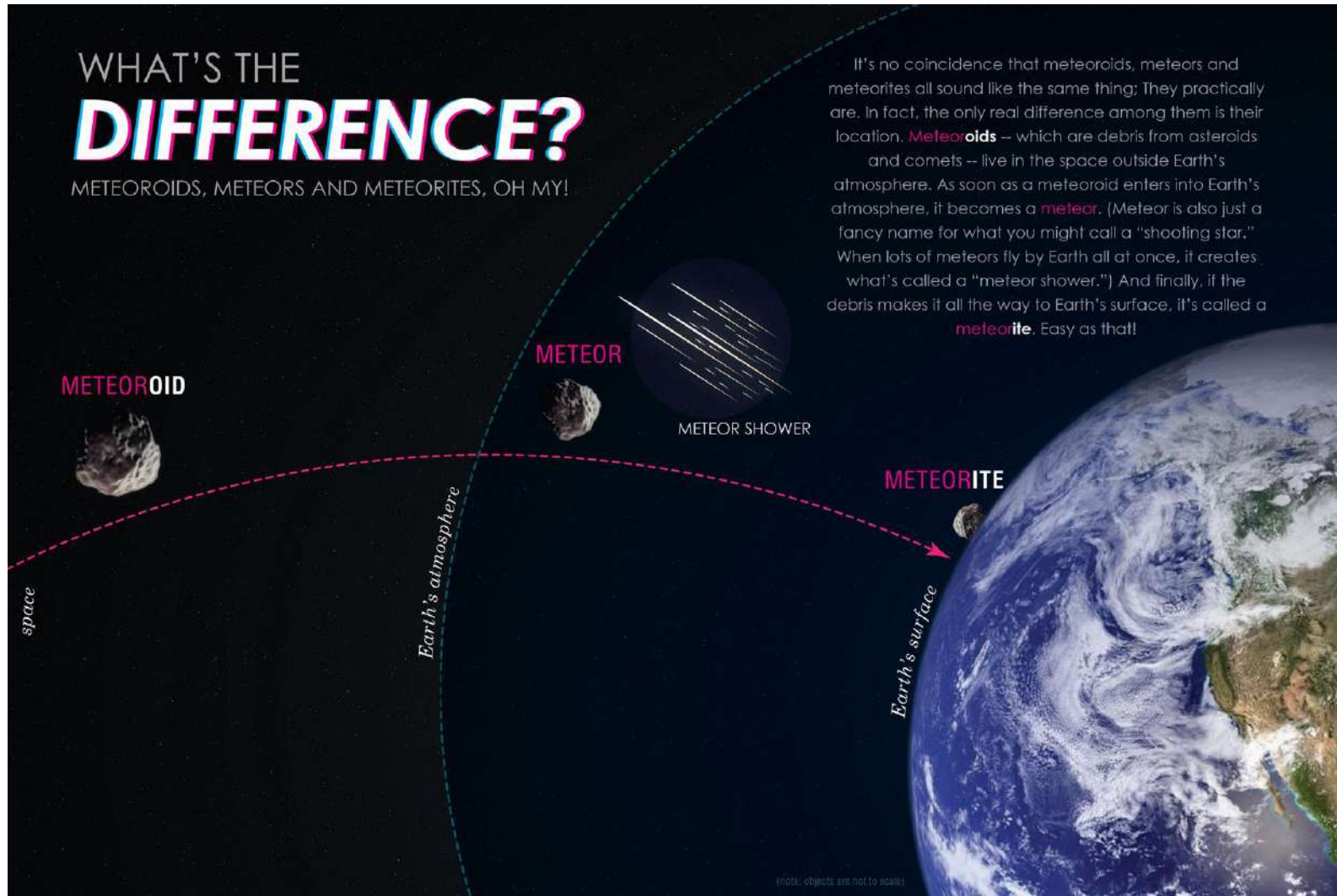


# 2<sup>nd</sup> Semester Vocabulary

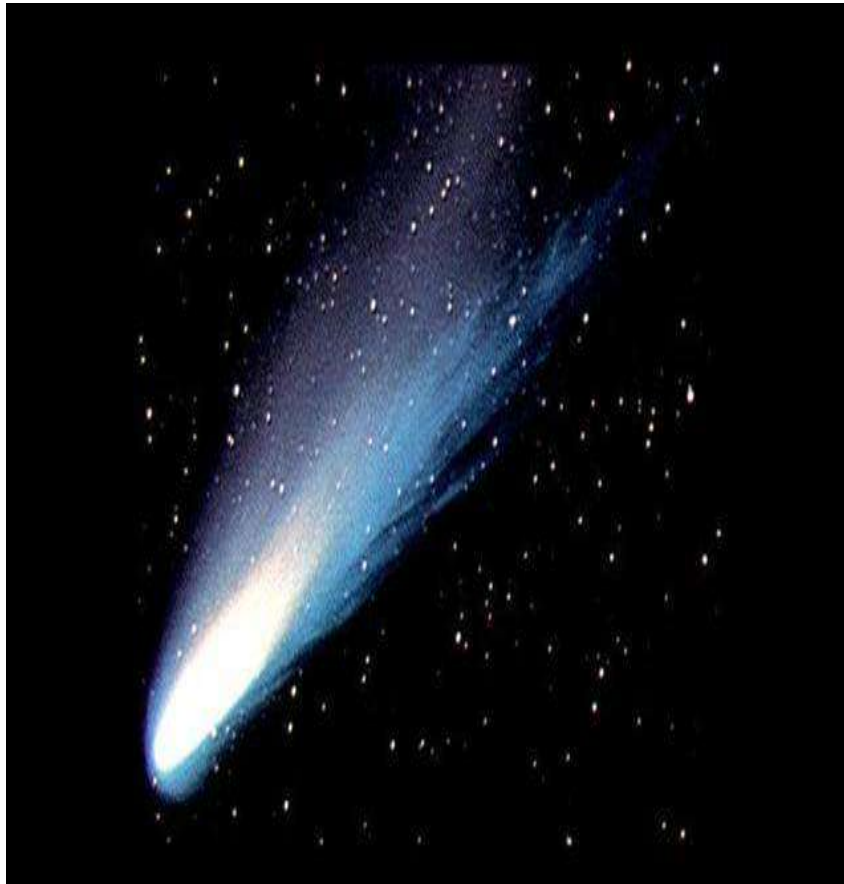
# 1. Meteor

A streak of light in the sky produced by the burning of a meteoroid in Earth's atmosphere.



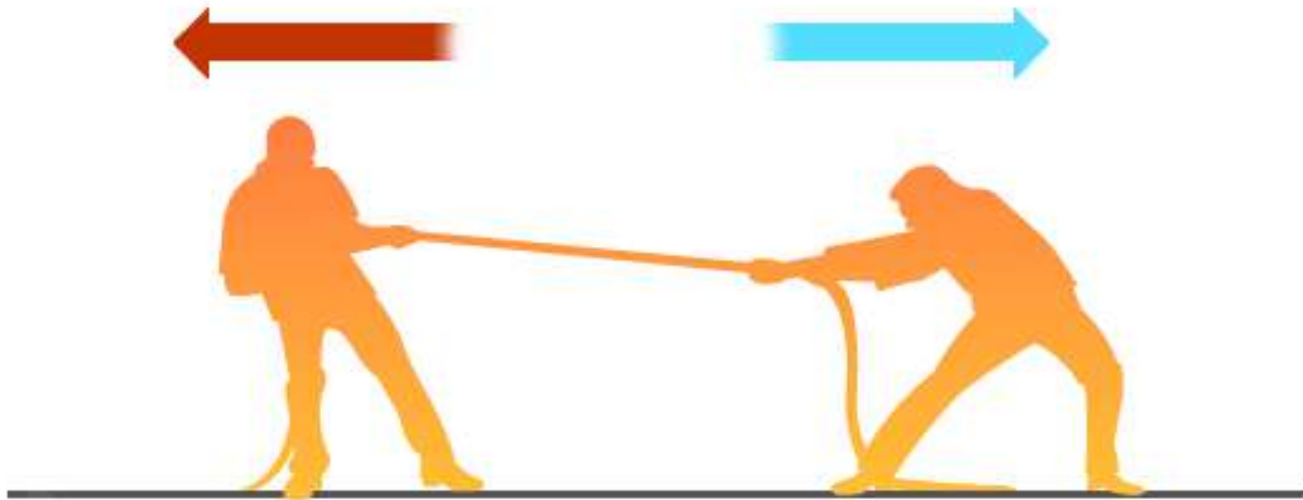
## 2. Comet

A loose collection of ice and dust that orbits the sun, typically in a long, narrow orbit.



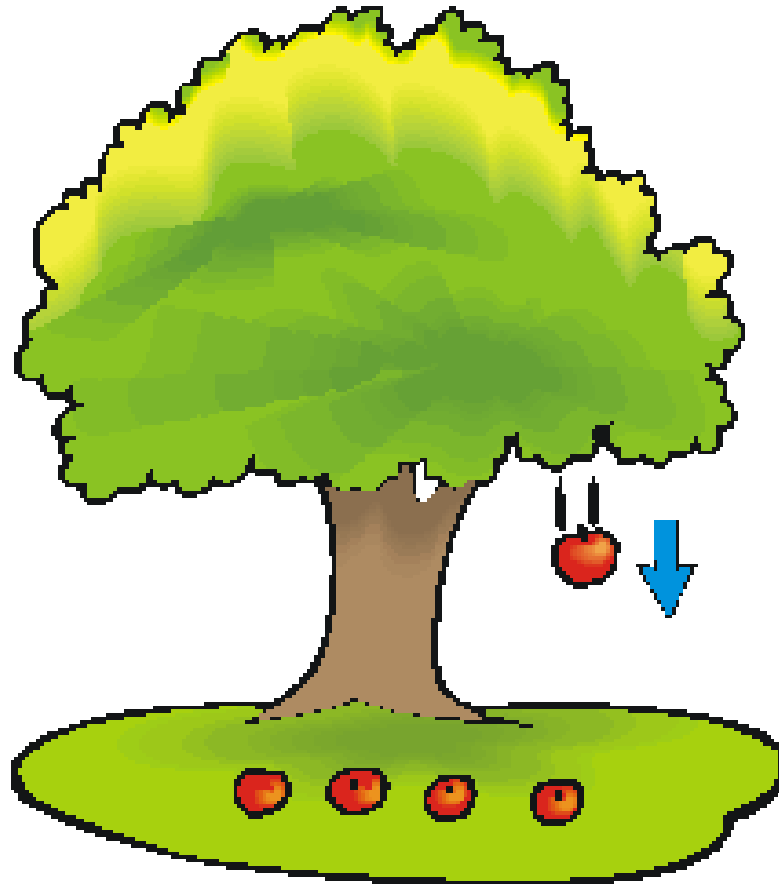
### 3. Force

A push or pull exerted on an object.



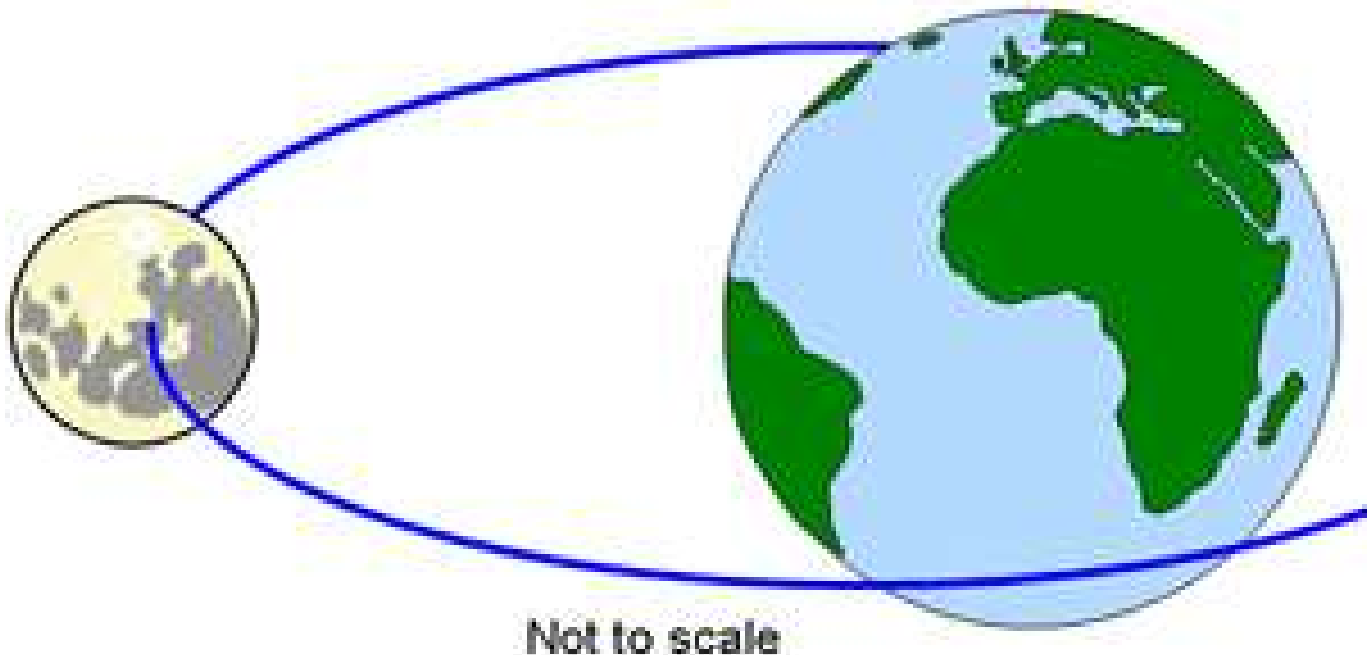
## 4. Gravity

The attractive force between objects; the force that moves objects downhill.



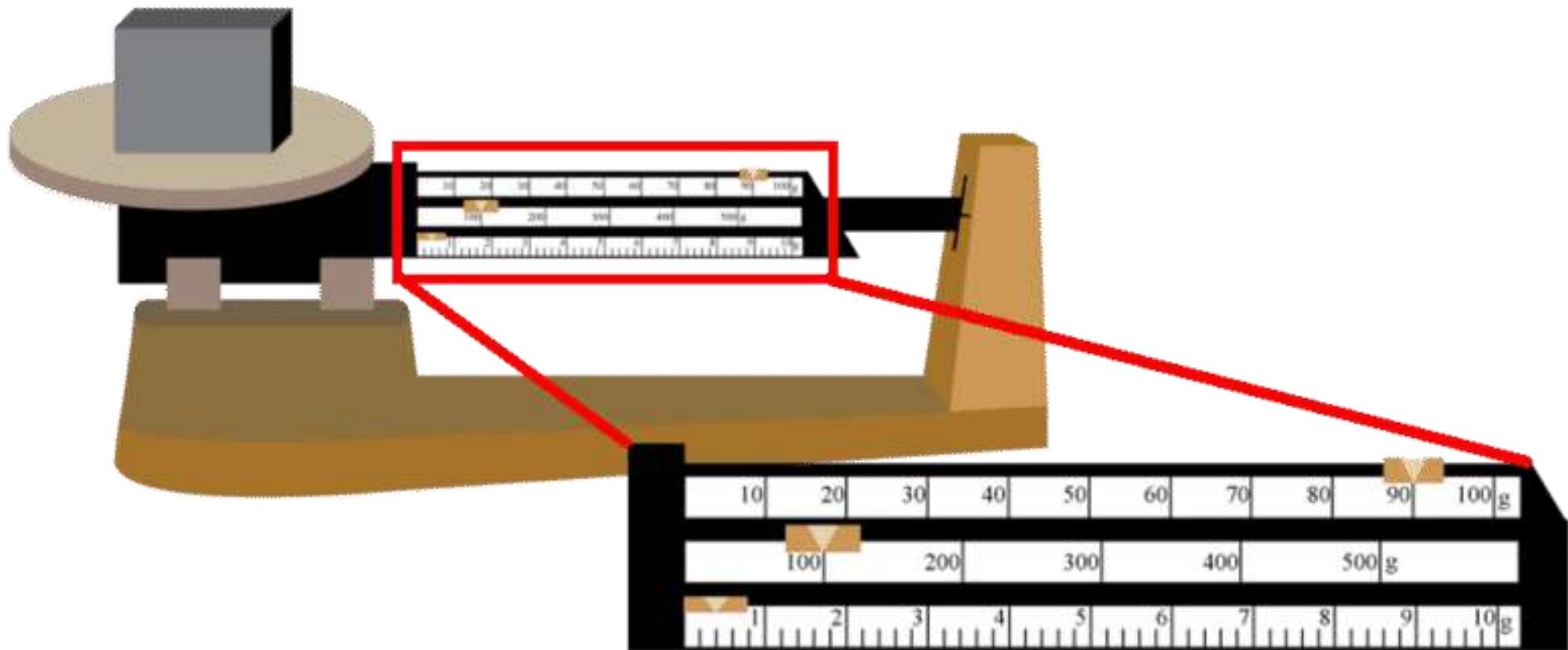
# 5. Law of Universal Gravitation

The scientific law that states that every object in the universe attracts every other object.



## 6. Mass

A measure of how much matter is in an object.

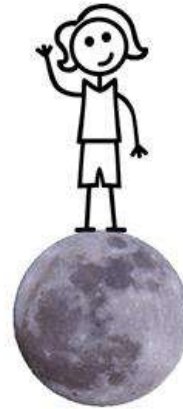


# 7. Weight

A measure of the force of gravity acting on an object.



My **WEIGHT** on  
Earth is around  
560N



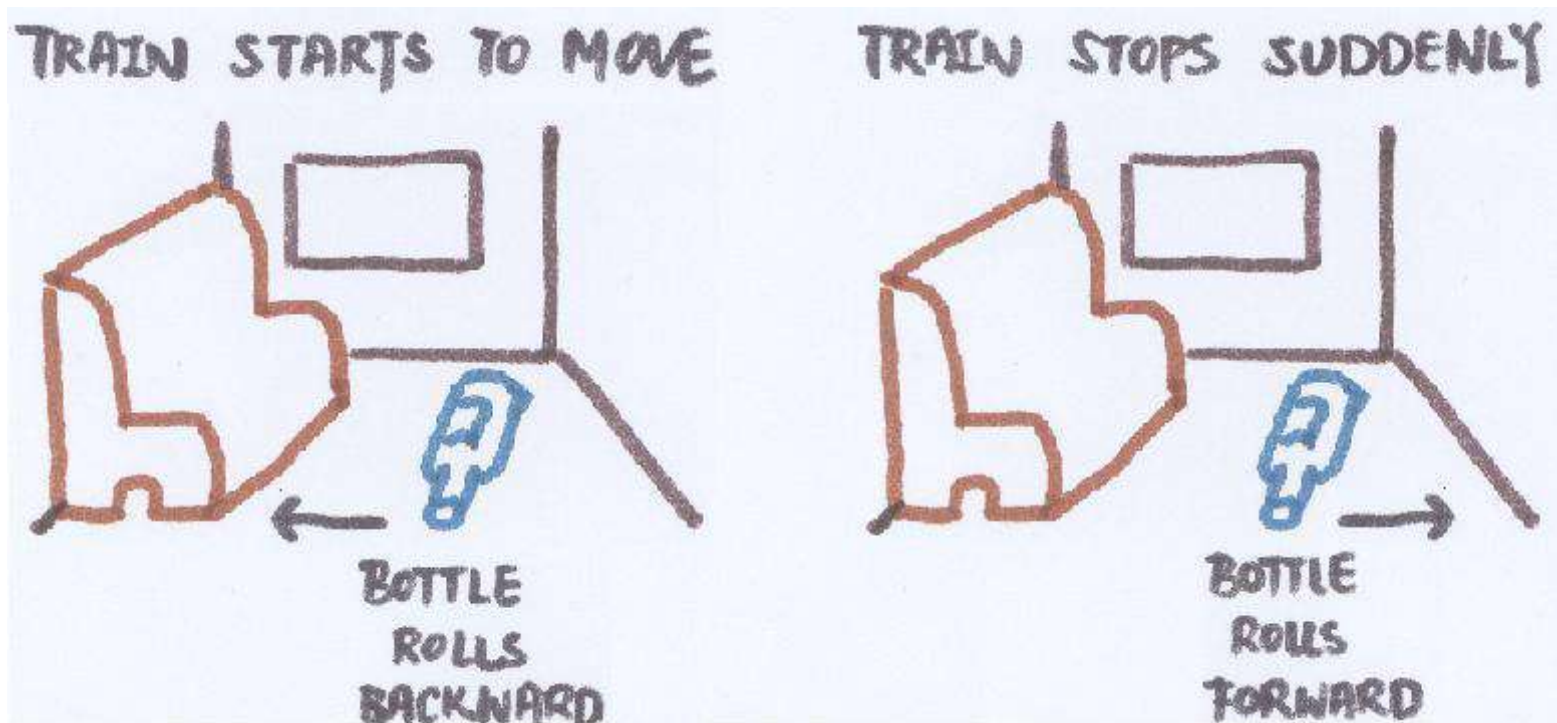
My **WEIGHT**  
on the moon  
is around  
90N



My **MASS** is  
always 56kg!!

## 8. Inertia

The tendency of an object to resist a change in motion.



# 9. Newton's First Law of Motion

The scientific law that states that an object at rest will stay at rest and an object in motion will stay in motion with a constant speed unless acted on by a force.

WITH NO OUTSIDE FORCES  
THIS OBJECT WILL  
NEVER MOVE

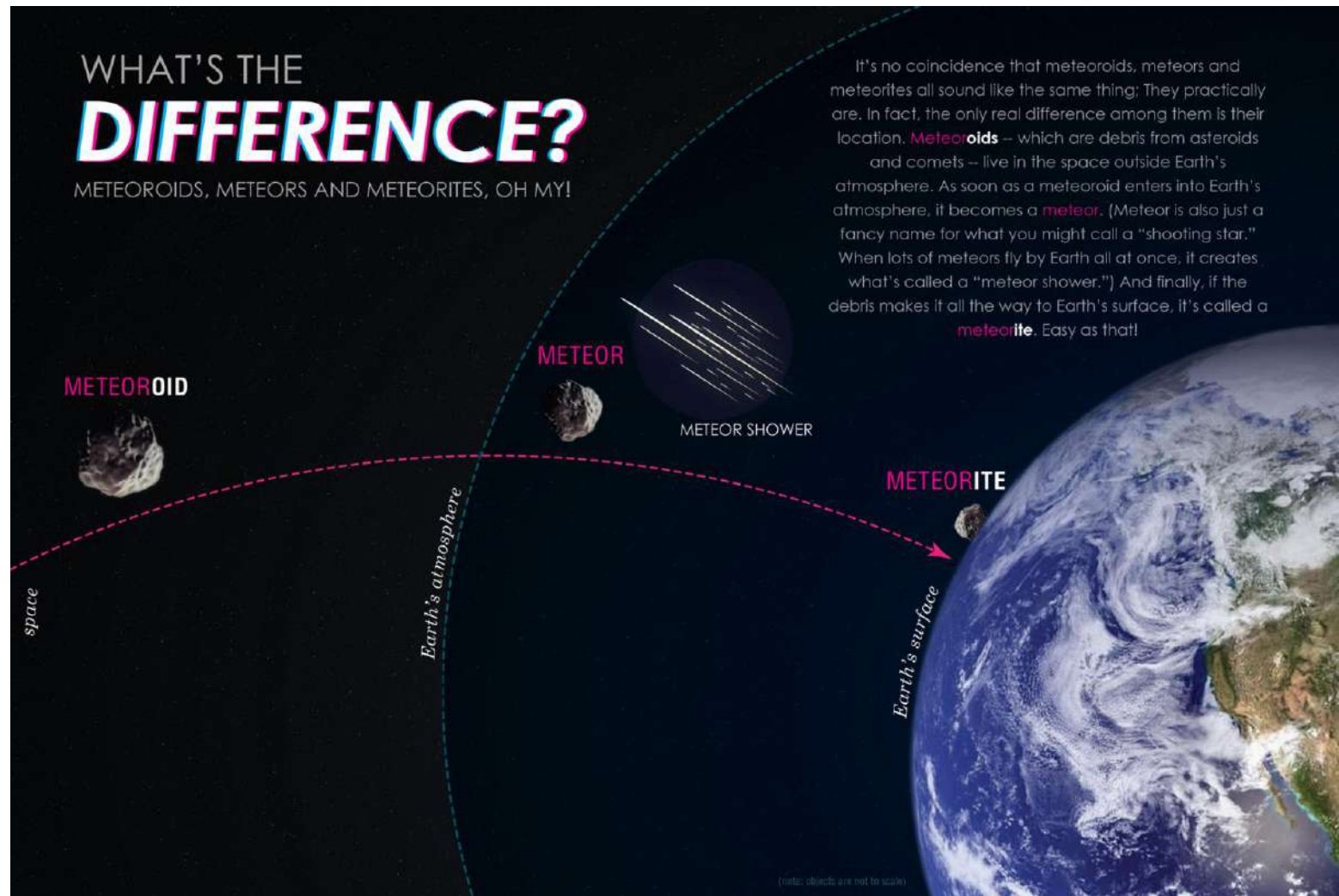


WITH NO OUTSIDE FORCES  
THIS OBJECT WILL  
NEVER STOP



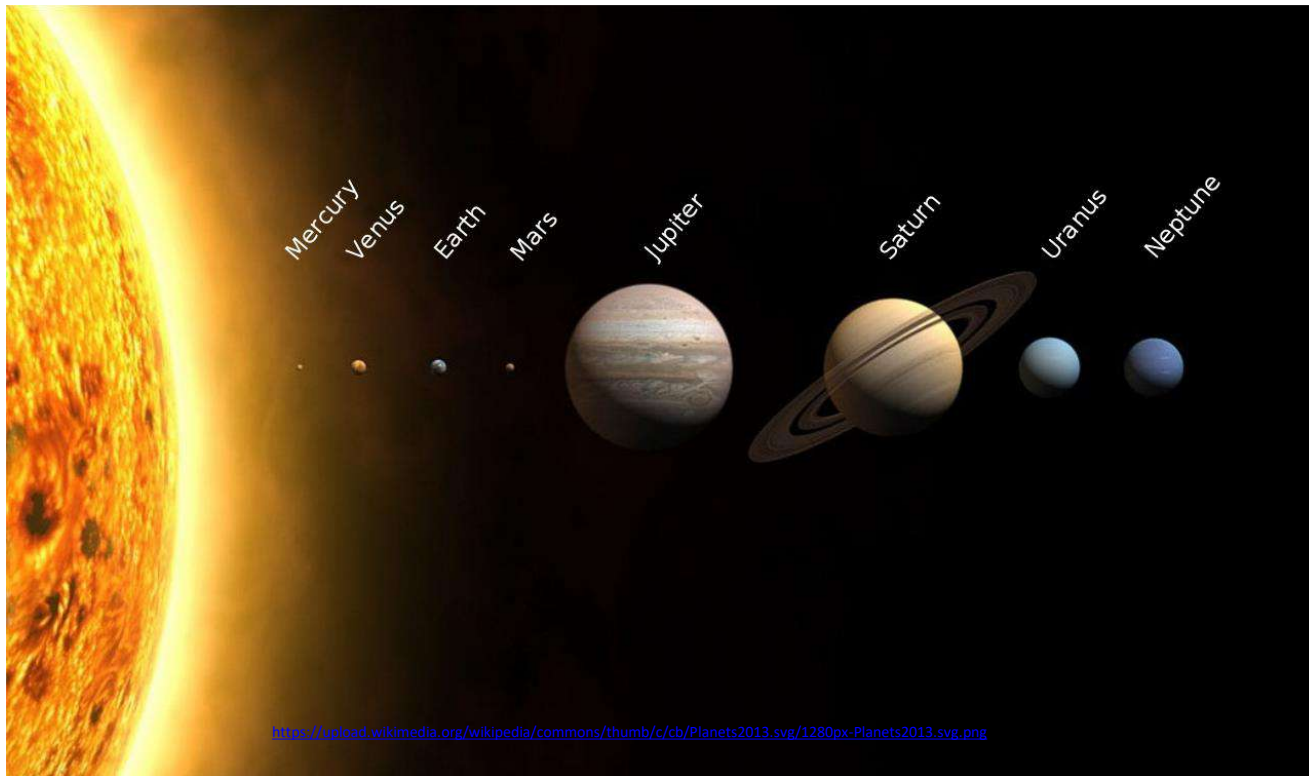
# 10. Meteoroid

A chunk of rock or dust in space, generally smaller than an asteroid.



# 11. Solar system

The system consisting of the sun and the planets and other objects that revolve around it.



# 12. Astronomical unit

A unit of distance equal to the average distance between Earth and the sun, about 150 million kilometers.



# 13. Planet

An object that orbits a star, is large enough to have become rounded by its own gravity, and has cleared the area of its orbit.



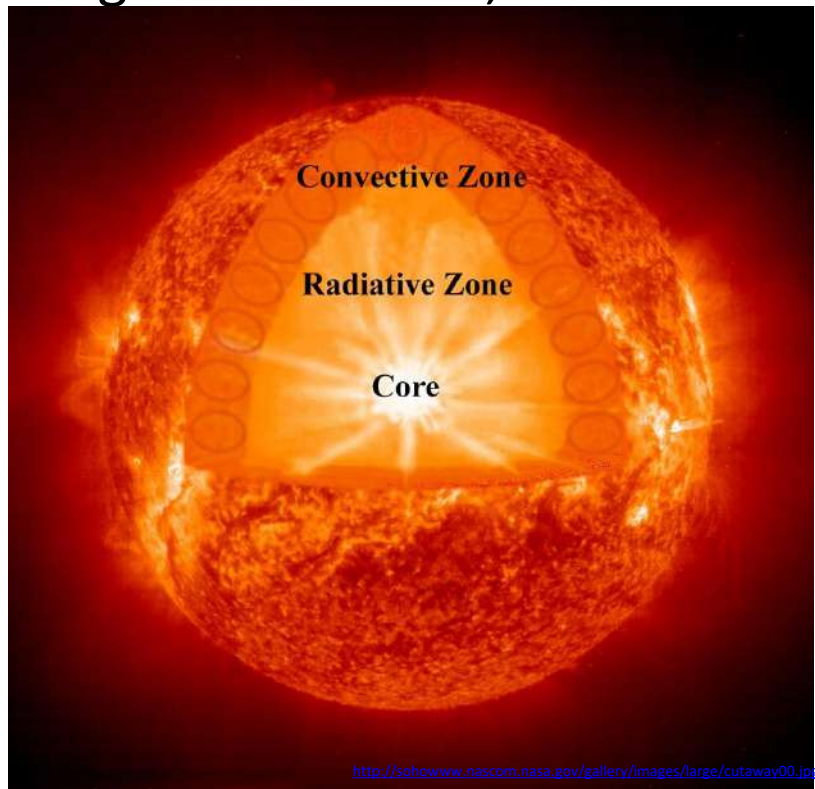
# 14. Dwarf Planet

An object that orbits the sun and is spherical, but has not cleared the area of its orbit.



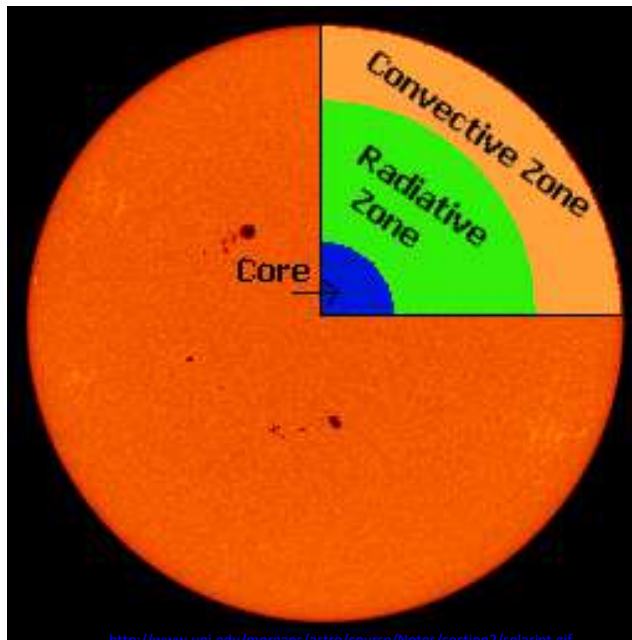
# 15. Core

The central region of the sun, where nuclear fusion takes place.



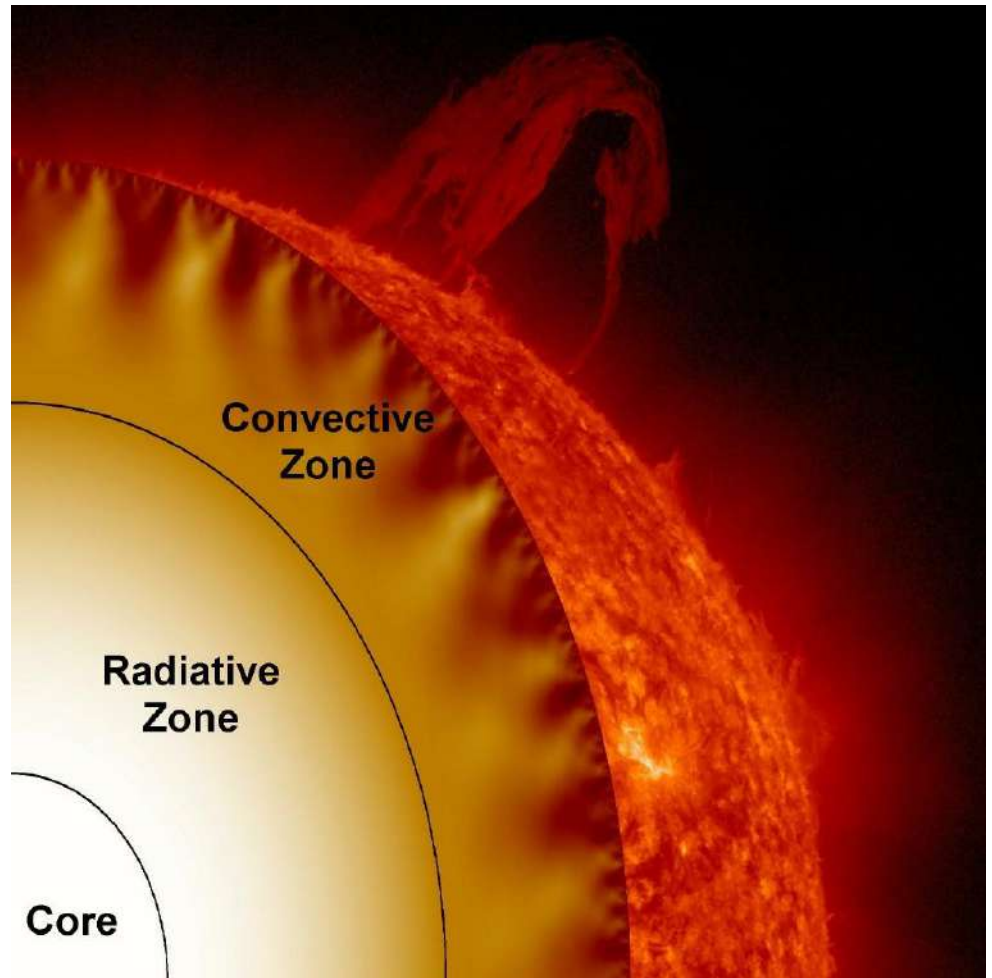
# 16. Radiation zone

A region of very tightly packed gas in the sun's interior where energy is transferred mainly in the form of electromagnetic radiation.



# 17. Convection zone

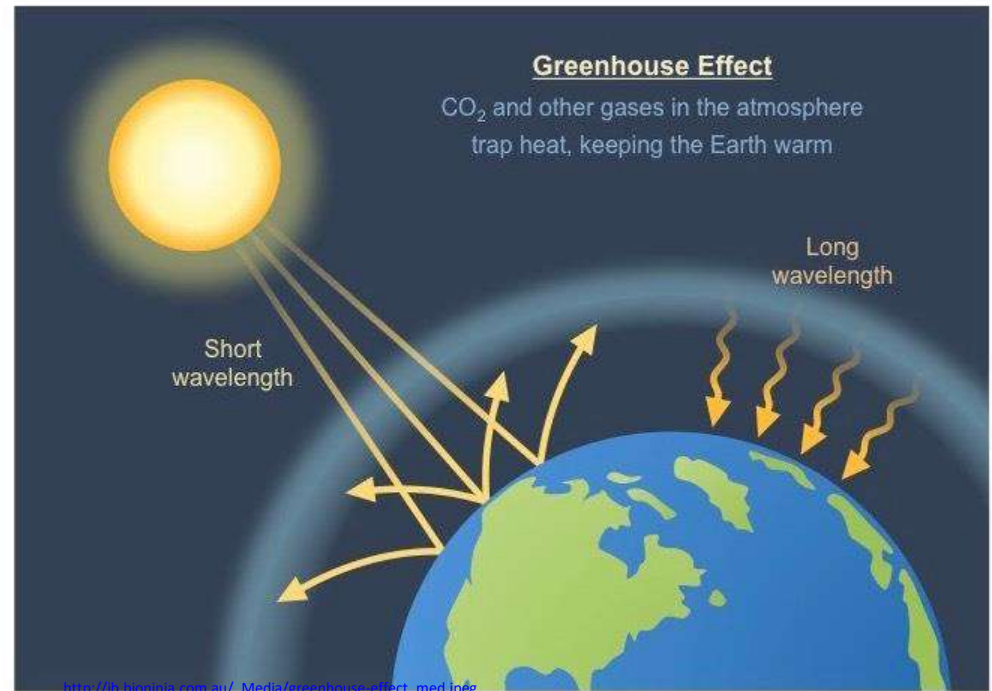
The outermost layer of the sun's interior.



<https://solarscience.msfc.nasa.gov/images/cutaway.jpg>

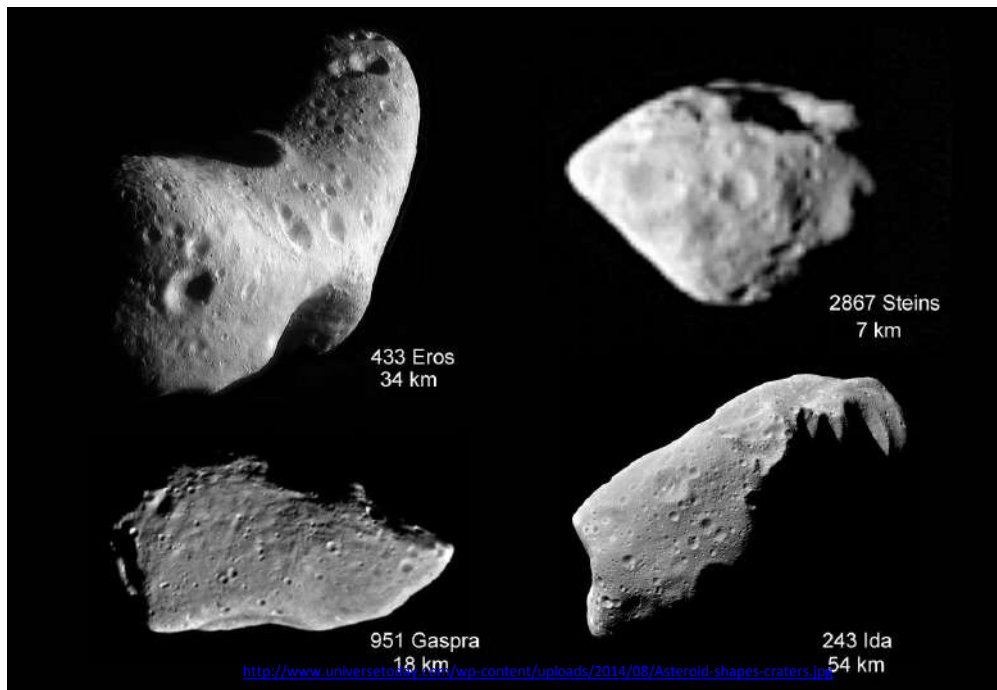
# 18. Greenhouse effect

The trapping of heat near a planet's surface by certain gases in the planet's atmosphere.



# 19. Asteroid

One of the rocky objects revolving around the sun that are too small and numerous to be considered planets.



# 20. Meteorite

A meteoroid that passes through the atmosphere and hits Earth's surface.



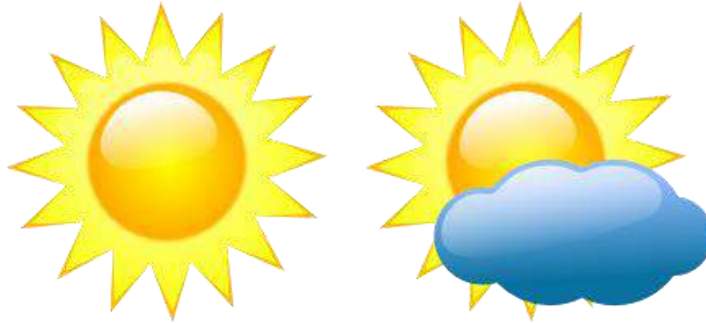
<https://www.meteorites-for-sale.com/images/mfs/black-lava.jpg>



[Russian Meteorite Video 2013](#)

# 21. Weather

The condition of Earth's atmosphere at a particular time and place.



## 22. Atmosphere

The relatively thin layer of gases that form Earth's outermost layer.



[http://news.mit.edu/sites/mit.edu.newsoffice/files/styles/news\\_article\\_image\\_top\\_slideshow/public/images/2016/MIT-RapidOxygen-1\\_0.jpg?itok=97VUlc](http://news.mit.edu/sites/mit.edu.newsoffice/files/styles/news_article_image_top_slideshow/public/images/2016/MIT-RapidOxygen-1_0.jpg?itok=97VUlc)

## 23. Barometer

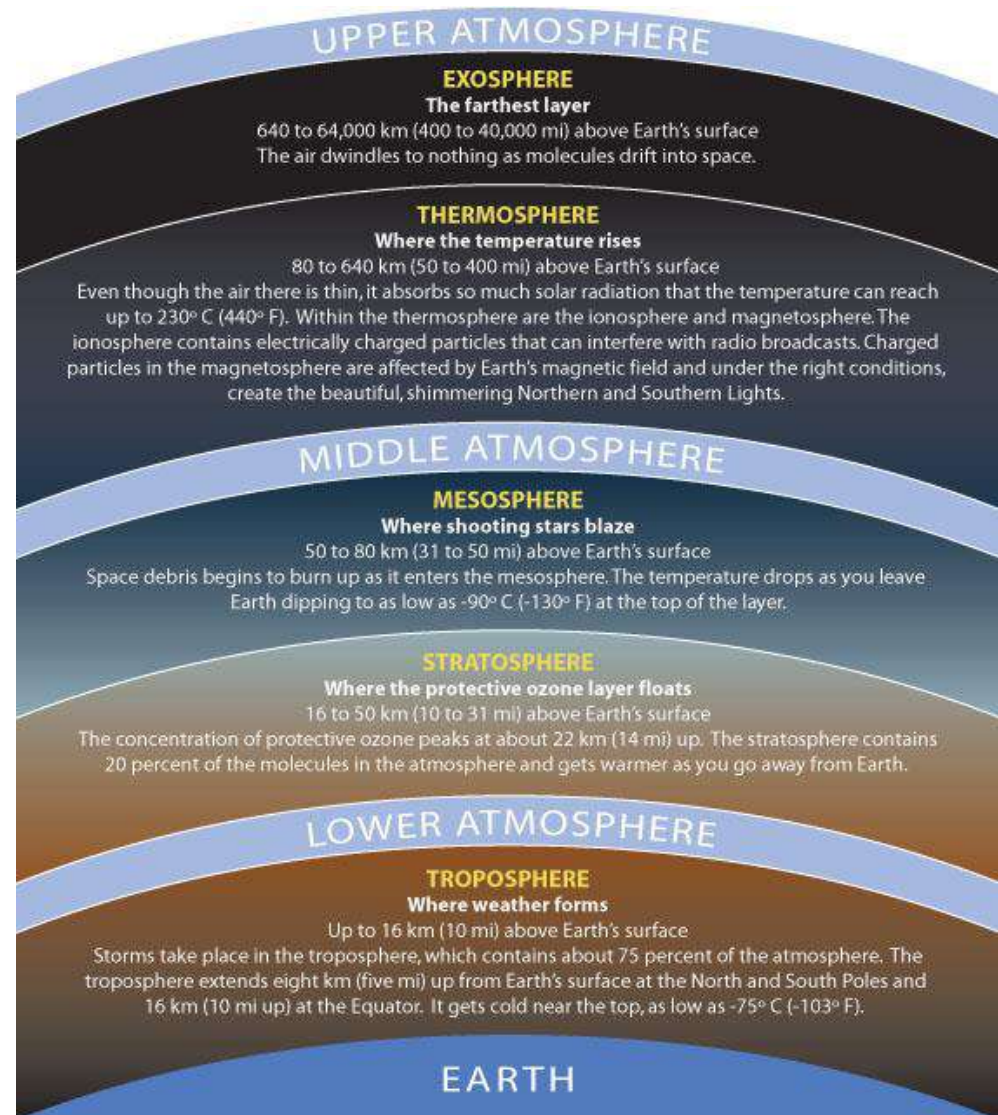
An instrument used to measure changes in air pressure.



<http://www.hach.com/asset-get.product.image.jsa?sku=2694500&type=P&size=L>

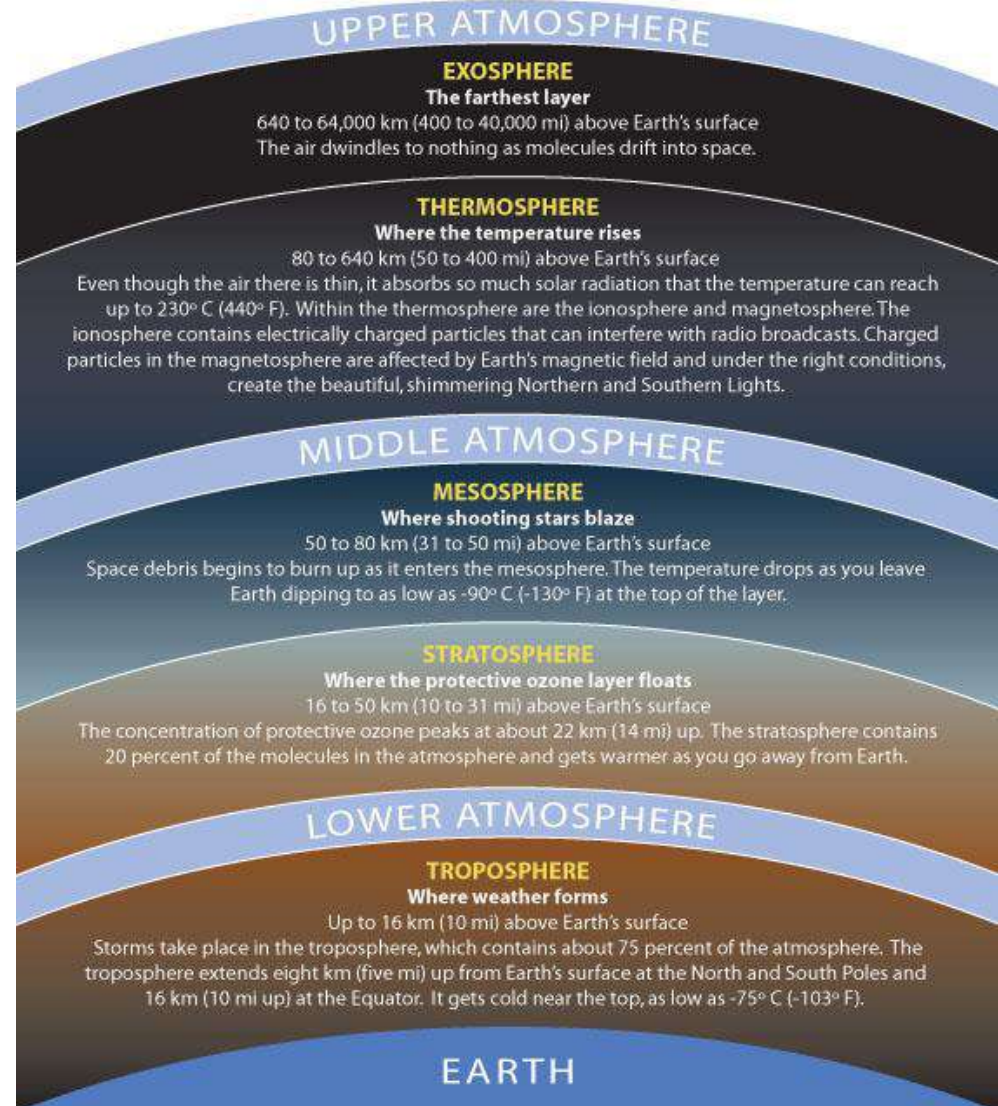
# 24. Troposphere

The lowest layer of Earth's atmosphere.



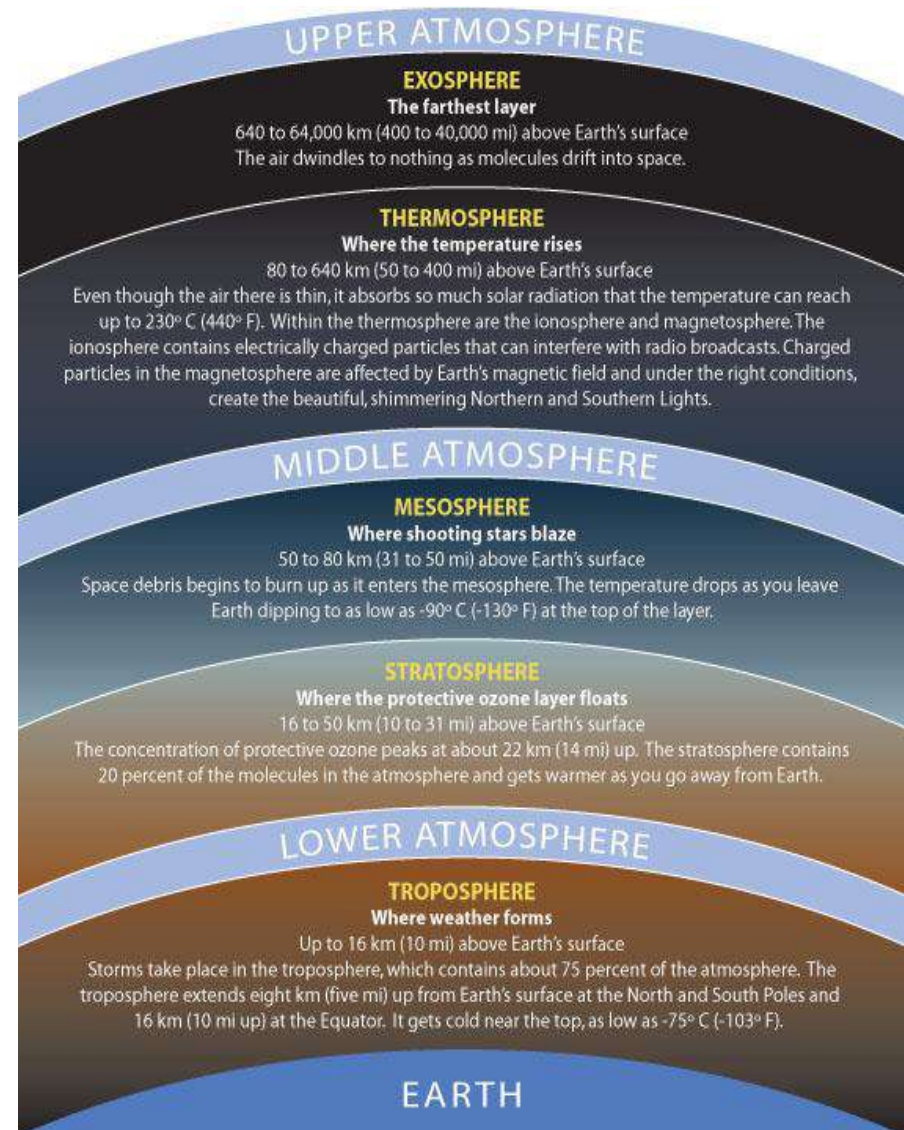
# 25. Stratosphere

The second-lowest layer of Earth's atmosphere.



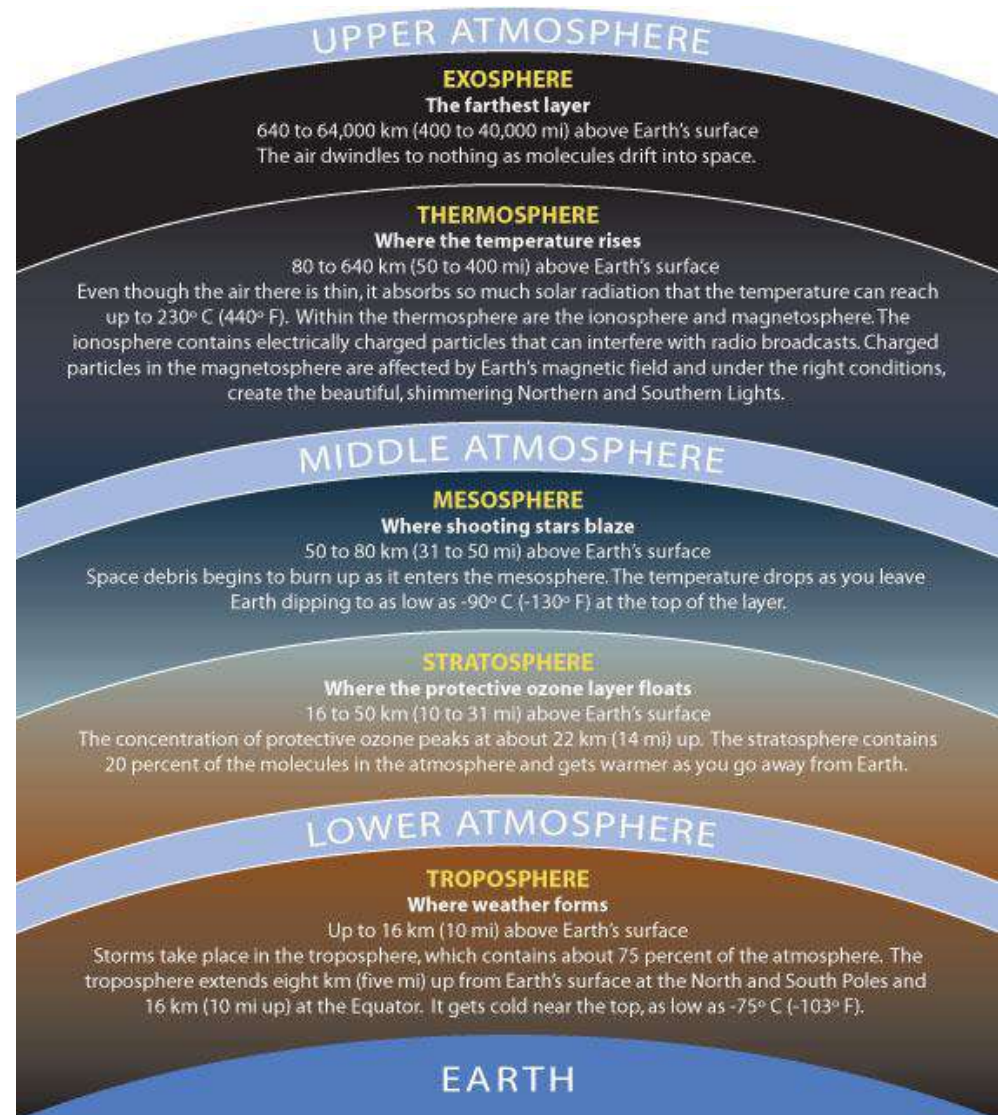
# 26. Mesosphere

The layer of Earth's atmosphere immediately above the stratosphere.



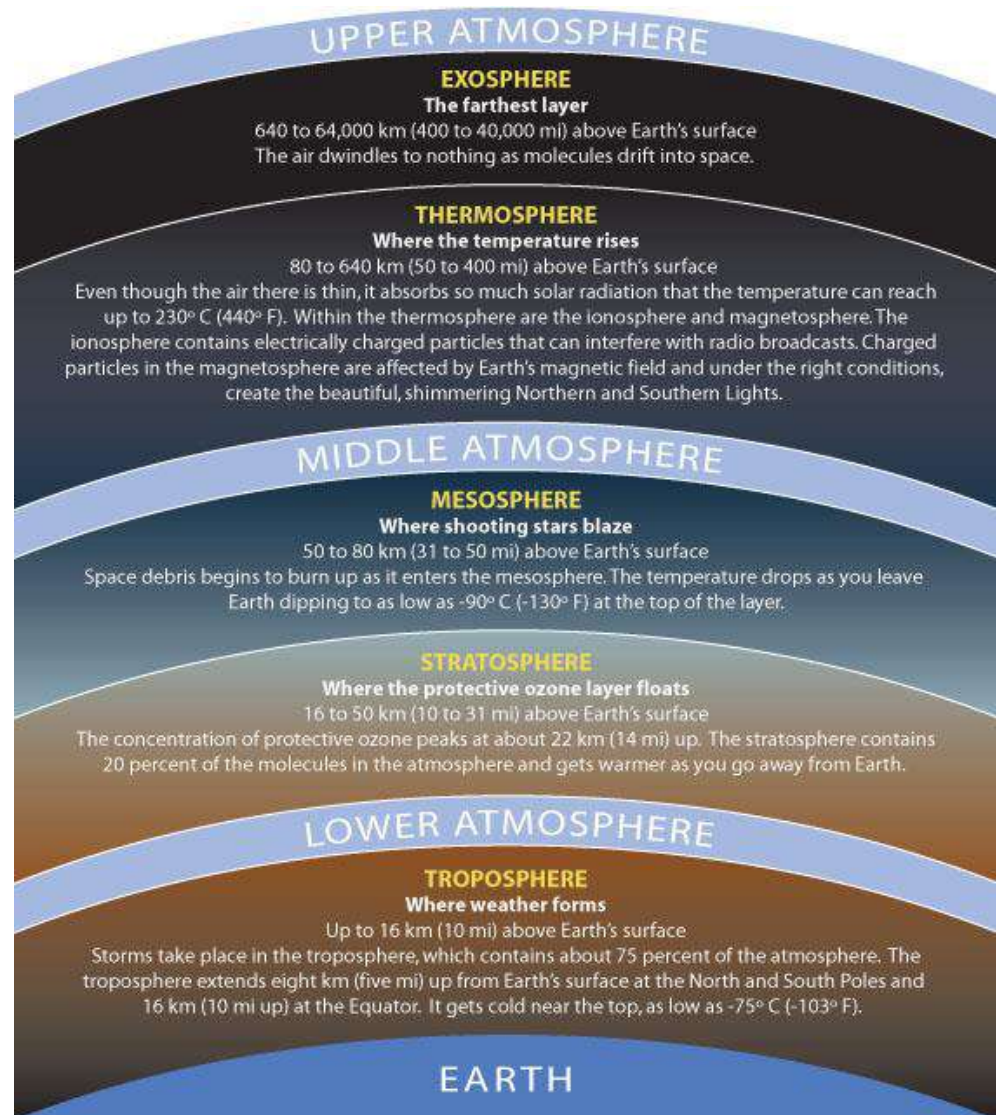
# 27. Thermosphere

The outermost layer of Earth's atmosphere.



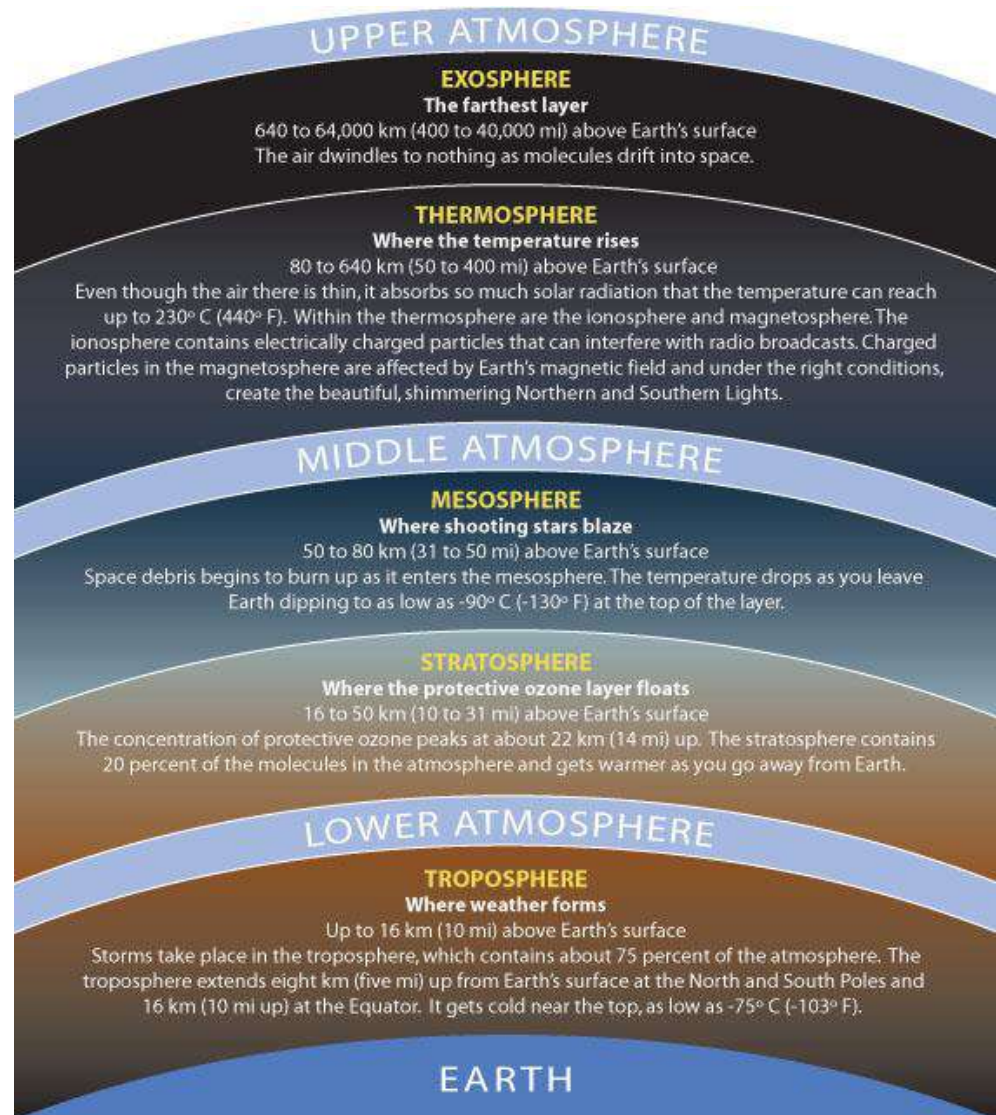
# 28. Ionosphere

The lower part of the thermosphere.



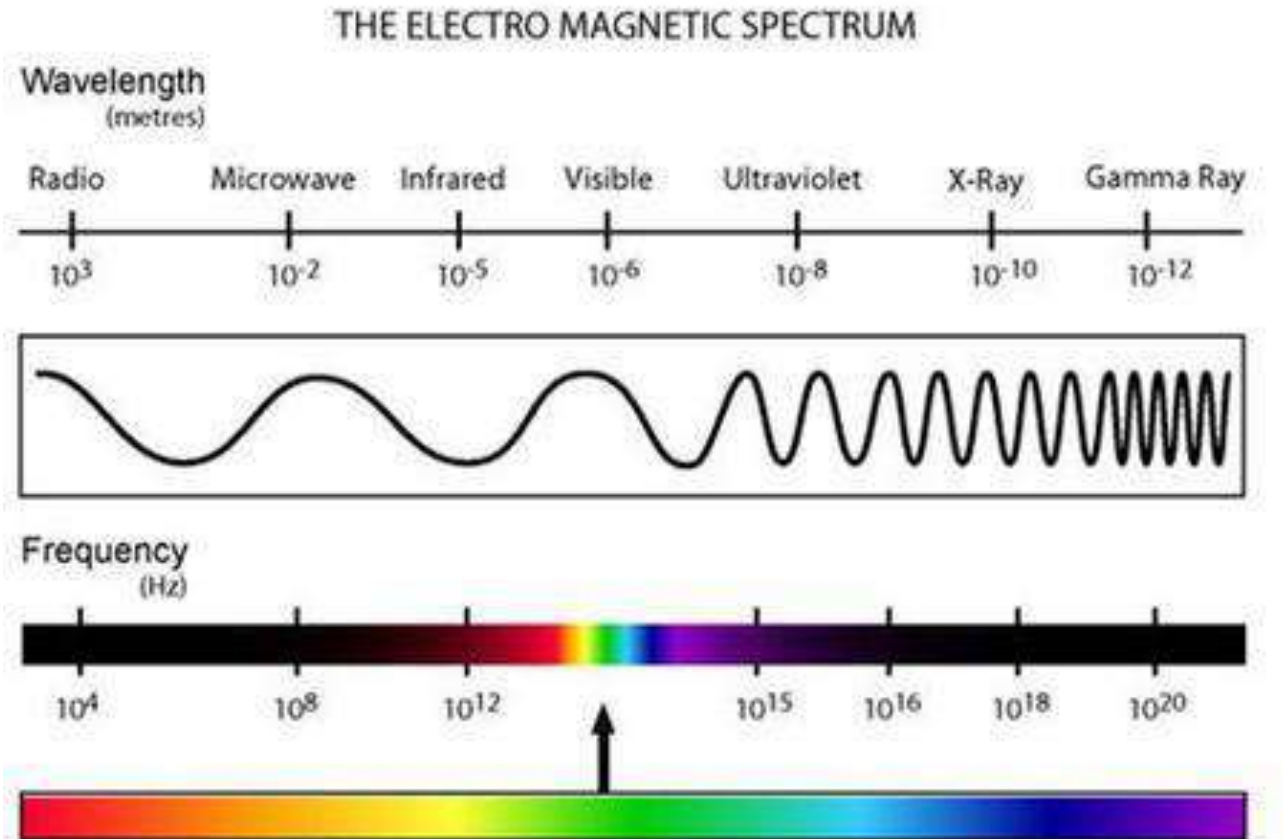
# 29. Exosphere

The outer layer of the thermosphere.



# 30. Electromagnetic waves

A wave that can transfer electric and magnetic energy through the vacuum of space.



# 31. Thermal energy

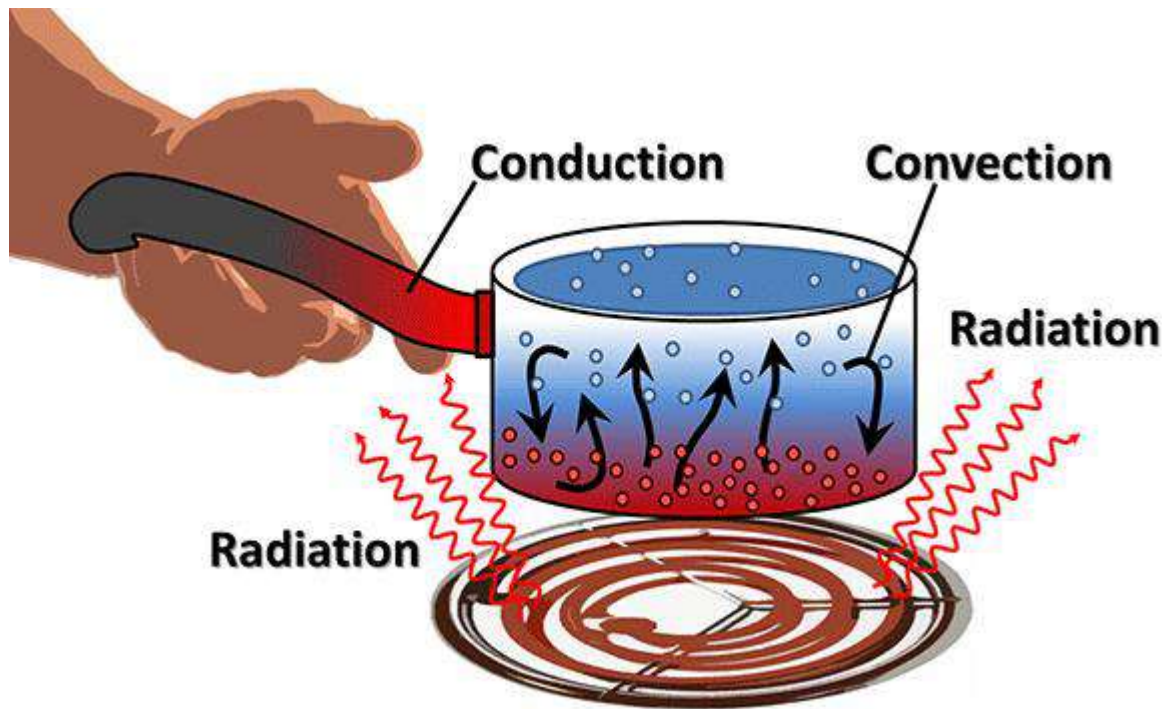
The total kinetic and potential energy of all the particles of an object.



<https://modernize.com/wp-content/uploads/2015/12/thermal-energy-how-it-works.jpg>

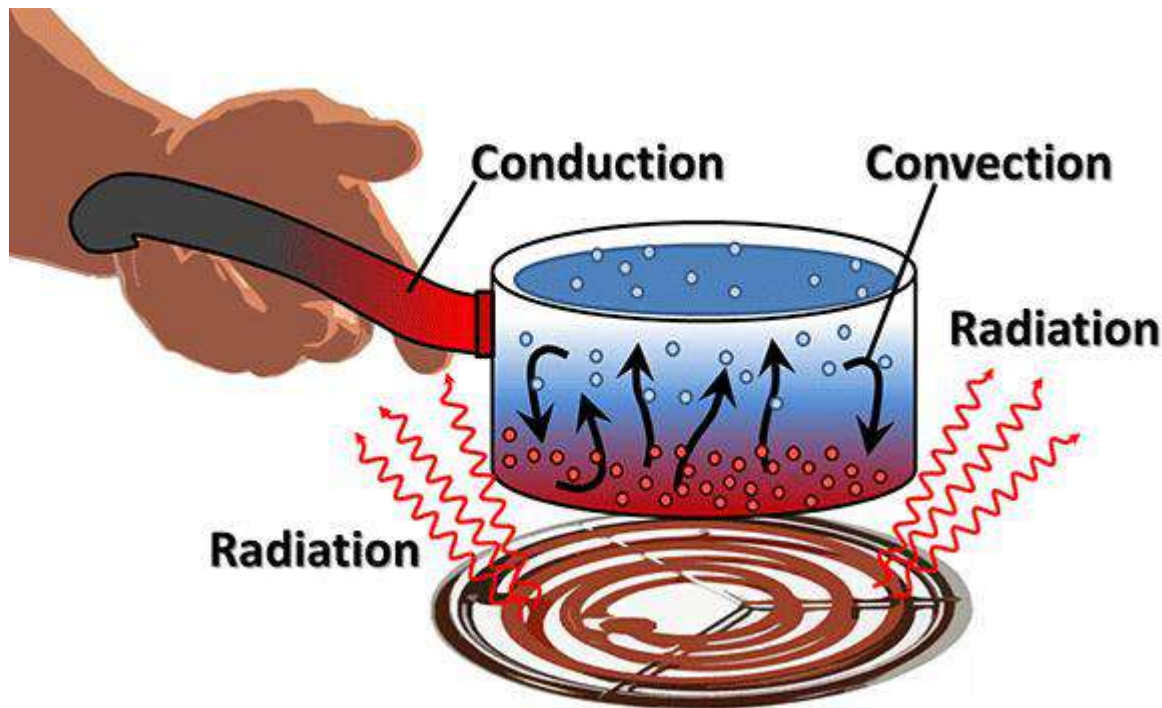
# 32. Convection

The transfer of thermal energy by the movement of fluid.



# 33. Conduction

The transfer of thermal energy from one particle of matter to another.



# 34. Wind

The horizontal movement of air from an area of high pressure to an area of lower pressure.



<https://www.mobil.com/industrial/~media/global/industrial/industry-solutions/industry-sectors/wind-energy/wind-turbines-sustainability-surface-xs.jpg>

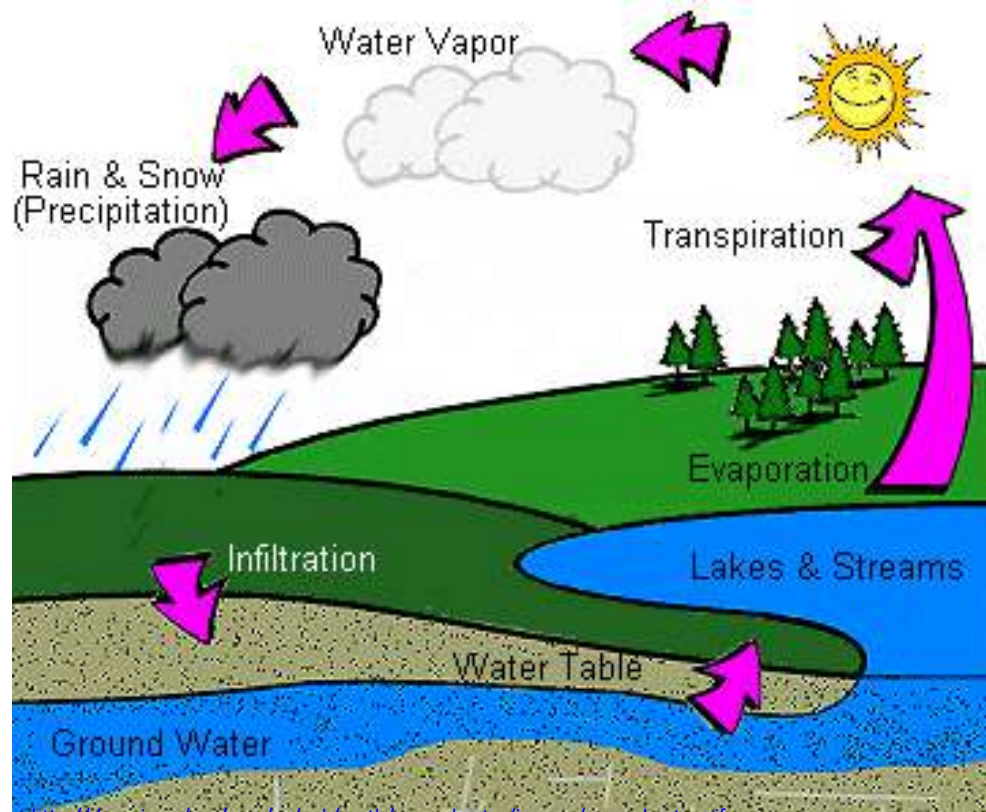
# 35. Anemometer

An instrument used to measure wind speed.



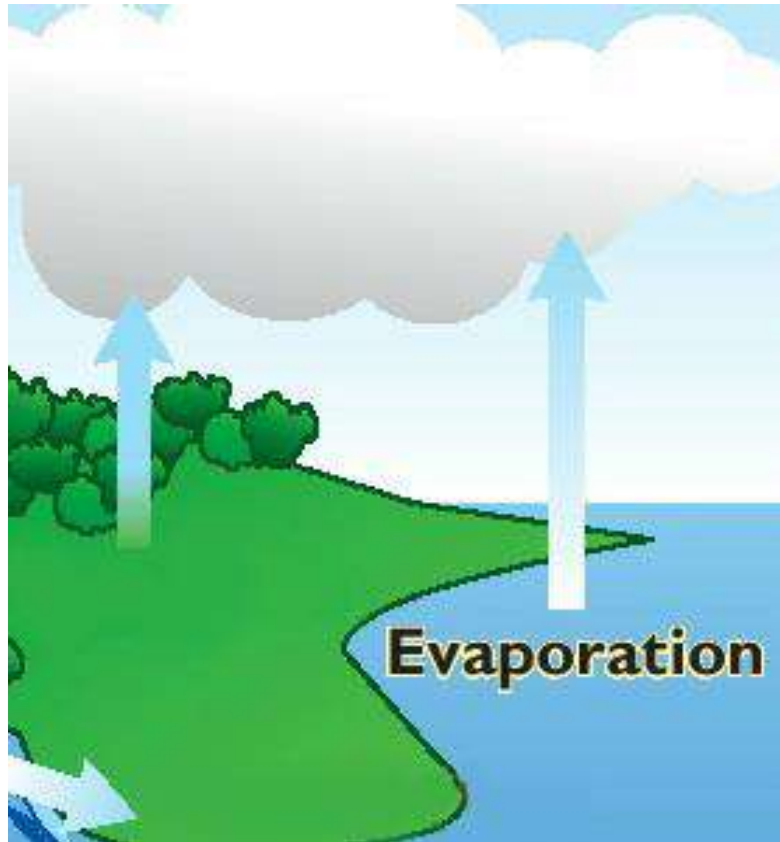
# 36. Water cycle

The continual movement of water among Earth's atmosphere, oceans, and land surface through evaporation, condensation, and precipitation.



# 37. Evaporation

The process by which molecules at the surface of a liquid absorb enough energy to change to a gas.



# 38. Condensation

The change in state from a gas to a liquid.



<http://viscorbel.com/wp-content/uploads/glass1.jpg>

# 39. Humidity

The amount of water vapor in a given volume of air.



[https://upload.wikimedia.org/wikipedia/commons/thumb/8/83/Cloud\\_forest\\_mount\\_kinabalu.jpg/220px-Cloud\\_forest\\_mount\\_kinabalu.jpg](https://upload.wikimedia.org/wikipedia/commons/thumb/8/83/Cloud_forest_mount_kinabalu.jpg/220px-Cloud_forest_mount_kinabalu.jpg)

# 40. Dew point

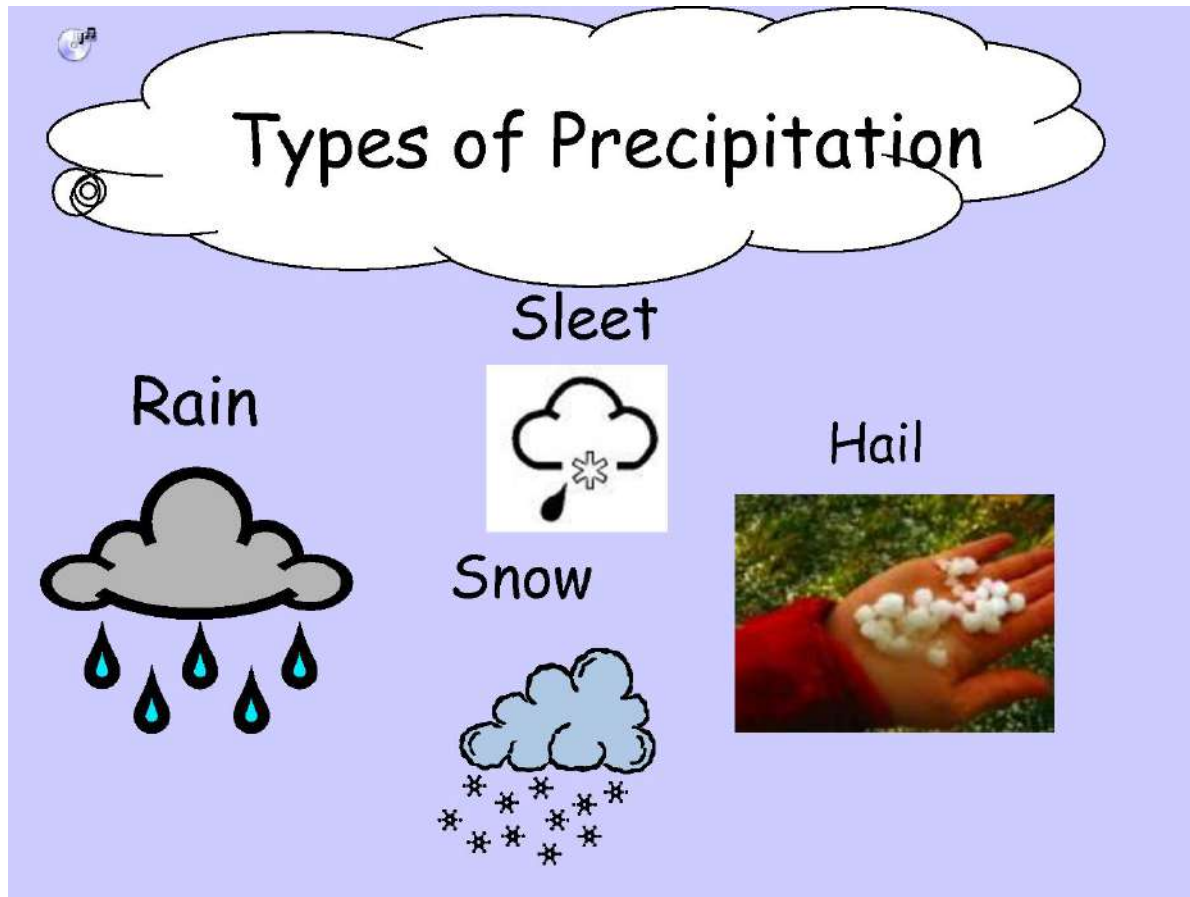
The temperature at which condensation begins.



<https://static1.squarespace.com/static/51bbeba5e4b0510af19f26f7/t/532e0900e4b0b8555ae4ac3a/1395525895762/dew+point.jpeg>

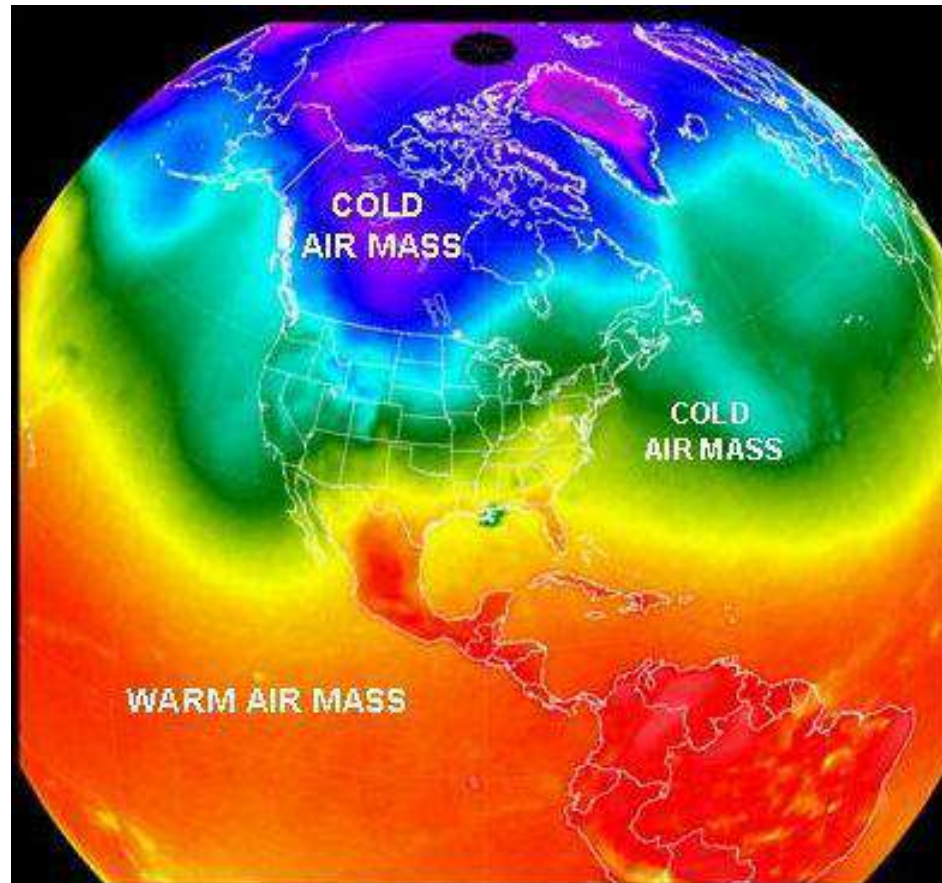
# 41. Precipitation

Any form of water that falls from clouds and reaches Earth's surface as rain, snow, sleet, or hail.



## 42. Air mass

A huge body of air that has similar temperature, humidity, and air pressure at any given height.



# 43. Tropical

A warm air mass that forms in the tropics and has low air pressure.



# 44. Polar

A cold air mass that forms north of 50° north latitude or south of 50 ° south latitude and has high air pressure.



# 45. Maritime

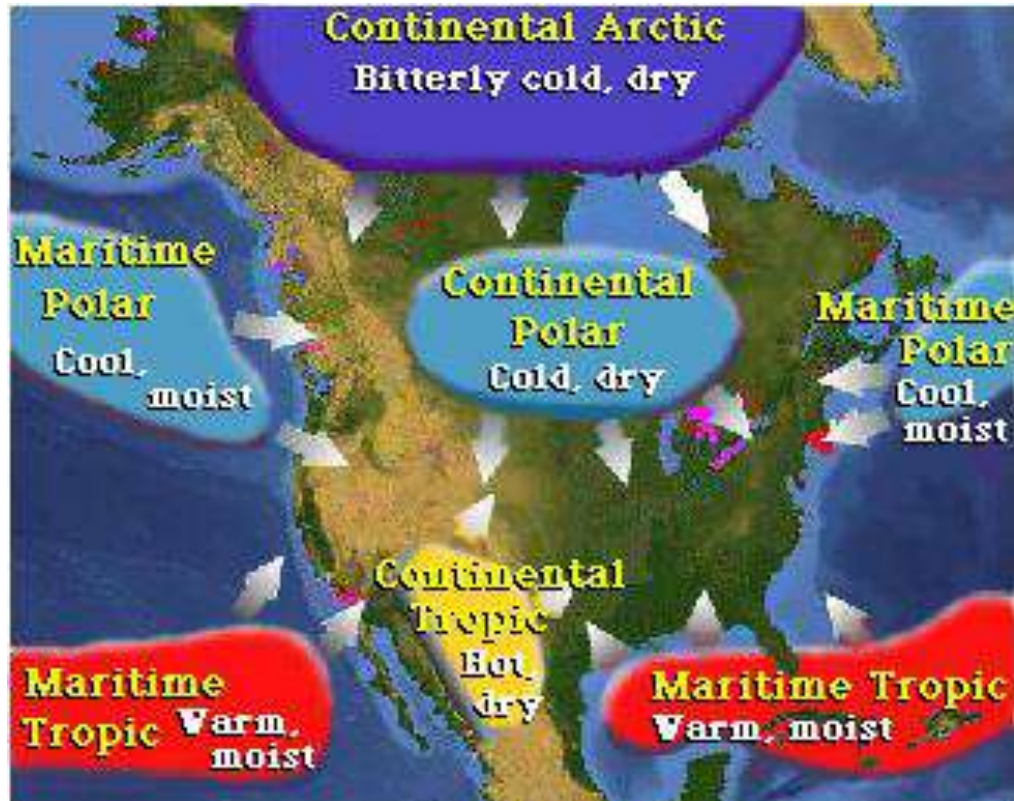
A humid air mass that forms over oceans.



<http://www.met.tamu.edu/class/atmo202/Dir-surface/NASFC-airmasses-sm-word.jpg>

# 46. Continental

A dry air mass that forms over land.



<http://www.met.tamu.edu/class/atmo202/Dir-surface/NASFC-airmasses-sm-word.jpg>

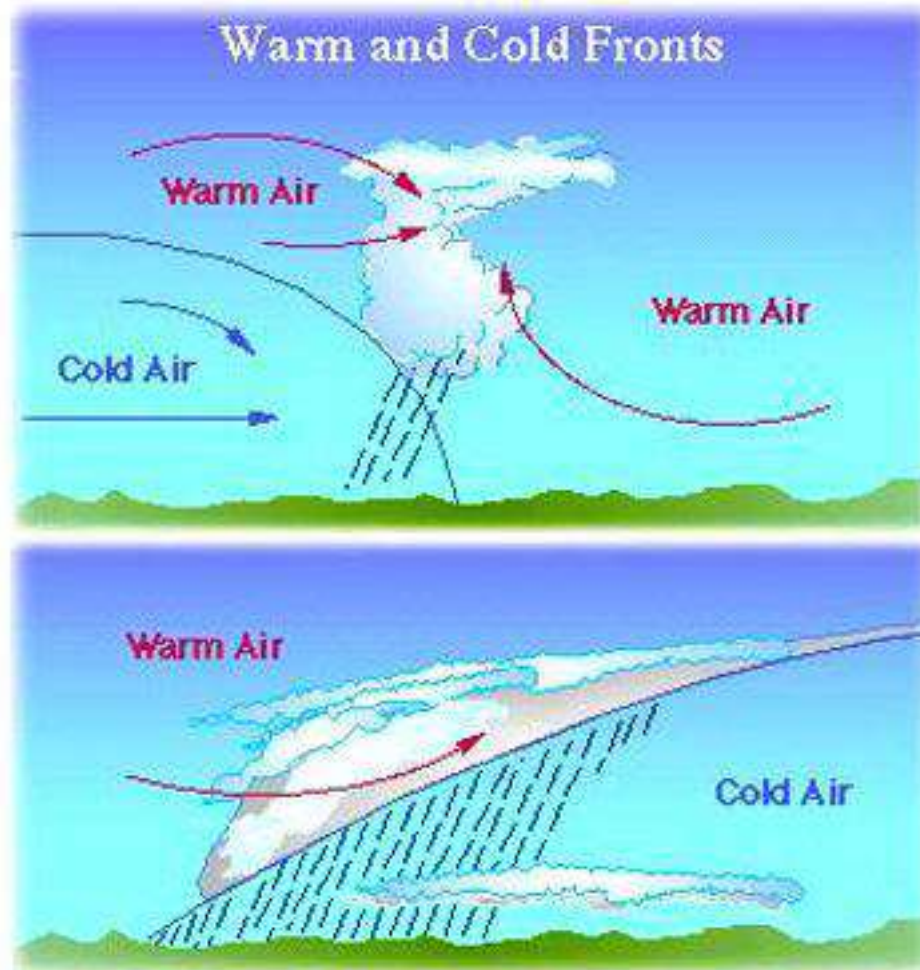
# 47. Jet stream

Bands of high-speed winds about 10 kilometers above Earth's surface.



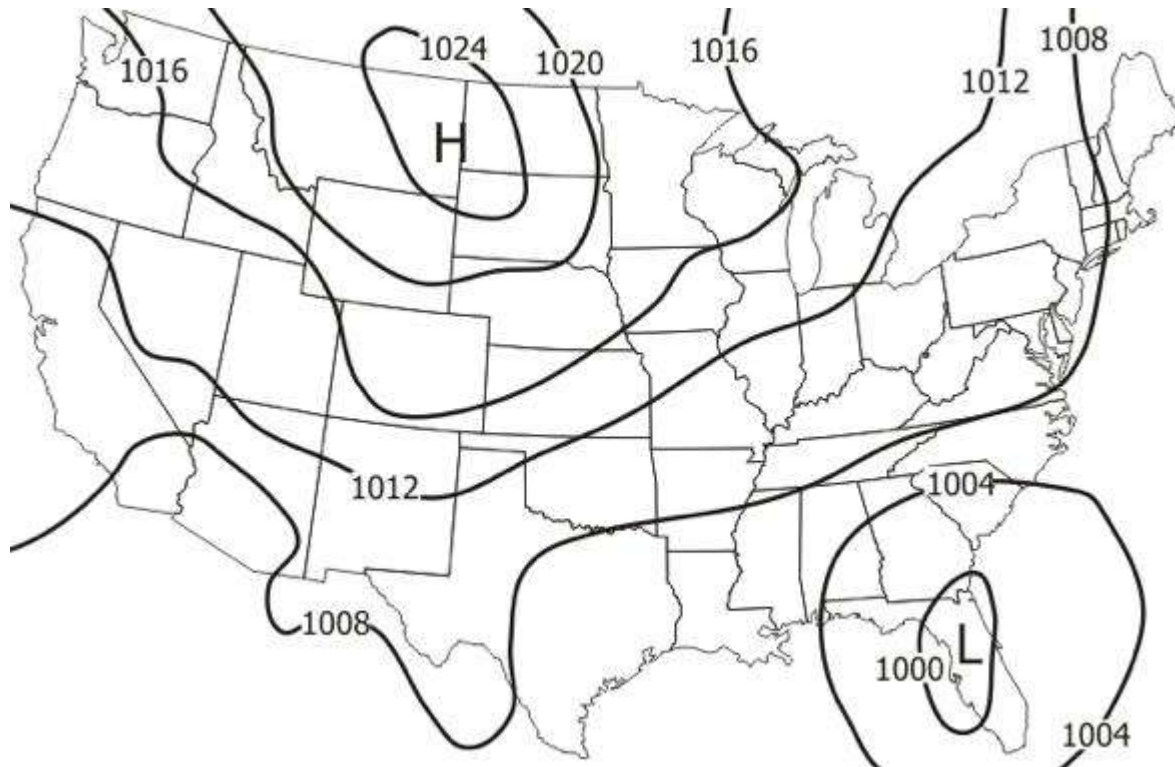
# 48. Front

The boundary where unlike air masses meet but do not mix.



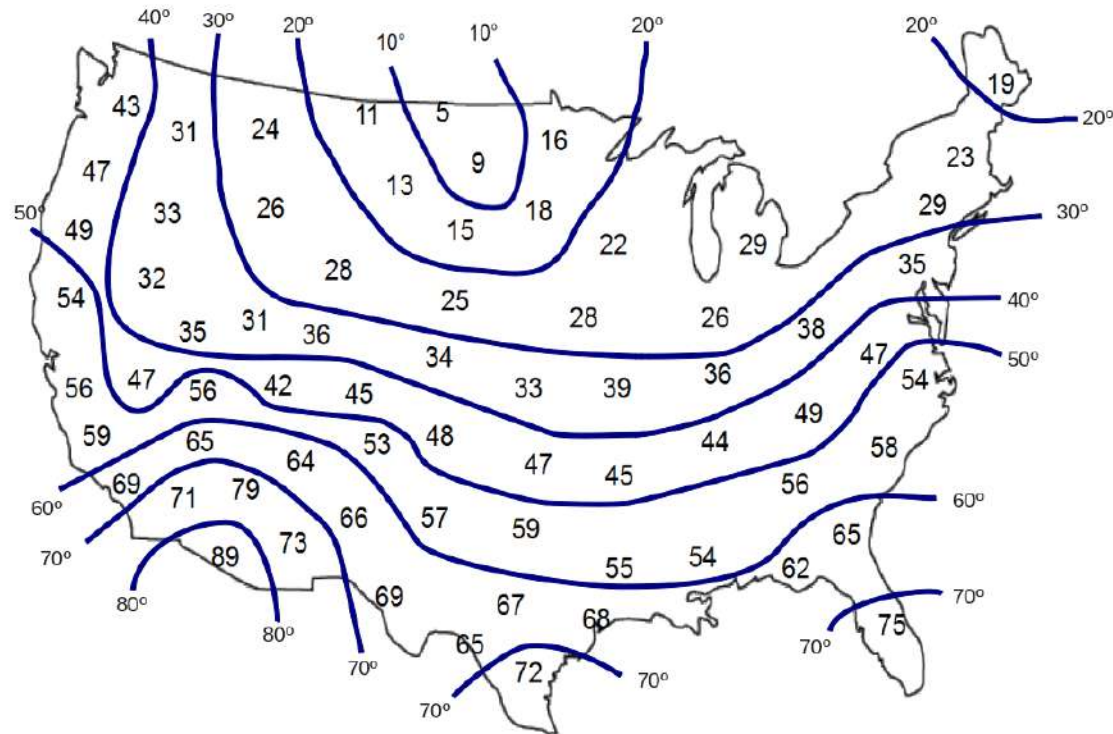
# 49. Isobar

A line on a weather map that joins places that have the same air pressure.



# 50. Isotherm

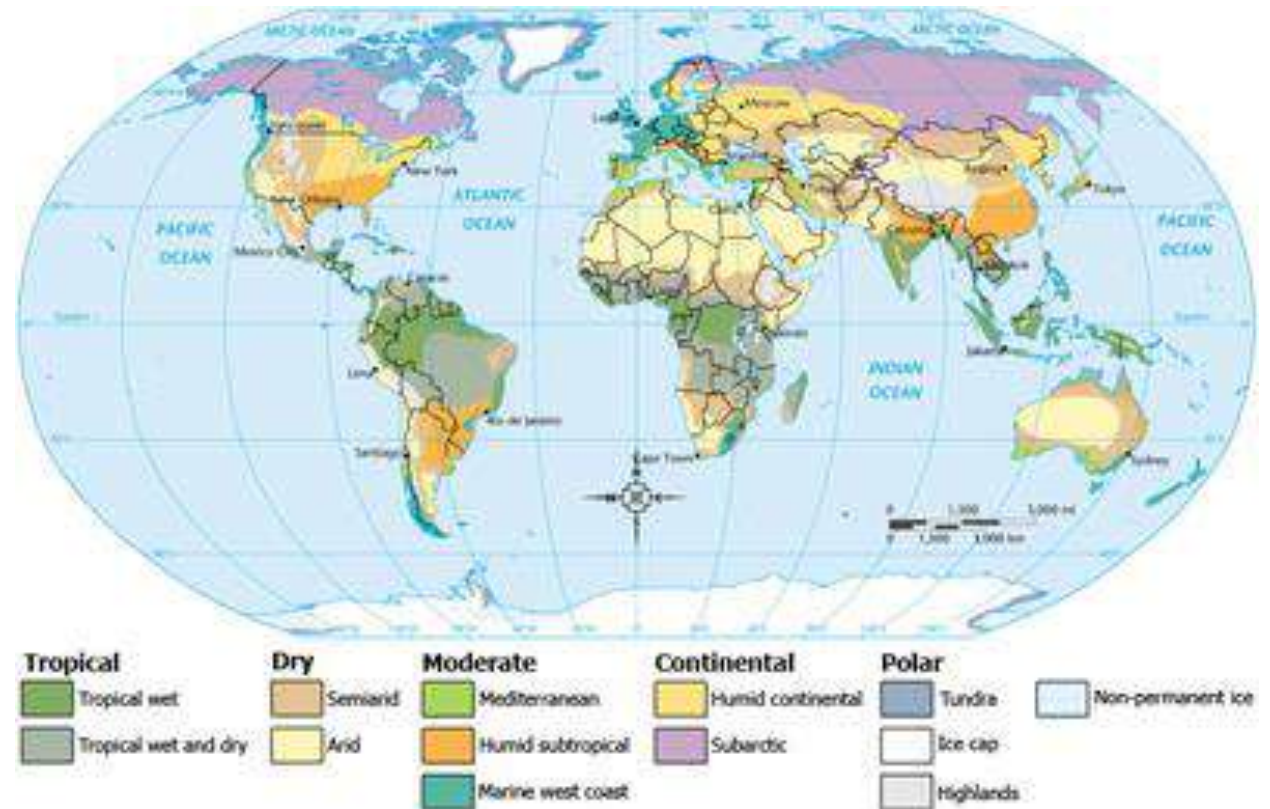
A line on a weather map that joins places that have the same temperature.



<http://geogrify.net/GEO1/Images/Isotherm2-8.png>

## 51. Climate

The average annual conditions of temperature, precipitation, wind, and clouds in an area.



[https://upload.wikimedia.org/wikipedia/commons/thumb/d/df/ClimateMap\\_World.png/400px-ClimateMap\\_World.png](https://upload.wikimedia.org/wikipedia/commons/thumb/d/df/ClimateMap_World.png/400px-ClimateMap_World.png)

## 52. Marine climate

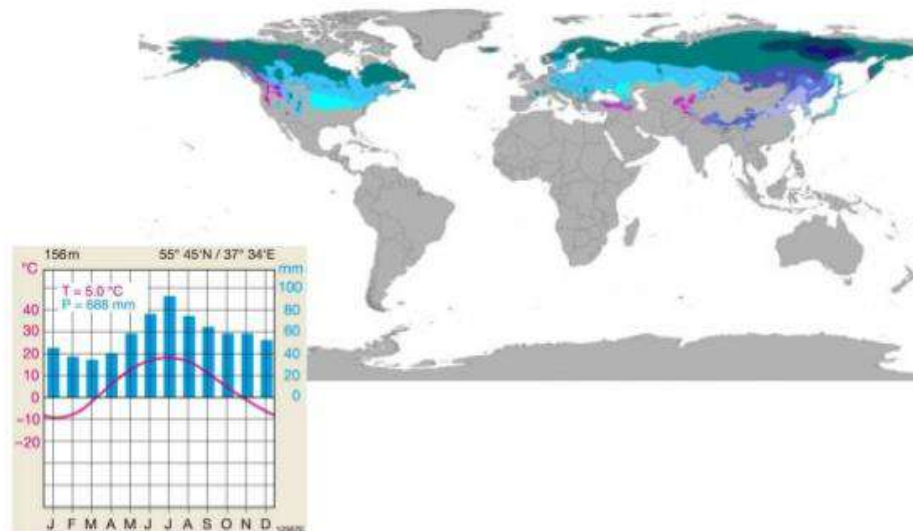
The climate of some coastal regions, with relatively warm winters and cool summers.



# 53. Continental climate

The climate of the centers of continents, with cold winters and warm or hot summers.

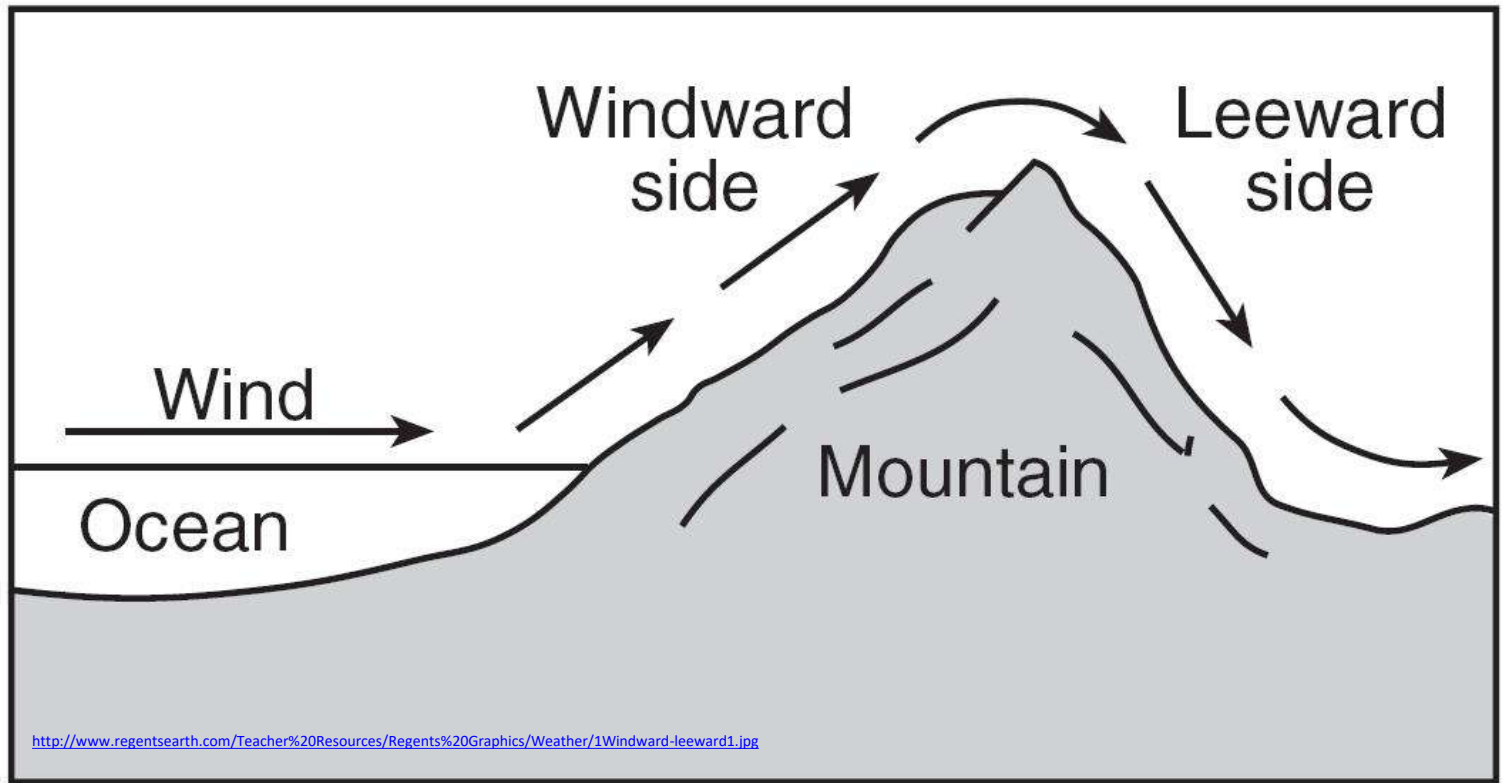
## Continental climate



<https://image.slidesharecdn.com/11-climatezones-voc-140107072645-phpapp02/95/climate-zones-basic-vocabulary-8-638.jpg?cb=1390660710>

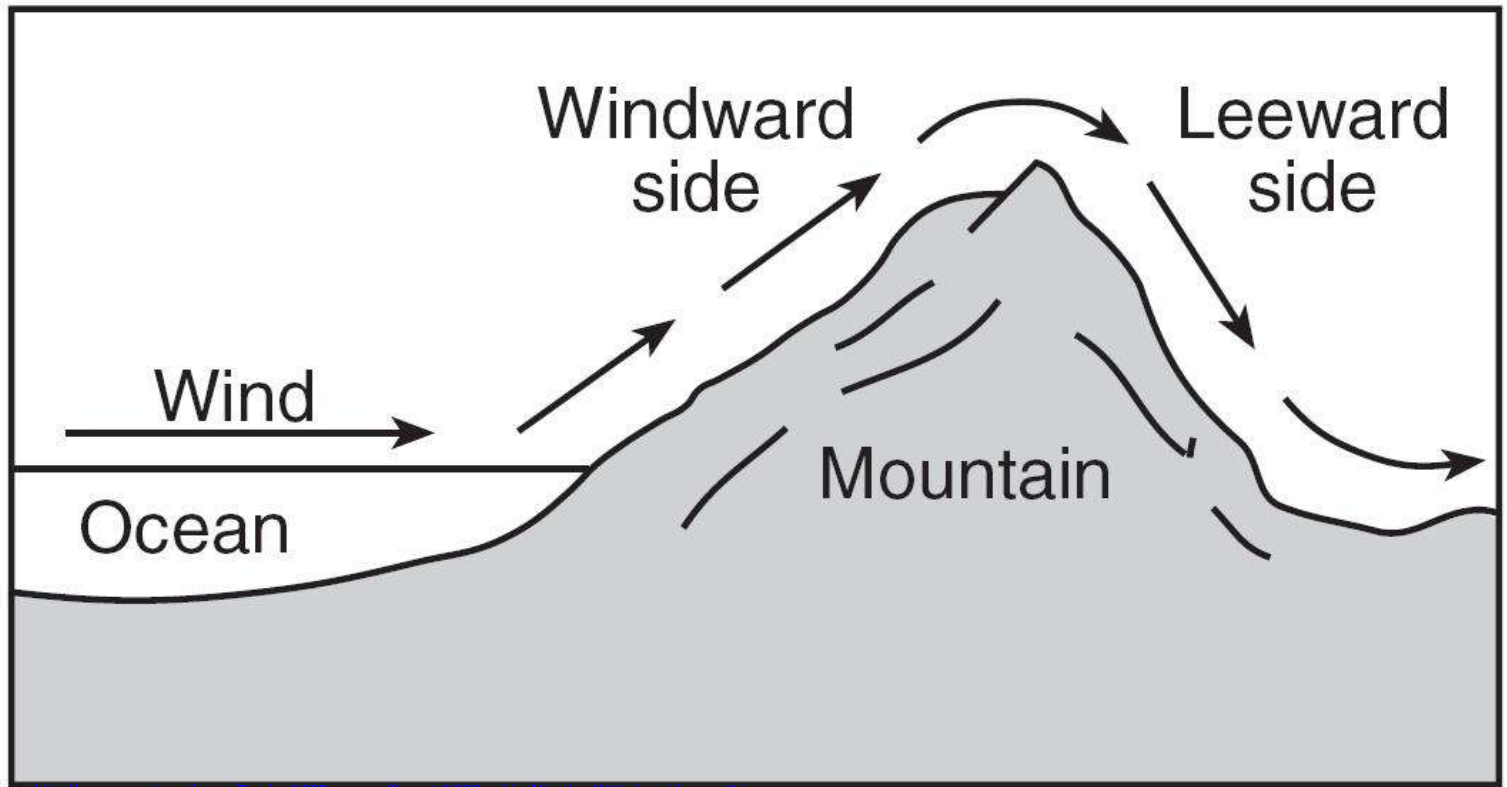
# 54. Windward

The side of the mountain range that faces the oncoming wind.



# 55. Leeward

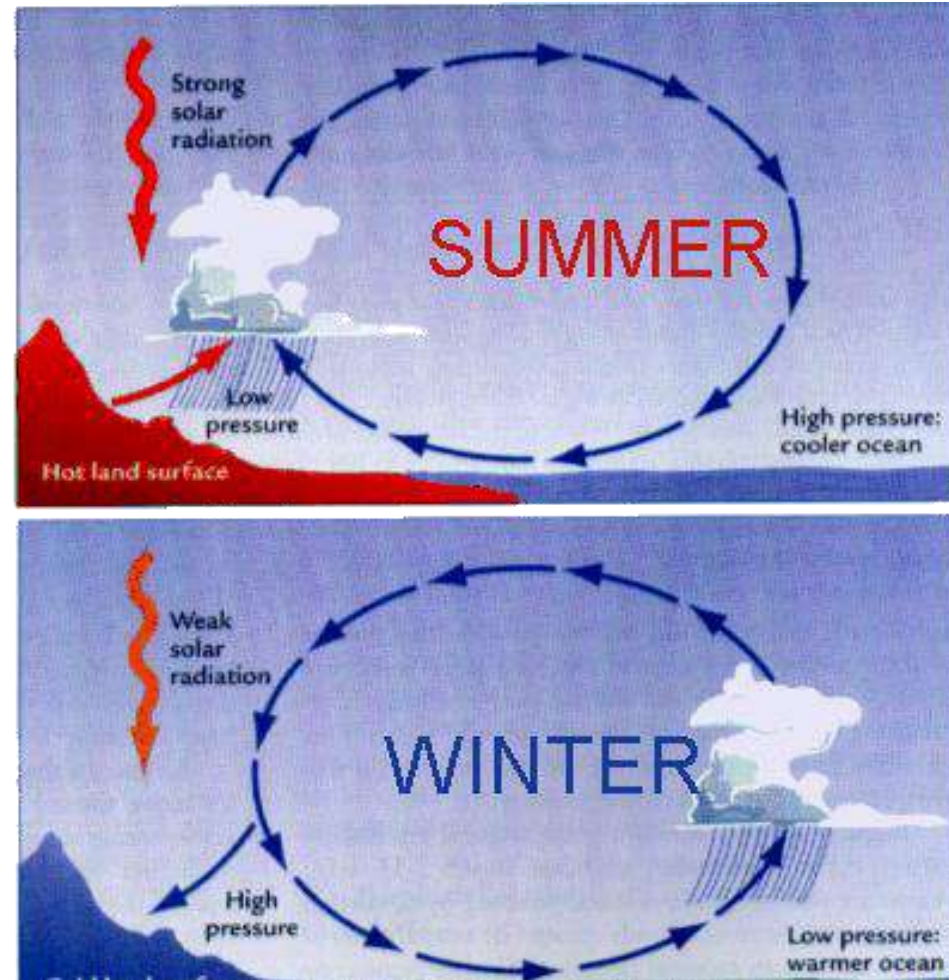
The side of a mountain that faces away from the oncoming wind.



<http://www.regentsbar.ni.com/Teacher%20resources/Regents%20Graphics/weather/1/windward-leeward1.jpg>

# 56. Monsoon

Sea or land breeze over a large region that changes direction with the seasons.



# 57. Permafrost

Permanently frozen soil found in the tundra



<https://i.ytimg.com/vi/lxixy1u8GjY/maxresdefault.jpg>

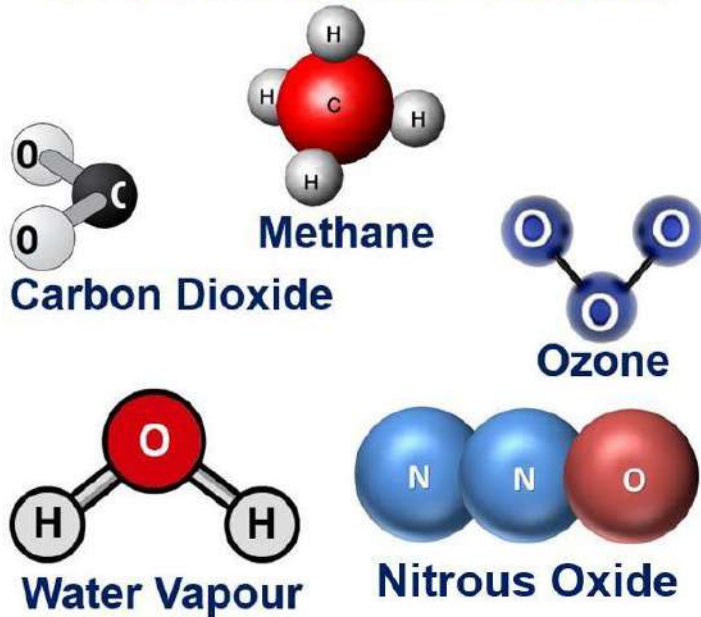


[http://www.alaskakids.org/layouts/alaskakids/files/gallery/images\\_original/159\\_alaskakids-1391.jpg](http://www.alaskakids.org/layouts/alaskakids/files/gallery/images_original/159_alaskakids-1391.jpg)

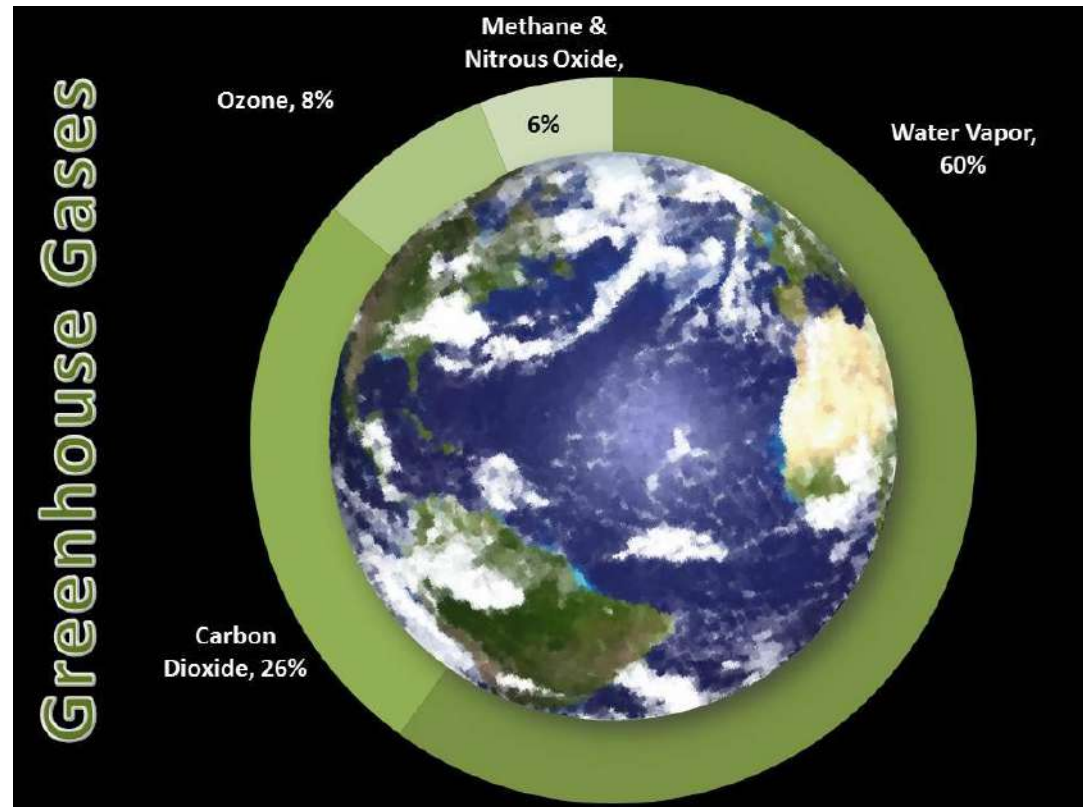
# 58. Greenhouse gas

Gases in the atmosphere that trap energy.

## Greenhouse Gases



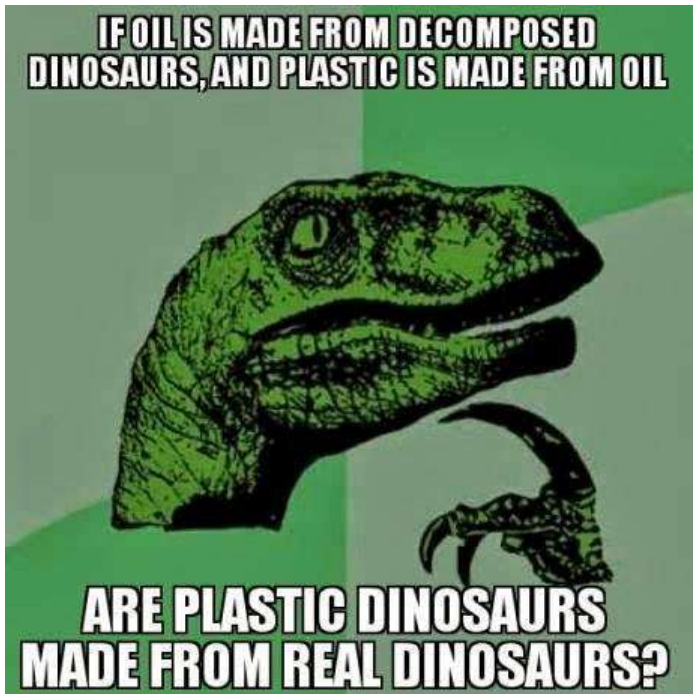
<http://marketbusinessnews.com/wp-content/uploads/2016/05/Greenhouse-gases-most-common.jpg>



<http://www.ces.fau.edu/ces/nasa/images/Energy/GreenhouseGases.jpg>

# 59. Fossil fuel

Coal, oil, or natural gas that forms over millions of years from the remains of ancient organisms.



[http://4.bp.blogspot.com/-mm5bWuzU1QI/Um3rXOG2oDI/AAAAAAAAAR9I/9\\_GFAbnMEIU/s640/hum.jpg](http://4.bp.blogspot.com/-mm5bWuzU1QI/Um3rXOG2oDI/AAAAAAAAAR9I/9_GFAbnMEIU/s640/hum.jpg)

Remember the three fossil fuels are:

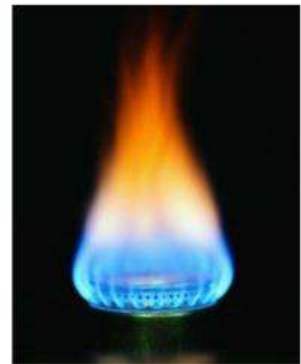
coal



crude oil



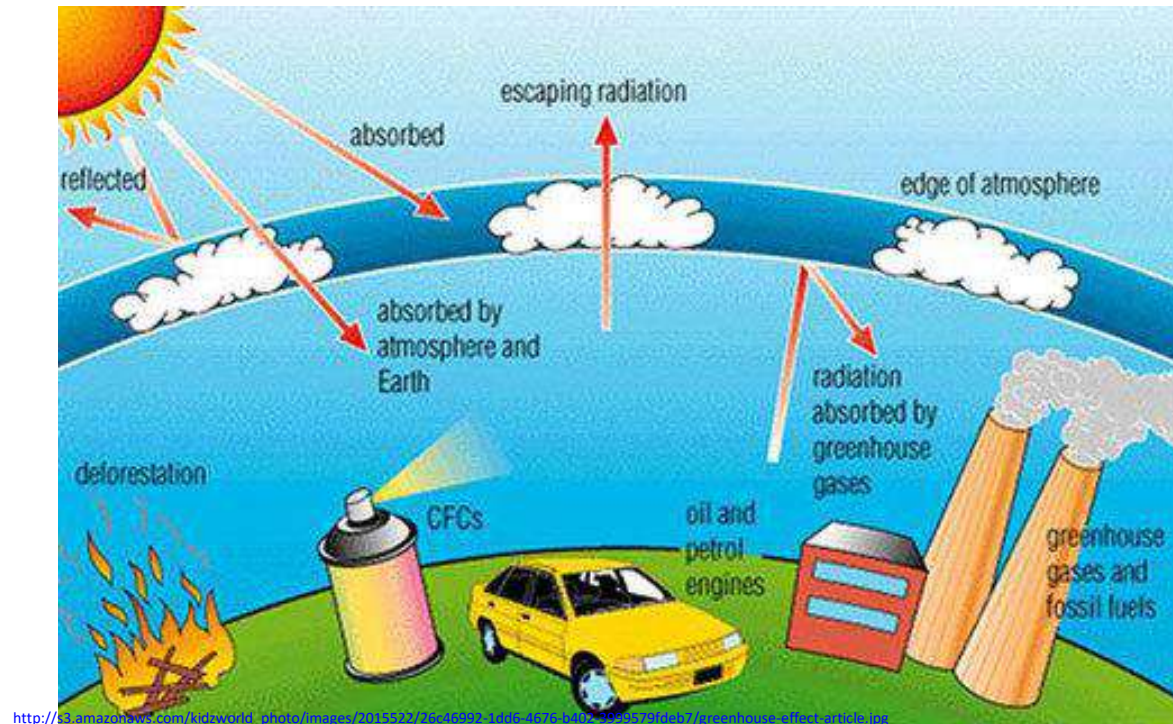
natural gas



<https://image.slidesharecdn.com/fossilfuelsteach-111024141508-phpapp01/95/fossil-fuels-teach-2-728.jpg?cb=1319465772>

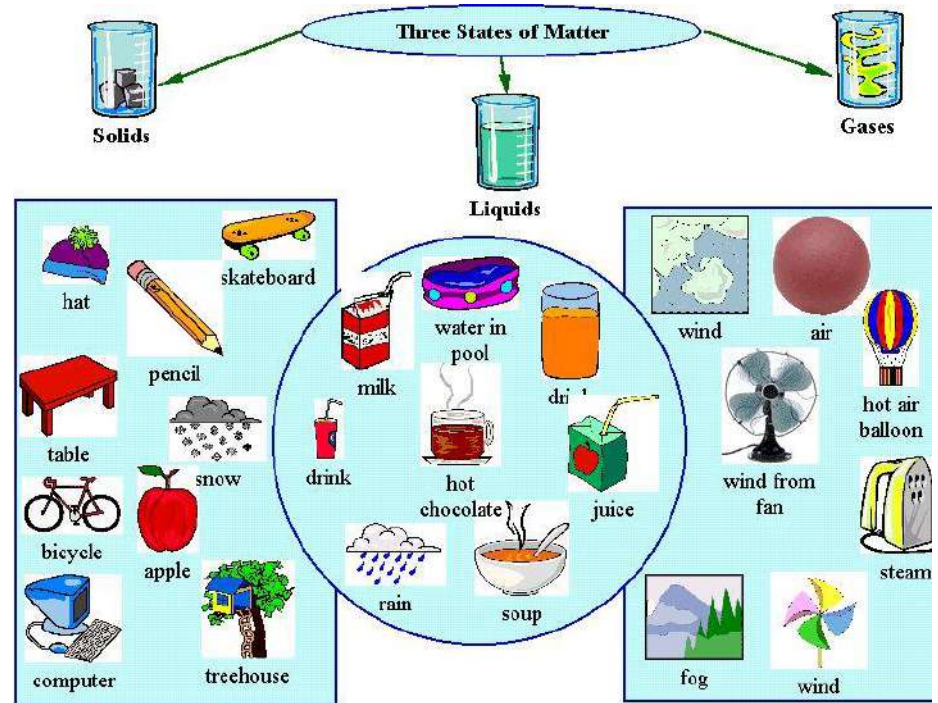
# 60. Global warming

A gradual increase in the average temperature of the atmosphere, thought to be caused by an increase in greenhouse gases by human activities.



# 61. Matter

Anything that has mass and takes up space.



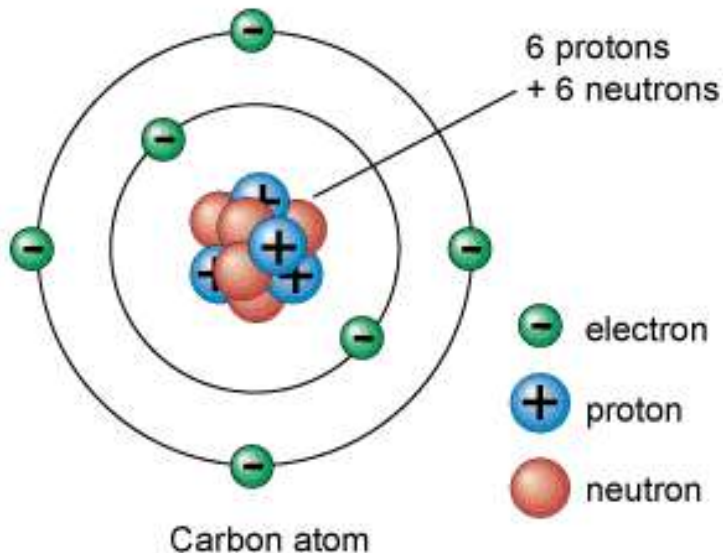
# 62. Element

A pure substance that cannot be broken down into other substances by chemical or physical means.

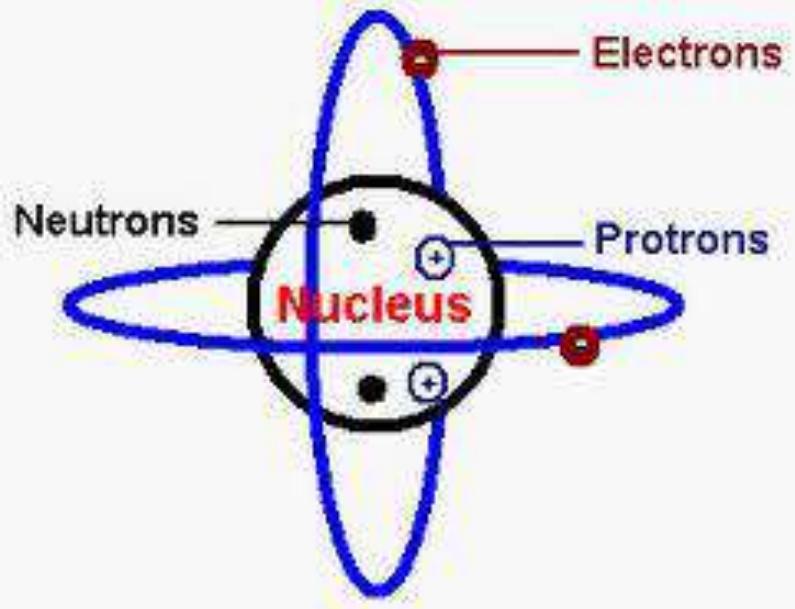
Periodic Table of the Elements																		18 VIIIA 8A											
1 1IA 11A																	2 He Helium 4.00260												
3 Li Lithium 6.941	4 Be Beryllium 9.01218											13 B Boron 10.811	14 C Carbon 12.011	15 N Nitrogen 14.0074	16 O Oxygen 15.9994	17 F Fluorine 18.998403	18 Ne Neon 20.1797												
11 Na Sodium 22.989768	12 Mg Magnesium 24.305	3 Al Aluminum 26.981539	4 Si Silicon 28.0855	5 P Phosphorus 30.973762	6 S Sulfur 32.066	7 Cl Chlorine 35.4527	8 Ar Argon 39.948					11 K Potassium 39.0983	12 Ca Calcium 40.078	13 Sc Scandium 44.05591	14 Ti Titanium 47.88	15 V Vanadium 50.9415	16 Cr Chromium 51.9961	17 Mn Manganese 54.938	18 Fe Iron 55.847	19 Co Cobalt 58.9332	20 Ni Nickel 58.6934	21 Cu Copper 63.546	22 Zn Zinc 65.39	23 Ga Gallium 69.723	24 Ge Germanium 72.64	25 As Arsenic 74.92160	26 Se Selenium 78.96	27 Br Bromine 79.904	28 Kr Krypton 83.80
37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.90585	40 Zr Zirconium 91.224	41 Nb Niobium 92.90638	42 Mo Molybdenum 95.94	43 Tc Technetium 98.9072	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.9055	46 Pd Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.411	49 In Indium 114.818	50 Sn Tin 118.71	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.90447	54 Xe Xenon 131.29												
55 Cs Cesium 132.90545	56 Ba Barium 137.327	57-71 Lanthanide Series	72 Hf Hafnium 178.49	73 Ta Tantalum 180.9479	74 W Tungsten 183.85	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.9665	80 Hg Mercury 200.59	81 Tl Thallium 204.3833	82 Pb Lead 207.2	83 Bi Bismuth 208.98037	84 Po Polonium [209]	85 At Astatine [285]	86 Rn Radon 222.0176												
87 Fr Francium 223.0197	88 Ra Radium 226.0254	89-103 Actinide Series	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [277]	109 Mt Meitnerium [268]	110 Ds Darmstadtium [281]	111 Rg Roentgenium [282]	112 Cn Copernicium [285]	113 Nh Nihonium [284]	114 Fl Flerovium [289]	115 Mc Moscovium [288]	116 Lv Livermorium [293]	117 Ts Tennessine [294]	118 Og Oganesson [294]												
Lanthanide Series			57 La Lanthanum 138.9055	58 Ce Cerium 140.115	59 Pr Praseodymium 140.90768	60 Nd Neodymium 144.24	61 Pm Promethium 144.9127	62 Sm Samarium 150.36	63 Eu Europium 151.9655	64 Gd Gadolinium 157.25	65 Tb Terbium 158.92534	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93032	68 Er Erbium 167.26	69 Tm Thulium 168.93421	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.967												
Actinide Series			89 Ac Actinium 227.0277	90 Th Thorium 232.0377	91 Pa Protactinium 231.03688	92 U Uranium 238.02891	93 Np Neptunium 237.04817	94 Pu Plutonium 244.0642	95 Am Americium 243.0613	96 Cm Curium 247.0754	97 Bk Berkelium 247.0754	98 Cf Californium 251.07958	99 Es Einsteinium 252.0833	100 Fm Fermium 257.0951	101 Md Mendelevium 258.10	102 No Nobelium 259.1089	103 Lr Lawrencium 260.1054												
			Alkali Metal	Alkaline Earth	Transition Metal	Basic Metal	Semimetals	Nonmetals	Halogens	Noble Gas	Lanthanides	Actinides																	

# 63. Atom

The basic particle from which all elements are made; the smallest particle of an element that has the properties of that element.



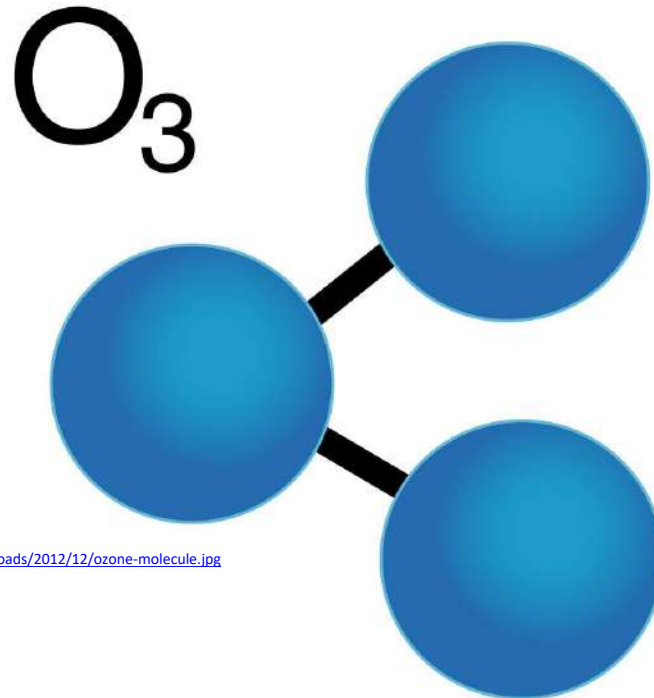
[http://d1iqu7g1y74ds1.cloudfront.net/wp-content/uploads/2010/02/c-atom\\_e1.gif](http://d1iqu7g1y74ds1.cloudfront.net/wp-content/uploads/2010/02/c-atom_e1.gif)



<http://www.myschoolhouse.com/courses/C/6/Images/10.atom.gif>

# 64. Molecule

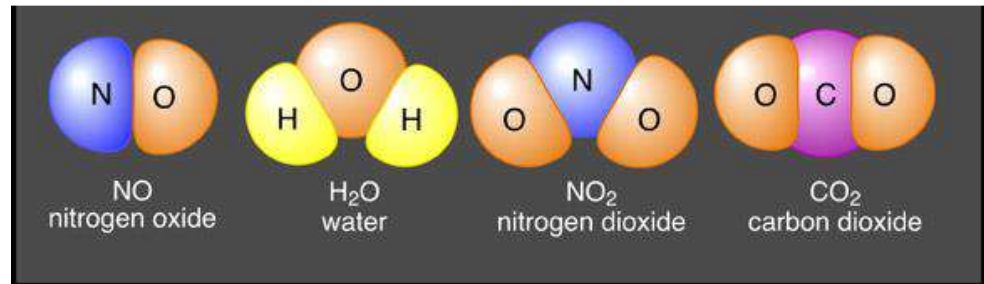
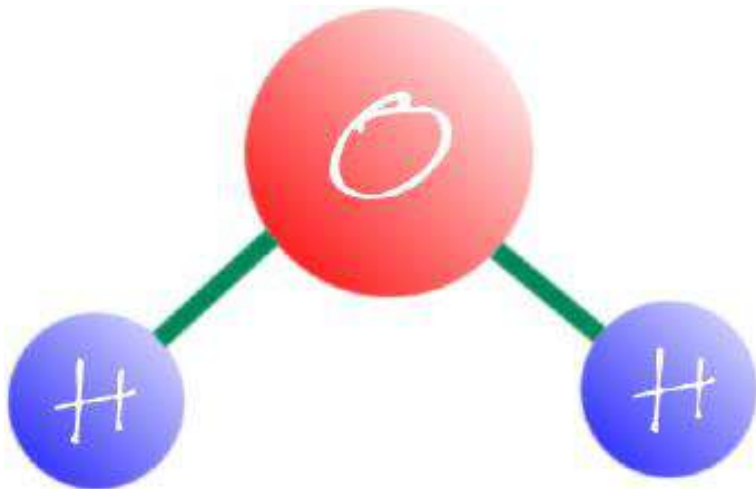
A group of two or more atoms held together by chemical bonds.



<http://www.ozoneminnesota.com/wp-content/uploads/2012/12/ozone-molecule.jpg>

# 65. Compound

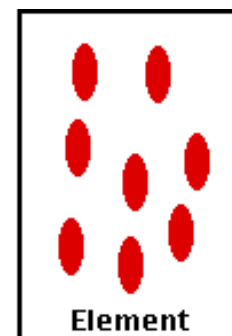
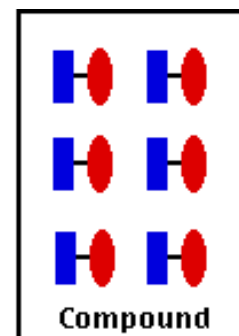
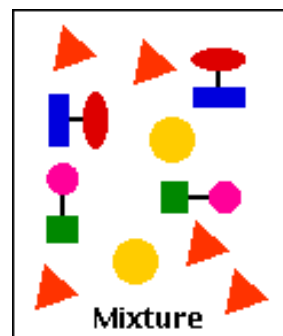
A substance made of two or more elements chemically combined in a specific ratio.



<https://s-media-cache-ak0.pinimg.com/originals/15/31/8a/15318afee084b59b87d7186c68b31e98.jpg>

# 66. Mixture

Two or more substances that are together in the same place but their atoms are not chemically bonded.



# 67. Physical change

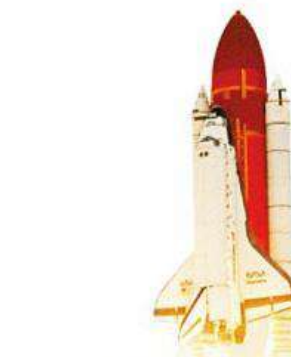
A change that alters the form or appearance of a material but does not turn the material into another substance.



## es of Chemical Changes

# 68. Chemical change

A change in which one or more substances combine or break apart to form new substances.



The **hot gas** formed when hydrogen and oxygen join to make water helps blast the space shuttle into orbit.



**Soured milk** smells bad because bacteria have formed new substances in the milk.



**Effervescent tablets** bubble when the citric acid and baking soda in them react in water.

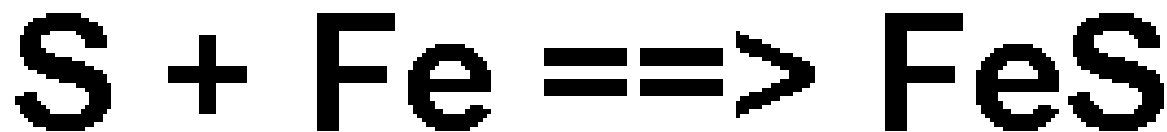
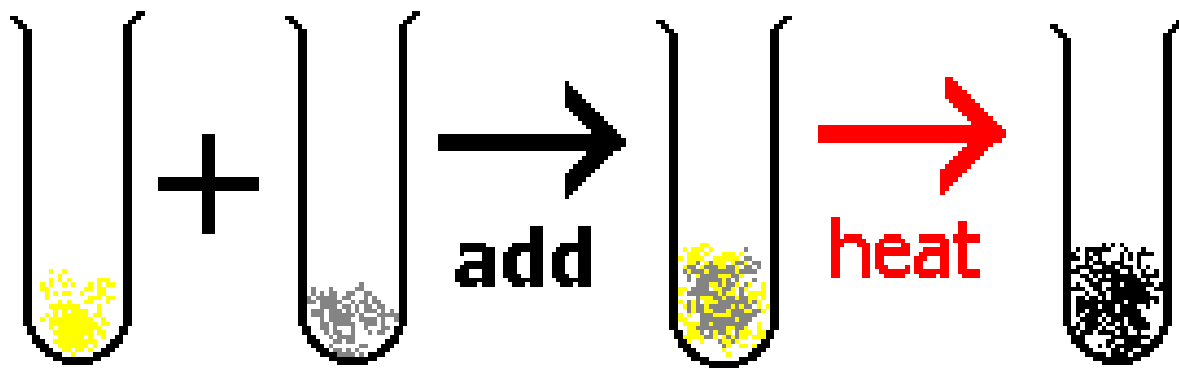


The **Statue of Liberty** is made of orange-brown copper but it looks green from the metal's interaction with moist air. New copper compounds formed and these chemical changes made the statue turn green over time.



## 69. Law of conservation of mass

The principle that the total amount of matter is neither created nor destroyed during any chemical or physical change.



32g + 56g reactants  $\implies$  88g products

# 70. Endothermic change

A change in  
which energy is  
absorbed.



[http://305617573495683722.weebly.com/uploads/1/6/3/8/16388932/633132\\_orig.jpg](http://305617573495683722.weebly.com/uploads/1/6/3/8/16388932/633132_orig.jpg)

# 71. Exothermic change

A change in which energy is released.



[http://science.taskermilward.org.uk/mod1/KS4Chemistry/AQA/Addn%20Mod%204/Addn\\_Mod4\\_img/fire.jpg](http://science.taskermilward.org.uk/mod1/KS4Chemistry/AQA/Addn%20Mod%204/Addn_Mod4_img/fire.jpg)



## 72. Chemical energy

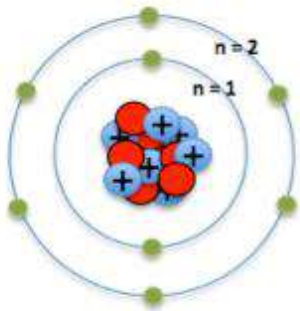
Energy that is stored in the chemical bonds between atoms.



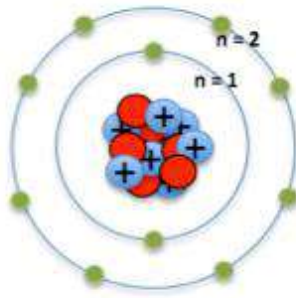
[http://mkbenergy.weebly.com/uploads/2/6/9/5/26952614/4924203\\_orig.jpg](http://mkbenergy.weebly.com/uploads/2/6/9/5/26952614/4924203_orig.jpg)

## 73. Valence electron

The electrons that are in the highest energy level of an atom and that are involved in chemical bonding.



Oxygen = 8 electrons  
6 valence electrons



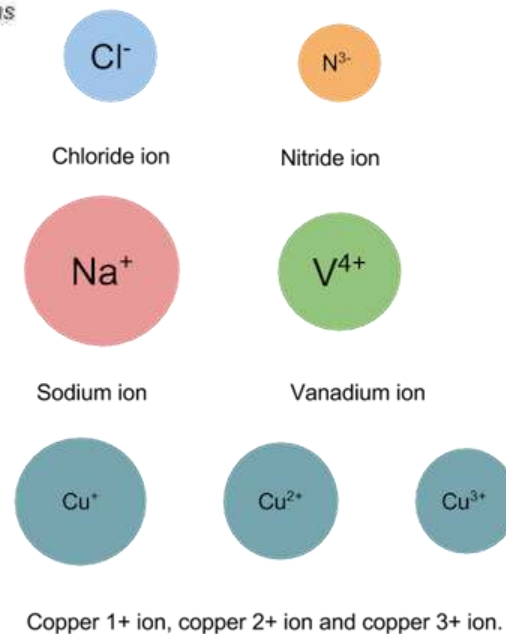
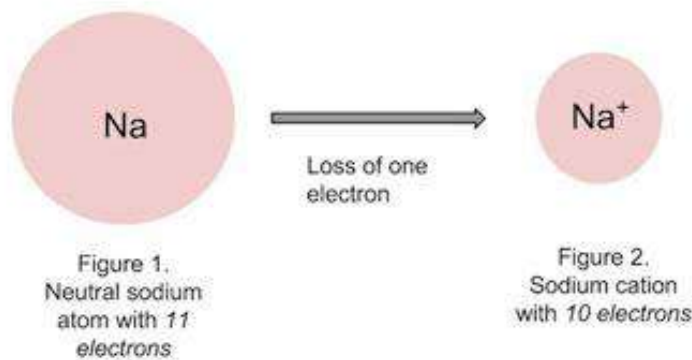
Neon = 10 electrons  
8 valence electrons

### Valence Electrons of Oxygen and Neon

[illegible][illegible]

# 74. Ion

An atom or group of atoms that has an electric charge.



# 75. Polyatomic ion

An ion that is made of more than one atom.

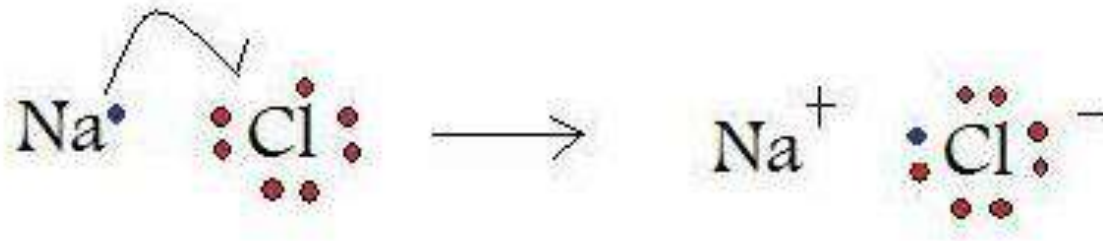
## Polyatomic Ions

Polyatomic Ion	Formula	Ionic Formula	Charge
Ammonium	NH <sub>4</sub>	[NH <sub>4</sub> ] <sup>+</sup>	1+
Hydroxide	OH	[OH] <sup>-</sup>	1-
Nitrate	NO <sub>3</sub>	[NO <sub>3</sub> ] <sup>-</sup>	1-
Sulfate	SO <sub>4</sub>	[SO <sub>4</sub> ] <sup>2-</sup>	2-
Carbonate	CO <sub>3</sub>	[CO <sub>3</sub> ] <sup>2-</sup>	2-
Phosphate	PO <sub>4</sub>	[PO <sub>4</sub> ] <sup>3-</sup>	3-

[https://sites.google.com/a/ocsb.ca/mr-kea-grade-ten-academic-science/\\_/rsrc/1407494039563/8-atomic-history/Poly%20charts.jpg](https://sites.google.com/a/ocsb.ca/mr-kea-grade-ten-academic-science/_/rsrc/1407494039563/8-atomic-history/Poly%20charts.jpg)

# 76. Ionic bond

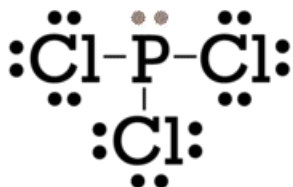
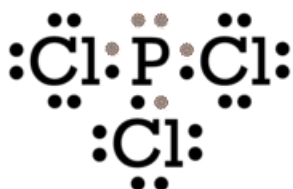
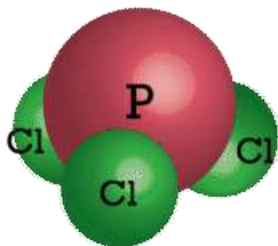
The attraction between oppositely charged ions.



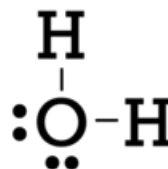
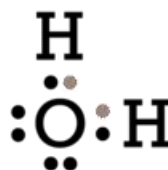
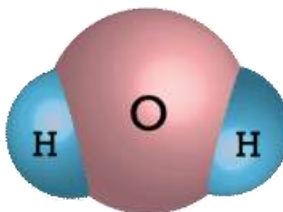
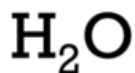
# 77. Covalent bond

A chemical bond formed when two atoms share electrons.

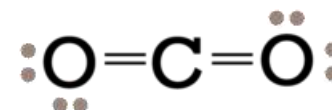
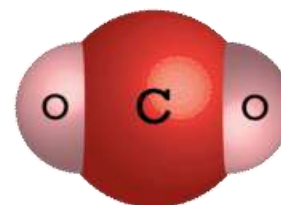
Phosphorus Trichloride



Water



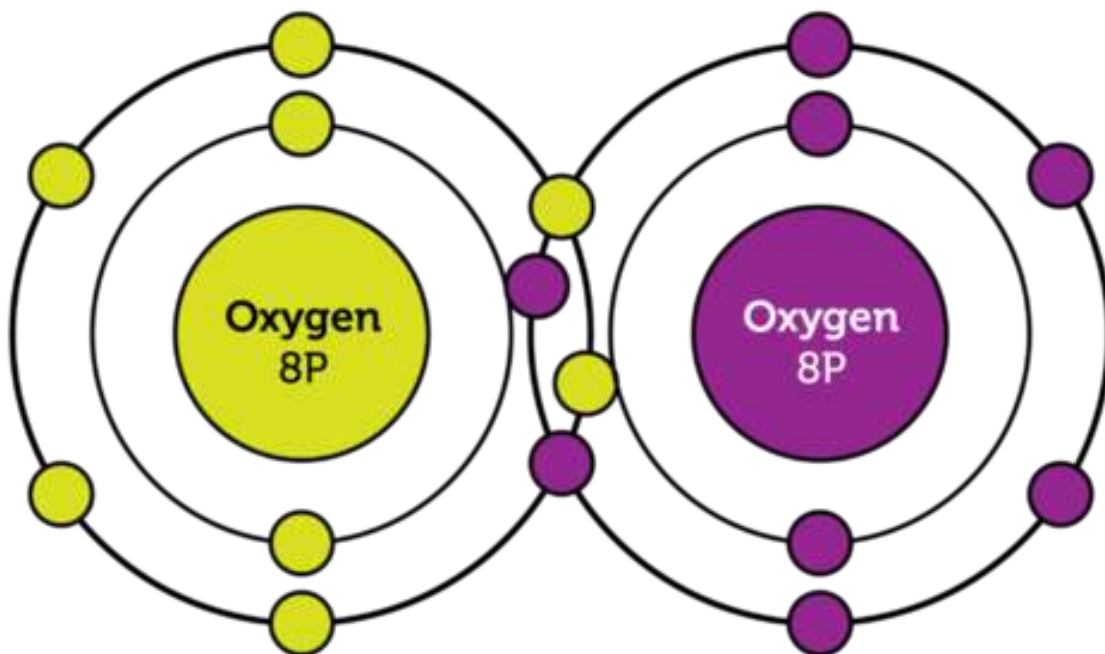
Carbon Dioxide



# 78. Nonpolar bond

A covalent bond in which electrons are shared equally.

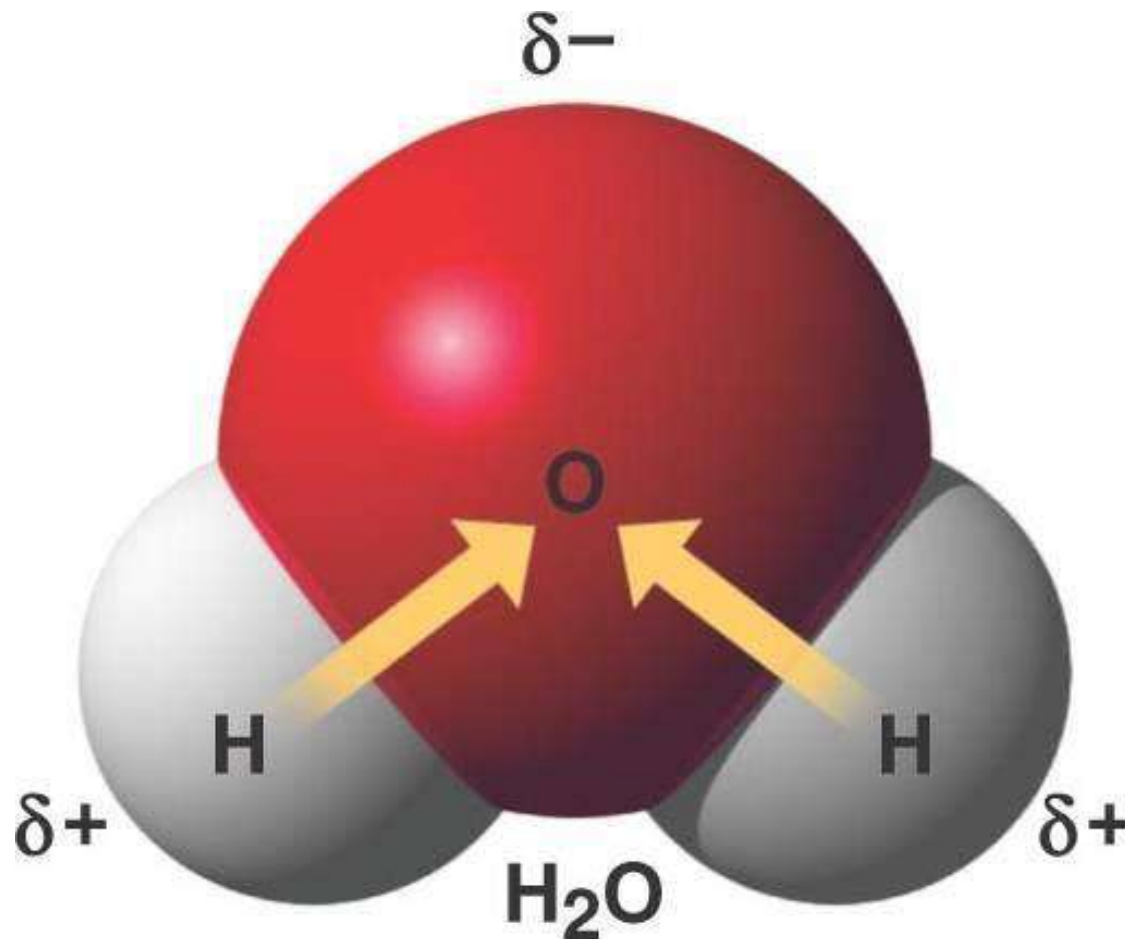
Nonpolar Bonds in an Oxygen Molecule ( $O_2$ )



<https://qph.ec.quoracdn.net/main-qimg-7c0af3e74c7cd505eeb2733cf8249ede>

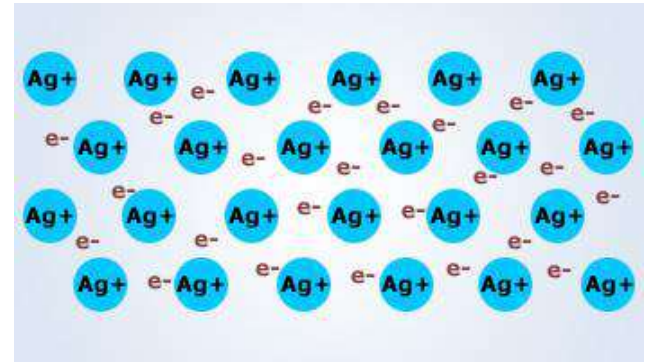
## 79. Polar bond

A covalent bond in which electrons are shared unequally.



# 80. Metallic bond

An attraction between a positive metal ion and the electrons surrounding it.



<https://cdn.jmbullion.com/wp-content/uploads/2013/09/1-oz-sunshine-silver-bar.jpg>