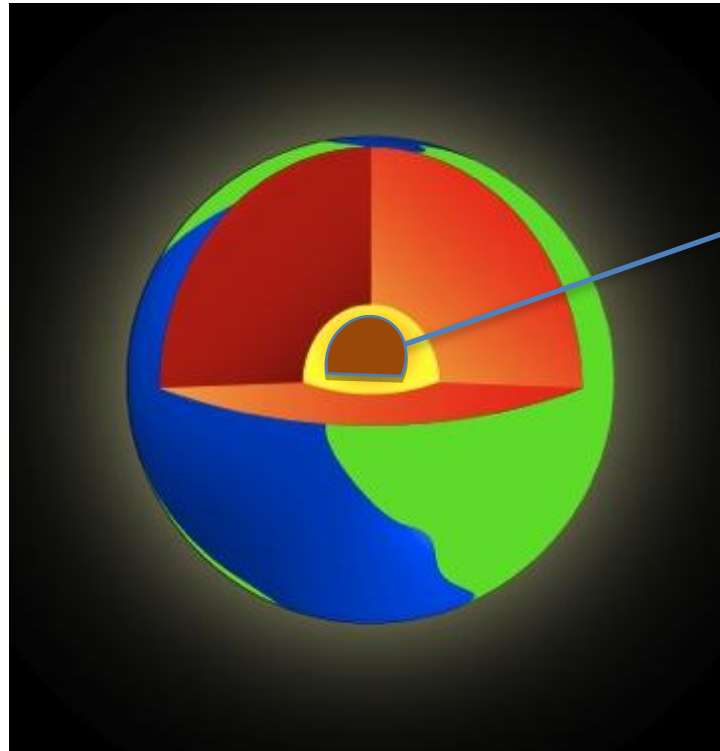


Layers of Earth

Picture Vocabulary

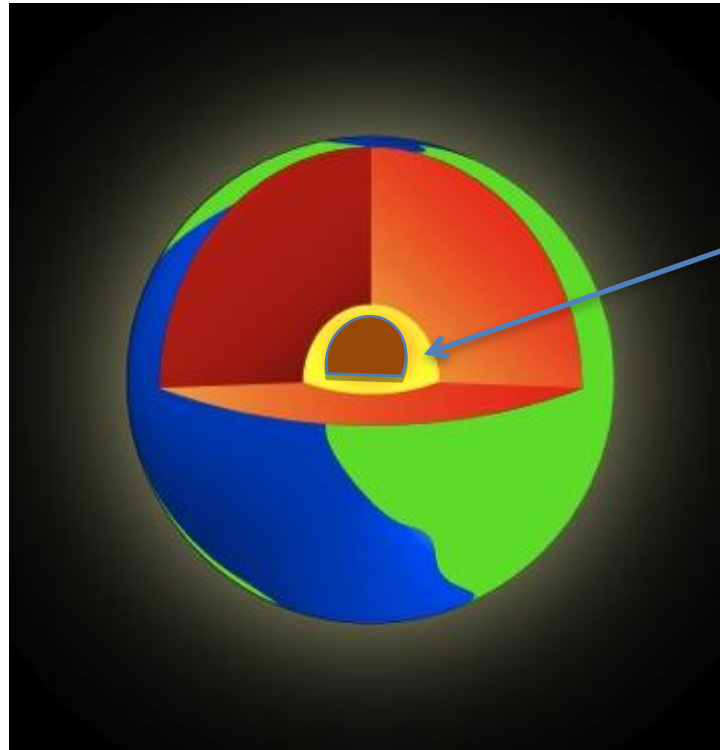
Earth and Space

Inner Core



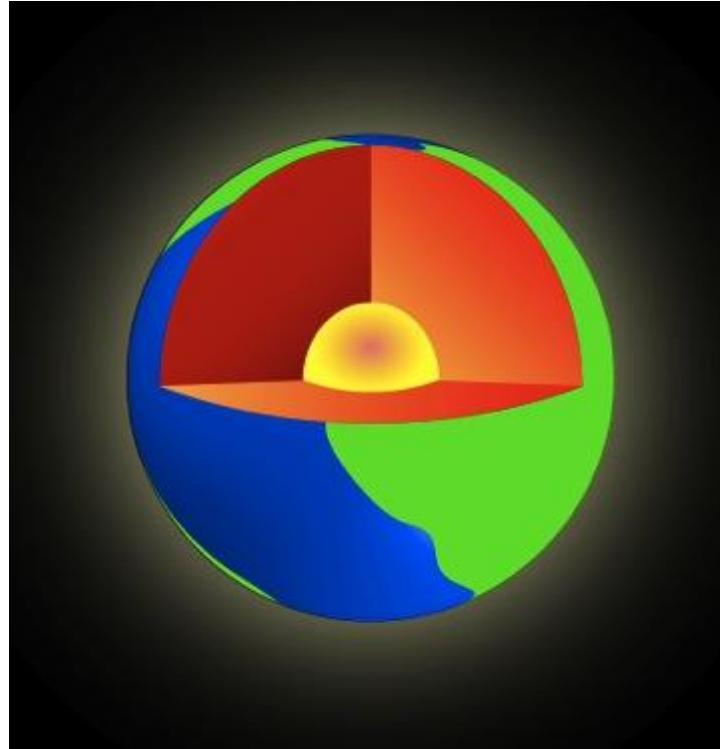
The sphere of solid nickel and iron at the center of Earth; surrounded by the liquid outer core.

Outer Core



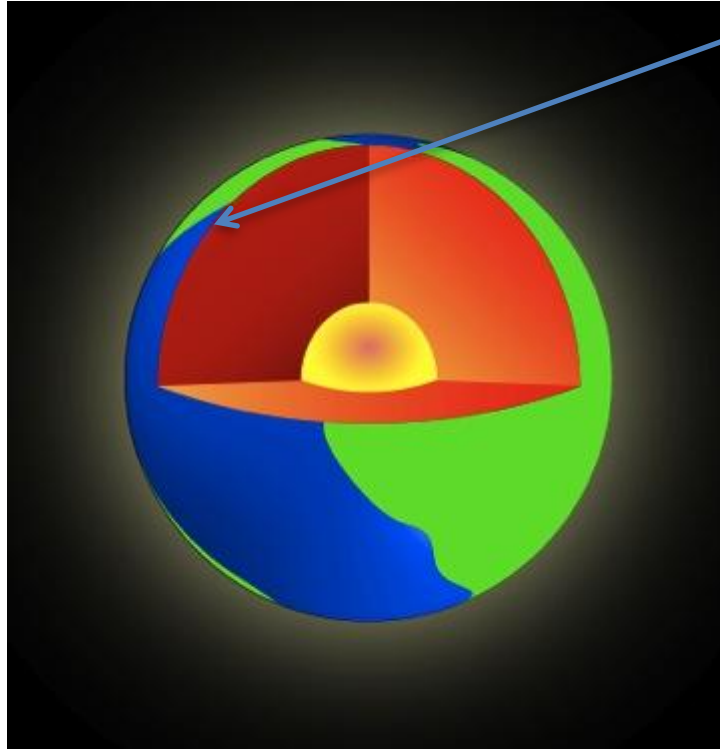
The outer layer of Earth's core; surrounds the inner core and is made of liquid nickel and iron.

Mantle



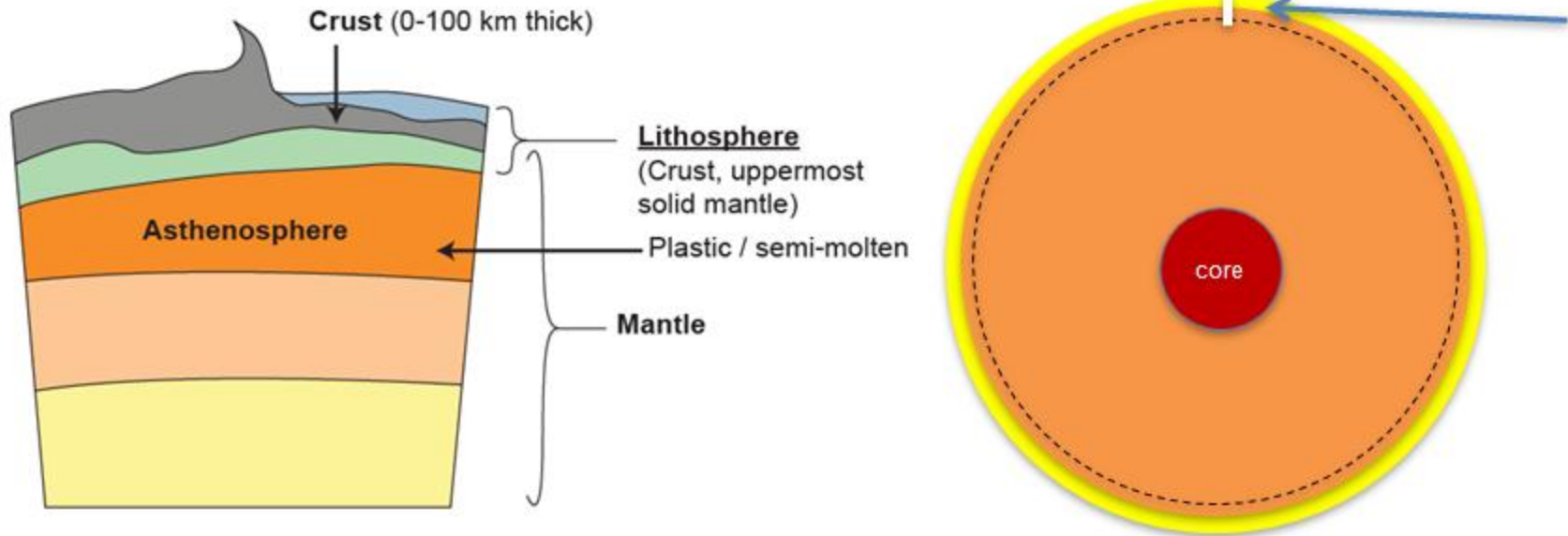
The solid layer of Earth between the crust and the core; made of dense silicates.

Crust



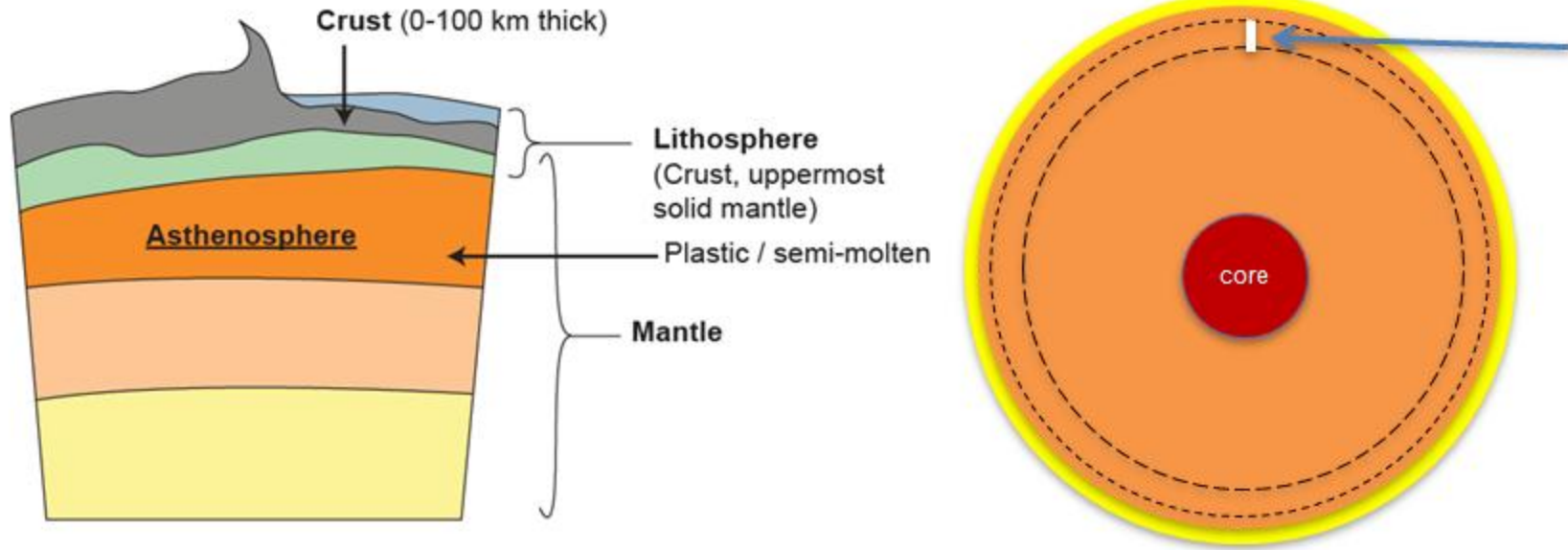
The thin, solid outermost layer of Earth; made of less dense silicates and is either continental (landmasses) or oceanic (ocean floors).

Lithosphere



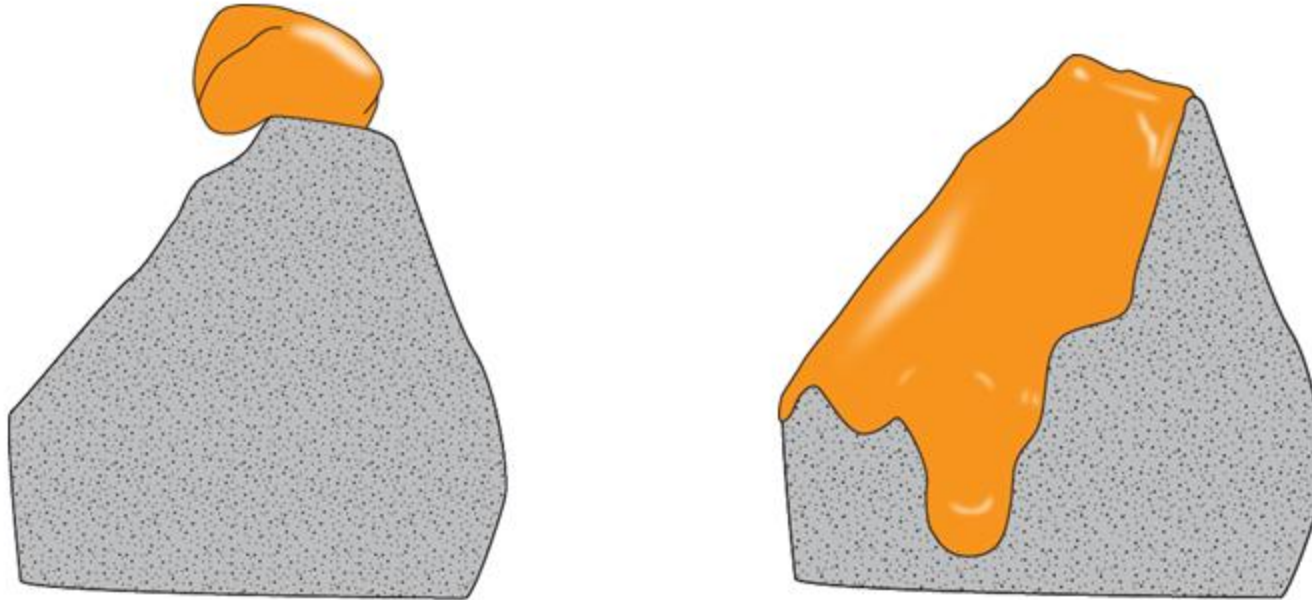
The cool, rigid, outermost layer of Earth that consists of the crust and the uppermost part of the mantle; broken into pieces or segments called plates.

Asthenosphere



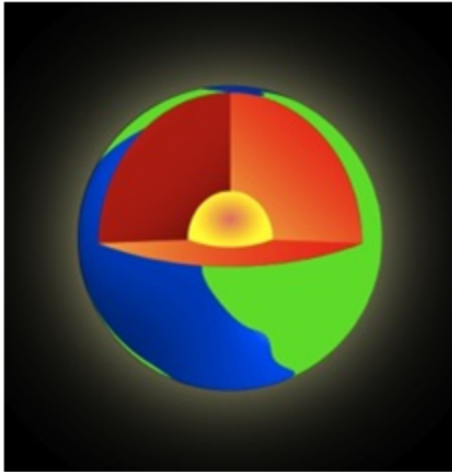
The solid layer with plasticity in the upper mantle that is located just below the lithosphere; lithospheric plates “float” and move on this layer.

Plasticity



A characteristic of the material in the asthenosphere; existing in a solid state yet having the ability to flow without being a liquid.

Earth's Layers

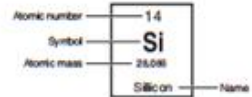


EARTH'S LAYERS					
Layer Name	Thickness (km)	Approx. Temp (Degrees C)	Pressure	Physical State of Matter	Composition
Crust	Iron & nickel	0	LOW ↑ ↓ HIGH	Solid, brittle (part of Lithosphere)	Silica-Rich (Basalt or Granite) Rock
Upper Mantle	~ 200	500		Solid, brittle (part of Lithosphere)	Iron & magnesium-rich Rock
	~ 480	~1,600		Plastic / semi-molten (Asthenosphere)	Iron & magnesium-rich Rock
Lower Mantle	2,200	~2,500		Solid	Iron & magnesium-rich Rock
Outer Core	2,300	5,000		Liquid	Iron & nickel
Inner Core	2,440 (diameter)	7,000		Solid	

The divisions of the composition of Earth determined by either chemical composition or by the physical state of matter.

Chemical Composition

1 1A	2 2A											13 3A	14 4A	15 5A	16 6A	17 7A	18 8A
1 H 1.008 Hydrogen																	2 He 4.003 Helium
3 Li 6.941 Lithium	4 Be 9.012 Beryllium											5 B 10.812 Boron	6 C 12.011 Carbon	7 N 14.007 Nitrogen	8 O 15.999 Oxygen	9 F 18.998 Fluorine	10 Ne 20.180 Neon
11 Na 22.990 Sodium	12 Mg 24.305 Magnesium											13 Al 26.982 Aluminum	14 Si 28.086 Silicon	15 P 30.974 Phosphorus	16 S 32.065 Sulfur	17 Cl 35.453 Chlorine	18 Ar 39.948 Argon
19 K 39.098 Potassium	20 Ca 40.078 Calcium	21 Sc 44.956 Scandium	22 Ti 47.887 Titanium	23 V 50.942 Vanadium	24 Cr 51.996 Chromium	25 Mn 54.938 Manganese	26 Fe 55.845 Iron	27 Co 58.933 Cobalt	28 Ni 58.693 Nickel	29 Cu 63.546 Copper	30 Zn 65.38 Zinc	31 Ga 69.723 Gallium	32 Ge 72.64 Germanium	33 As 74.922 Arsenic	34 Se 78.96 Selenium	35 Br 79.904 Bromine	36 Kr 83.798 Krypton
37 Rb 85.468 Rubidium	38 Sr 87.62 Strontium	39 Y 88.906 Yttrium	40 Zr 91.224 Zirconium	41 Nb 92.906 Niobium	42 Mo 95.96 Molybdenum	43 Tc 101.07 Technetium	44 Ru 101.07 Ruthenium	45 Rh 102.906 Rhodium	46 Pd 106.42 Palladium	47 Ag 107.868 Silver	48 Cd 112.412 Cadmium	49 In 114.818 Indium	50 Sn 118.710 Tin	51 Sb 121.760 Antimony	52 Te 127.60 Tellurium	53 I 126.905 Iodine	54 Xe 131.294 Xenon
55 Cs 132.905 Cesium	56 Ba 137.327 Barium	57 La 138.905 Lanthanum	58 Ce 140.116 Cerium	59 Pr 140.908 Praseodymium	60 Nd 144.242 Neodymium	61 Pm (145) Promethium	62 Sm 150.36 Samarium	63 Eu 151.964 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.925 Terbium	66 Dy 162.500 Dysprosium	67 Ho 164.930 Holmium	68 Er 167.259 Erbium	69 Tm 168.934 Thulium	70 Yb 173.054 Ytterbium		
87 Fr (223) Francium	88 Ra (226) Radium	89 La (227) Lanthanum	90 Th 232.038 Thorium	91 Pa 231.036 Protactinium	92 U 238.029 Uranium	93 Np (237) Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (258) Mendelevium	102 No (259) Nobelium		



Mineral: Halite
(Rock Salt)
Sodium Chloride, NaCl

The elements that make up a substance.

Physical Properties



Characteristics that can be observed or measured; for example, color, melting point, and conductivity.

Temperature



Temperature is a variable that affects the state of matter of Earth's layers. Layers of rock at greater depths from Earth's surface have more thermal energy.

States of Matter



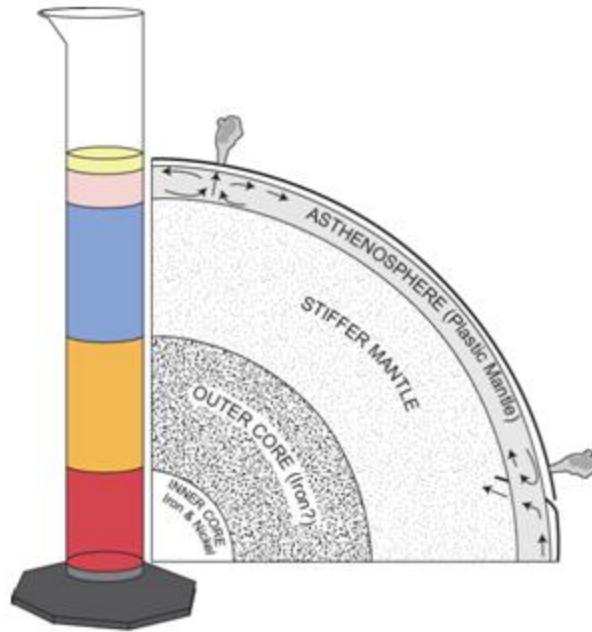
Distinct forms of matter known in everyday experience: solid, liquid, and gas; also referred to as phases of matter.

Pressure



Pressure is a variable that affects the state of matter of Earth's layers. Thick layers of rock apply great force to those layers buried below them, affecting the melting points of the buried rock.

Density



Column of liquids with different densities models the layers of Earth's rocks that vary in density.

Density is the amount of matter in a given space or volume; it is a relationship between mass and volume. Less dense matter will form layers above denser matter.