

Earth Science – Terms and Definitions

based on Fariel, R. - Hinds, R. - Berey, D.: *Earth Science*, Addison-Wesley 1987

Chapter 1	Studying the Earth
Section 1	The Earth - Earth Sciences -The Scientific Method
direct observation	Information received by one or more of the senses.
instrument	A tool used to extend our senses when making observations.
indirect observation	An observation that requires the use of an instrument.
data	A collection of observations.
classifying	Grouping similar objects or events.
physical property	A feature of a substance in itself.
chemical property	A feature of the way one substance reacts with another substance.
inference	An interpretation of observations.
hypothesis	Possible answer to a problem, based on observations.
theory	Explanation based on strong evidence that several generally accepted hypotheses are correct. An explanation for observed phenomena that has a high possibility of being true. (PI)
lithosphere	The rigid outer shell of the earth, 70 to 125 or more kilometers thick. (The solid part of the earth.)
hydrosphere	The entire liquid or water part of the earth.
atmosphere	Envelope of gasses surrounding the Earth, held by gravity. The blanket of air, dust, water droplets, ice particles, etc. that completely covers the earth's lithosphere and hydrosphere.
biosphere	The region where all life is found.
crust	The outer layer of rock, forming a thin skin over the earth's lithosphere.
geology	The science concerned with the earth's lithosphere.
petrology	The part of geology that specializes in rocks.
hydrology	The science concerned with the earth's entire hydrosphere.
meteorology	The science concerned with the earth's atmosphere.
oceanography	The science concerned with the oceans.
astronomy	The science concerned with stars and planets.

Section 2 **Measuring**

Circumference	The distance around a circle or ball.
Density	The mass of 1 cm ³ of a material.
Derived unit	A unit of measure obtained from two or more base units.
Diameter	A straight line that crosses a circle through the center.
Formula	A group of symbols that make a mathematical statement.
Mass (hmotnost)	A representation of a substance using symbols for its constitutional elements.
Radius - pl. radii	The amount of material in something (the same everywhere).
SI	the distance from the center to the edge of a circle.
Volume	Initials for International System of Units.
Weight	The amount of space that an object takes up or can be filled with.
	The pull of gravity on nearby objects.

Numbers and Fractions

Numbers:	ordinal (1,2,3)	cardinal (1.,2.,3.,)	even (2,4,6..)	odd (1, 3, 5..)
Numerals:	Arabic	Roman (II, VII)		
Fractions:	a half, a third, a fourth/a quarter, a fifth, decimal point, the tenth, the hundredth, the thousandth			
Symbols:	percent, infinity, (not)equal to, greater than, less than			
Operations:	addition (plus) – result/answer subtraction (minus) - remainder multiplication (multiplied by, times) division (divided by) power (squared, cubed) root (square/cube/fourth)			

Geometry *Draw the lines, angles and shapes:*

Lines:	straight	parallel	curved	spiral	perpendicular
Angles:	right	obtuse	acute		reflex
Shapes:	square, triangle – base	rectangle,	rhombus,	parallelogram,	diagonal
	circle – circumference	Segment	arc	diameter	radius
	ellipse		sector		

Three-dimensional Shapes: cube **sphere** cylinder **cone** pyramid

Remember the expressions with the stress on the second syllable:
obtuse, acute, diagonal, triangle, rectangle, diameter, circumference, subtract

Check the correct pronunciation:
Arabic, Roman, equal, quotient, radius, sphere, cylinder, the thousandth, curved, angle, subtract,

**Wide – width – widen, deep –depth – deepen, high – height [ai], weigh – weight [ei],
strong – strength(en), long – length(en)**

Section 3

Mapping the Earth's Surface

compass	An instrument for locating magnetic north.
contour interval	Difference between contour lines.
contour line	Line indicating the same elevation.
elevation	Height above sea level.
equator	Line that circles the earth at 0° latitude.
globe	A physical model of the earth.
graphic scale of distances	Line divided into units of distance.
hachures	Short lines that indicate direction of slope.
latitude	Distance north or south of the equator.
longitude	Distance east or west of the prime meridian.
magnetic declination	Distance from true to magnetic north.
magnetic north	Direction toward the North Magnetic Pole.
map projection	An attempt to represent the earth's curved surface on a flat surface.
map	A flat representation of the earth's surface.
meridian	A north-south line that crosses the equator.
North Geographic Pole	Point where all meridians meet.
North Magnetic Pole	The North Pole indicated by a compass.
parallel	East-west line parallel to the equator.
prime meridian	The imaginary north-south line that passes through Greenwich, England.
scale	Ratio of map distances and actual distances.
topographic map	A map that shows land features.
topography	Elevations and shapes of land features.
true north	Direction toward the North Geographic Pole.

Chapter 2

Earth Materials

Section 1

Minerals

matter	Anything that takes up space and has mass.
atom	The smallest complete part of an element with all the properties of that element.
element	A substance that contains only one kind of atom.
compound	A substance made up of two or more elements joined together in fixed proportions.
impurities	Atoms of elements other than the key elements of a mineral.
mineral	A compound that is natural, inorganic, a crystalline solid, and made up of key elements.
crystalline solid	A solid substance whose atoms are locked together into fixed patterns. A substance in which the atoms are arranged in a regular, repeating, orderly pattern. (PI)
inorganic	Not organic; formed, for the most part, without the help of plants and animals.
crystal	The shape produced when mineral grains have freedom to form in any direction.
silicate minerals	Minerals containing silicon and oxygen.
nonsilicate minerals	All minerals that are not silicates.
heft	A rough-estimate weight test for minerals.
cleavage	The ability of a mineral to break into smooth, parallel surfaces.
luster	The way that a mineral reflects the light.
streak	The color of the powder of a mineral against a white background.
fracture	The manner in which a mineral breaks (that does not have cleavage).

Section 2

Rocks

rock	A mixture of minerals that is beneath all soil and water on the earth's surface. Naturally formed, consolidated material composed of grains of one or more minerals. (There are a few exceptions to this definition.) (PI)
igneous rock	Rock that is formed from solidification of magma (hot melted materials).
lava	What magma is called after it reaches the surface of the earth.
magma	Liquid rock melt that is found in some places beneath the earth's surface.
sedimentary rock	Rock that is formed from sediments.
metamorphic rock	Rock that is formed deep within the earth's crust when minerals and rocks are changed by very great heat and pressure which changes the crystal structure.
mineral composition	A list of the minerals that make up a rock.
texture	The pattern made by the size, shape, and arrangement of the particles that are in rock.
rock cycle	The process by which rock is changed from one class to another.

Section 3

Using Earth Materials

ore	Any mineral or rock from which a needed substance can be removed cheaply enough and easily enough.
mine	The place that ore comes from.
fossil fuels	Fuels formed from the remains of plants and animals that lived and died long ago.
petroleum	A liquid fossil fuel.
natural gas	A fossil fuel that is a gas.
trap	A kind of blockage formed by nonporous rock that traps petroleum and natural gas.
petrochemicals	Chemical products made from petroleum.
coal	A solid fossil fuel.
peat	A brown, lightweight, unconsolidated or semi-consolidated deposit of plant remains. (PI)
solar energy	Energy from the sun.
hydroelectric energy	Electricity produced by generators powered by moving water.
geothermal energy	Energy powered by heat from deep within the earth's crust.
atomic energy	Energy that is derived from the atoms of certain earth materials.
fission	Atomic energy that is produced when certain large, unstable atoms are made to split apart to form atoms of a different element.
fusion	Atomic energy that is produced when atoms of an element are joined together to form atoms of a different element.