



## Map & Compass Glossary

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aerial survey	Mapping utilizing photographic, electronic, or other data obtained from an airborne station. Also called air survey.
altazimuthal theodolite	An instrument equipped with both horizontal and vertical graduated circles, for the simultaneous observation of horizontal and vertical directions or angles.
altitude tinting	See hypsometric tinting.
anaglyph	A stereogram in which the two views are printed or projected superimposed in complementary colors, usually red and blue. By viewing through filter spectacles of corresponding colours, a stereoscopic image is formed.
arc of the meridian	A part of an astronomic or geodetic line of longitude.
area proportional to (APT) map	A cartogram in which the surface extent of features is relative to the amount of the map data (e.g. population) rather than the geographical extent of the base to which it is related.
area reference grid	A plane-rectangular coordinate system usually based on, and mathematically adjusted to, a map projection and with numbers and/or letters used to designate positions of reference to the system.
area symbol	A continuous and distinctive shading, tone, or repetitive pattern used on a map to represent features, real or theoretical, having usually considerable surface extent (e.g. forests, religion). It contrasts with a point symbol or line symbol.
astronomical north	See north.
azimuth	The horizontal direction of a line measured clockwise from a reference plane, usually the meridian.
azimuthal map projection	A systematic representation of the graticule on which the of all lines radiating from a central point or pole, are the same as the directions of the corresponding lines on the graticule.
bar scale	See graphical scale.
base data	Fundamental cartographic information (e.g. coastlines, political boundaries) in relation to which additional data of a more specialized nature may be compiled or overprinted.
base line	A surveyed line established with more than usual care, to which surveys are referred for coordination and correlation.

block diagram	A representation of a landscape usually in perspective or isometric projection, frequently exaggerated in the vertical scale.
cadastral map	A plan showing the boundaries of subdivisions of land, usually with bearings and lengths and the areas of individual tracts, for the purposes of describing and recording ownership.
cardinal direction	Any of the four principal astronomical directions on the surface of the earth: north, east, south, west.
cartobibliography	A systematic list of maps usually relating to a given region, subject, or person.
cartogram	An abstracted or simplified map for displaying quantitative data for which the base is normally not true to scale.
cartouche	A feature of a map or chart, often a decorative inset, containing the title, legend, or scale, or all of these items.
chorographic-scale map	A systematic representation of an intermediate-sized land area (eg. a country) in contrast to a small-scale map or a large-scale map. Also called an intermediate-scale map.
choropleth map	A systematic representation in which colour or shading is applied to areas bounded by statistical or administrative limits.
colour separation	The process of preparing a separate drawing, engraving, or negative for each colour required in the production of a lithographed map or chart.
compass north	See north
compass rose	A circle graduated from the reference direction, usually north, in compass points, or degrees (0-360) or both.
condensed projection	A systematic representation of the graticule with areas of little or no importance for a particular purpose eliminated and the remainder brought close together.
conformal map projection	A systematic representation of the graticule on which the shape of any small area of the surface mapped is unchanged; also called an orthomorphic map projection, it contrasts with an equal-area map projection.
contour	An imaginary line connecting all points which are at the same elevation above or below a datum surface, usually mean sea level.
contour interval	The vertical distance between two adjacent contour lines.
controlled mosaic	An assemblage, usually of rectified aerial photographs, oriented and scaled to horizontal ground control.
coordinate system	A graticule, or a Cartesian grid, in which points are located from two (or three) axes which intersect at a point.
dasymetric map	A representation in which colour or shading is applied to areas which have homogeneity, within specific limits, and in which it is not necessary

	for the colour or shading to be limited by statistical or administrative boundaries.
datum	Any numerical or geometrical value, surface, line, or point which may serve as a base or reference for other quantities.
declination	See magnetic declination.
deformation	See map distortion.
density symbol	Shading, or colour, used to cartographically represent quantity; usually the greater the amount, the deeper the shading or colour.
dimensional stability	The ability of material to maintain size caused by changes in moisture content and temperature.
distortion	See map distortion.
dot map	A systematic representation of earth phenomena in which dots (usually of uniform size) each represent a specific number of the distribution being mapped.
equal-area map projection	A systematic representation of the graticule on which the area of any enclosed figure on the map is equal to the area of the corresponding figure on the globe of the same scale; it contrasts with a conformal projection. Also called equivalent map projection.
field survey	See ground survey.
flow line	A linear cartographic symbol in which the width varies in proportion to the quantity being mapped.
form line	A linear symbol resembling a contour, but often broken or dashed, representing only approximate elevation and used to show the shape of the terrain rather than actual height.
four-colour process	See process colour.
fractional scale	See representative fraction.
general map	A systematic representation of an area showing a variety of geographical phenomena (eg. coastlines, political boundaries, transportation lines) used for planning, location, reference, etc.; it contrasts with a thematic map.
generating globe	A model of the sphere used for the development of perspective map projections, or a theoretical sphere to which projections may be referred for comparative purposes. The radius of the generating globe bears the same relationship to the earth as is denoted by the representative fraction of the resulting map.
geo-cartography	Mapping of the earth phenomena in contrast to the mapping of extraterrestrial and other bodies.
geographical north	See north.

geographical scale	See small-scale.
globe gore	A lune-shaped segment which can be fitted to the surface of a sphere with little distortion or deformation.
graduated circle	A disc-shaped symbol proportional in actual area, or appearance, to the amount of the phenomena being mapped relative to other similarly shaped symbols. Also called a proportional circle.
graphical scale	A graduated line by means of which distances on a map or chart may be measured in terms of ground distances; also known as a bar scale or linear scale.
graticule	A network of lines representing the earth's parallels of latitude and meridians of longitude.
great circle	A line on the earth's surface, the plane of which passes through the centre of the globe. This shortest distance between two points on the sphere is also known as an orthodrome.
grid	A (Cartesian) reference system of two sets of parallel lines intersecting at right angles forming squares; also used loosely of the (earth) graticule.
ground survey	Measurement and mapping in the field, as distinguished from aerial survey.
hachure	A short line running in the direction of maximum slope to indicate in relation to other such lines by thickness and spacing, the relief of the land.
high latitude	A polar or sub-polar area of the north.
hypso-metric tinting	A method of showing relief on maps and charts by colouring, in different shades, those parts which lie between different levels.
inset map	A separate map, usually of a different scale than the main map, positioned within the borders of a larger map.
intermediate-scale map	See chorographic-scale map.
interrupted map projection	A systematic representation of a graticule in which the origin or central meridian is repeated in order to reduce peripheral distortion; also known as recentered projection.
inverted image	See psuedoscopic image.
isarithm, isogram, isoline	See Appendix B.
isometric diagram	A representation simulating the third dimension, in which the scale is correct along three axes.
large-scale map	A systematic representation of a small land area (with a representative fraction arbitrarily set at 1:75,000 or greater); also sometimes called topographic scale.
layer tinting	See hypso-metric tinting.

legend	An explanation of, or key to, the cartographic symbols used on a map, diagram, or model.
levelling	The operation of measuring vertical distances, directly or indirectly, to determine elevations.
libration	A real or apparent oscillatory motion, particularly on the moon. This results in more than half of the moon's surface being revealed to an observer on the earth even though the same side of the moon is always towards the earth.
line[liner] symbol	A distinctive line used to represent features, real or theoretical, which have length but little or no width (eg. roads, political boundaries).
liner scale	See graphical scale.
low latitude	A tropical or sub-tropical area of the earth.
loxodrome	See rhumb line.
magnetic declination	The angle between the magnetic and geographical meridians at any place expressed in degrees, east or west, to indicate the direction of magnetic north from true north.
magnetic north	See north.
magnetic variation	Used as a synonym for magnetic declination but, more specifically, to indicate changes in this relationship within certain time limits i.e. temporal variation.
map data	Specific cartographic information plotted in relation to base data.
map distortion	Alteration in shape owing to the transformation of the sphere or spheroid, or part of such a figure through projection on a plane surface; also called map deformation.
map projection	Any systematic arrangement of the meridians and parallels (graticule) of the allside curving of a sphere or spheroid, or a part of such a figure, on a plane surface.
mean sea level (MSL)	The average height of the surface of the sea for all stages of tide.
metes and bounds survey	The description of the boundaries of tracts of land (eg. properties) by giving the bearings and length of each successive line, often keyed to an ownership list.
mid-latitude	An area between the sub-tropical and sub-polar areas of the earth.
mosaic	See controlled mosaic and uncontrolled mosaic.
natural scale	See representative fraction.
normal case of a projection	The mathematically simplest aspect of a representation of the graticule (typically principal directions in the representation coincide with

	those on the graticule). See oblique map projection and transverse map projection.
north	The primary reference direction relative to the earth. Magnetic or compass north is the direction of the north-seeking end of a magnetic compass needle, not subject to local disturbances. True, astronomical, or geographical north is the northern direction of the meridian at the point of observation. Grid north is the direction of the north-south lines on a map coincident with true north only at the meridian of origin.
oblate spheroid	An ellipsoid of rotation, the shorter axis of which is the axis of rotation. The earth is approximately an oblate spheroid.
oblique map projection	A systematic representation of the graticule with an axis inclined at an angle between 0 and 90 degrees, but neither of those two specific angles. See normal case of a projection and transverse map projection.
orientation	The act of establishing, or the state of being in, correct relationship in direction with reference to the points of the compass.
orthdrome	See great circle.
orthomorphic map projection	See conformal map projection.
parallax	The apparent displacement of the position of a body, with respect to a reference point or system, caused by a shift in the point of observation.
perspective diagram	A representation simulating the third dimension, with the appearance to the eye of objects correct in respect to their relative distance and position.
photogrammetry	The science or art of obtaining reliable measurements, and/or preparing maps and charts, from aerial photographs using stereoscopic equipment and methods.
photolithography	A method of printing in which the original subject is photographed and the consequent image is transferred to a (metal) plate for lithographic printing. Loosely used for the whole process of lithography, and vice versa.
pie graph	Circular symbol divided into sectors to indicate proportions of a total value. Also known as a sectored circle.
planimetric map	A systematic representation of land with only the horizontal positions of features shown. Contrasts with a topographic map.
plastic scribing	See scribing.
plastic shading	See shaded relief.
point symbol	A distinctive device used to represent features, real or theoretical, usually having limited areal extent (eg. settlements). However, such symbols are sometimes used in combination with other such symbols to show density, eg. dot map.

process colour	A photo mechanical method of printing in which the separation of the colours of the original is accomplished mechanically and photographically. It includes, as a special case, four colour process in which filters and screens are used to break images into four colours (red, yellow, blue, and black) which, when recombined at the printing stage will simulate essentially all colours in the original.
profile	A vertical section of the surface of the earth and/or the underlying strata, along any fixed line. It often involves vertical exaggeration.
prolate spheroid	An ellipsoid of rotation, the longer axis of which is the axis of rotation.
proportional circle	See graduated circle.
psuedoscopic image	A three-dimensional impression which is the reverse of that actually existing as in photographs, shading, etc. of relief. Also called an inverted image.
range line	In the United States Public Land Survey a boundary of a township, surveyed in a north-south direction.
recentered map projection	See interrupted map projection.
reconnaissance map	The cartographic product of a preliminary examination or survey of an area and therefore of a lower order of accuracy than later more rigorous surveys.
remote sensing	The detection and/or the recording of data about an object without having the sensor in direct physical contact with the object.
representative fraction (RF)	The scale of a map or chart expressed as a fraction or ratio which relates unit distance on the map to distance measured in the same unit on the ground eg. 1:1,000,000. Also called a natural scale or fractional scale.
rhumb line	A line on the surface of the earth making the same angle with all meridians. Also called a loxodrome or line of constant compass bearing, it spirals toward the poles in a constant, true direction.
scale	The ratio of a distance on a map, globe, model, photograph, etc., to its corresponding distance on the ground or another graphical representation.
scribing	The process of preparing a negative (or positive) which can be reproduced by contact exposure. Portions of a photographically opaque coating are removed from a transparent (usually plastic) base with specially designed tools.
section	In the United States Public Land Survey the unit of subdivision of a township. Normally a quadrangle of one mile square, there are 36 such units in a township.
sectored circle	See pie graph.

shaded relief	The rendering of landforms by continuous graded tone to give the appearance of shadows thrown by a light source normally located above the northwest of the map.
small-scale map	A systematic representation of a large land area; also called a geographical-scale map.
spherical coordinates	A system of polar coordinates in which the origin is in the center of the sphere and the points all lie on the surface. Also loosely known as a spherical grid.
spheroid	Any figure differing slightly from a sphere; in geodesy one of several mathematical figures closely approaching the undisturbed mean sea level of the earth extending continuously through the continents (geoid) used as a surface of reference for geodetic surveys.
spot elevation	A point on a map or chart marked usually by a dot, with a numerical expression of elevation; also called spot height.
standard line	A parallel, meridian or other basic linear feature of a map projection along which the scale is as stated on the map or chart, and which is used as a control line in the computation of a map projection. Also called standard meridian or standard parallel.
statistical surface	A theoretical three-dimensional figure resulting from isopleth, choropleth, or other forms of quantitative mapping.
stereoscope	A binocular optical instrument to assist an observer to view photographs and diagrams to obtain a mental impression of a three-dimensional model.
strip map	A cartogram showing, in diagrammatic form, routes, etc., from one point to another along a more or less straight line.
symbol	A diagram, design, letter, character, or abbreviation placed on maps, charts, etc, which by convention, usage or reference to a legend is understood to stand for, or represent, a specific characteristic or feature. They may be in the form of an areal, linear, or point or other symbol.
synoptic chart	A systematic representation to indicate conditions prevailing, or predicted to prevail over a considerable area at a given time eg., weather map.
thematic map	A systematic representation of an area normally featuring a single distribution as its map data (eg. population) and for which the base data serve only to help locate the distribution being mapped. In its function it contrasts with a general map.
topographic map	A systematic representation of a small part of the land surface showing physical features (eg. relief, hydrography), and cultural features (eg. roads, administrative boundaries). These large-scale maps present both vertical and horizontal features in measurable form.
topographic-scale map	See large-scale map.
township	In the United States Public Land Survey a quadrangle of approximately 6 miles on a side consisting of 36 sections.



township line	In the United States Public Land Survey a boundary of a township surveyed in an east-west direction. See also range line.
transverse map projection	A systematic representation of the graticule with its axis rotated 90 degrees (right angles) to that considered as the normal case of a map projection in any particular example. See also oblique map projection.
uncontrolled mosaic	An assemblage of unrectified prints, the detail of which has been matched from print to print without ground control or other orientation.
variation	See magnetic variation.
verbal scale	An expression of the relationship between specific units of measure on the map and distance on the ground (eg. one inch equals one mile); a less general expression than the representative fraction, in this case 1:63,360.
vertical exaggeration	The change in a model surface or profile created by proportionally raising the apparent of all points above the base level while retaining the same base.
volumetric symbol	A cartographic device (eg. simulated sphere) to give a quantitative impression of the third dimension.
zenithal map projection	See azimuthal projection.