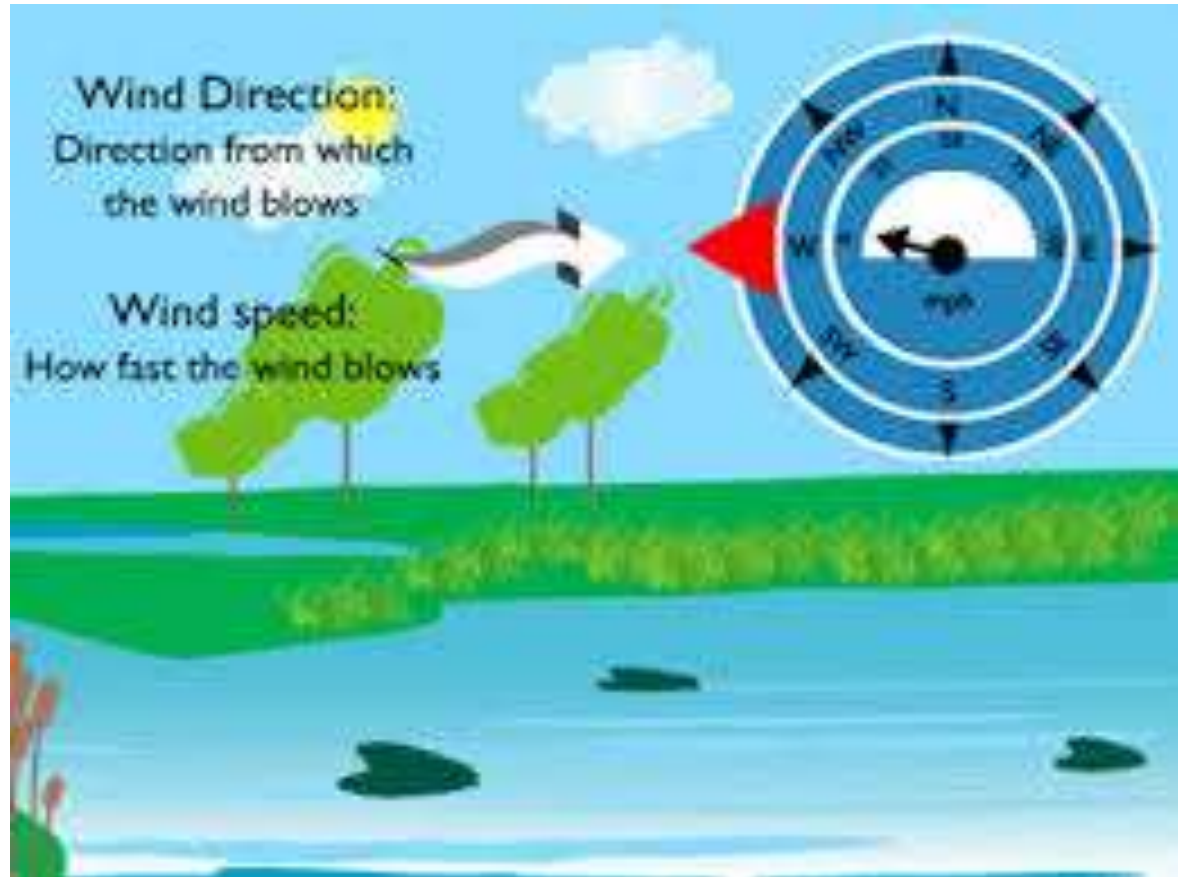
Low Tide

# Windspeed and Direction

Wind on the earth comes from north, south, east and west direction. As the earth rotates on its axis, different places will get stronger surge of wind as a result of the speed of the rotation.



# Image of Windspeed and Direction



Windspeed and Direction are how fast the air is moving and from which direction.

# Revolution



# Definition of Revolution

Revolution is the movement of the earth around the sun, this last for 365 and  $\frac{1}{4}$  days. Earth revolves around the sun in a slightly eccentric elliptical orbit once a year. The speed of earth's revolution is about 18 miles per hour.



# The Effects of Revolution on the Earth





# The Four Seasons



# Summer



Summer Solstice marks the beginning of summer on June 21/22. June 21 is the longest day. When it is summer in the northern hemisphere it will be winter in the southern hemisphere and the sun is directly over the tropic of cancer.



# Winter



Winter Solstice marks the beginning of winter on December 21/22. December 21 is the shortest day.



# Winter



When it is winter in the northern hemisphere it will be summer in the southern hemisphere and the sun is directly over the tropic of capricorn.



# Spring



Spring Equinox marks the beginning of spring on March 20/21. When it is spring in the northern hemisphere it will be autumn in the southern hemisphere and the sun is directly over the equator.



# Spring

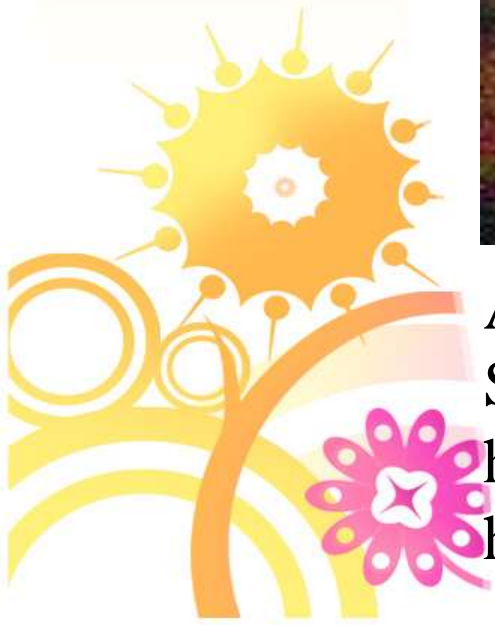
Ohh, I just love  
Spring. The  
flowers are  
blooming and the  
air smell so  
fresh.



# Autumn



Autumn Equinox marks the beginning of autumn on September 22/23. When it is autumn in the northern hemisphere it will be spring in the southern hemisphere and the sun is directly over equator.



# Varying Length of Day and Night

The effects of revolution causes varying length of day and night. In December the sun is directly over the tropic of capricorn, therefore, there will be shorter days and longer night. In June, the sun is directly over the tropic of cancer, therefore, there will be longer days and shorter nights.





# Changes in the Altitude of the Midday Sun

The earth's revolution round the sun with its axis inclined at  $66\frac{1}{2}$  degree to the plane of earth's orbit changes the apparent altitude of the midday sun.



**The End**

