


Earth and Space Review – Applied Science and Technology (AST)

This summary provides a quick overview of all the concepts about the Earth and Space that can be assessed during the AST ministry exam. To explore a topic in more detail, scan its QR code.

To see the summary of the Material World and the Technological World, scan the large QR code at the bottom left.

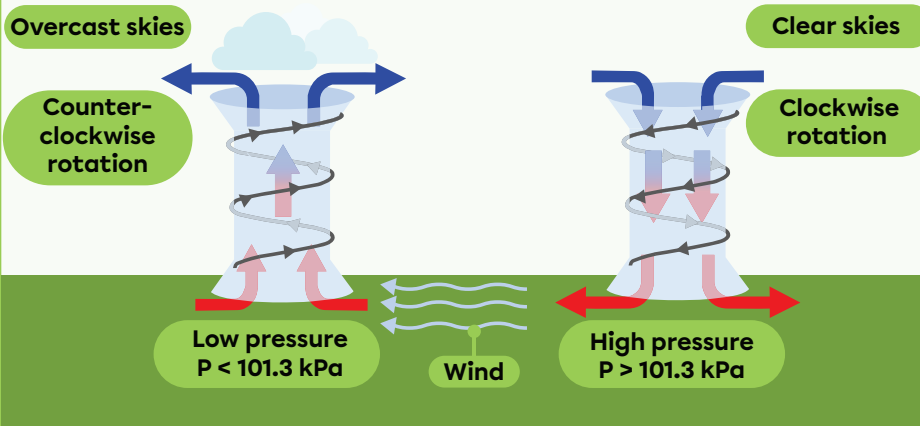


Cyclones and Anticyclones

Cyclones and anticyclones are meteorological systems linked to vertical movements of air masses. They influence a region's atmospheric conditions.


Cyclone formation: **a rising mass of warm air (less dense)** forms an area of low pressure on the ground.

Anticyclone formation: **a falling mass of cold (denser) air** forms an area of high pressure on the ground.



The wind moves from an area of high pressure to an area of low pressure.

Important! The directions of rotation indicated are valid for the Northern Hemisphere. They are reversed when occurring in the Southern Hemisphere.



Energy Resources

Resource	Origin	Renewable	GHG emissions
Biomass	Biosphere	Yes	Yes
Fossil fuels	Lithosphere	No	Yes
Uranium	Lithosphere	No	No
Geothermal	Lithosphere	Yes	No
Wind	Atmosphere	Yes	No
Hydroelectricity	Hydrosphere	Yes	No
Solar radiation	Space	Yes	No





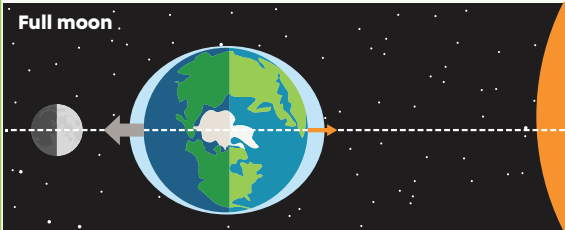
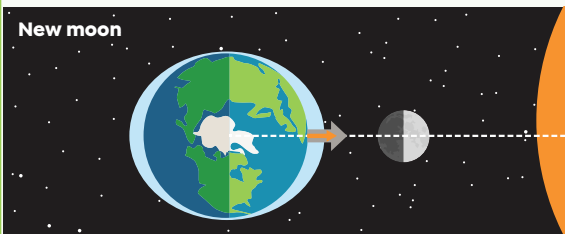
Tides

Tides are the daily change of water levels. One of the main causes is the effect of the gravitational forces exerted by the Moon and the Sun on the Earth.

Gravitational force: force of mutual attraction between two bodies.

Spring tides

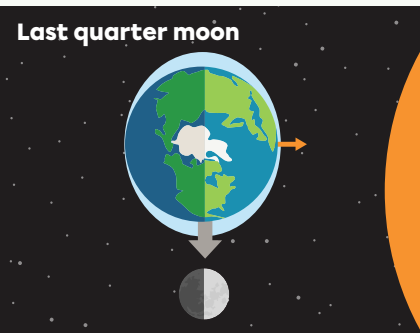
The gravitational forces exerted by the Moon and the Sun are aligned.



Caption → Attraction of the Moon → Attraction of the Sun

Neap tides

The gravitational forces exerted by the Moon and the Sun are perpendicular.



Important! Because of its proximity to the Earth, the Moon's gravitational pull is twice that of the Sun.



Watershed

A **watershed** or **catchment area** is a territory defined by boundaries called *watershed divides* that surround river and stream systems.

Here's the impact of a wastewater discharge on points A, B, and C.

