

WHAT ALL GOOD MAPS SHOULD (MUST) HAVE (Bach & Freelan, from Egeo-352 Computer Cartography)

Regardless of the cartographic style or content, most maps have the following common elements. These are the "Golden Rules of Cartography" (though in truth there are no 'rules' in cartography).

1. **SCALE:** the scale of the map is typically indicated by a graphic bar scale, a representative fraction or a verbal scale. The reader must be able to determine the relationship between a unit of measure on the map and a unit of measure in the real world.
2. **ORIENTATION:** a map should indicate which way is north (and/or south, east and west). Commonly this is done by a north arrow or compass rose. Orientation may also be shown by graticule or grid marks (e.g. lines of latitude and longitude). By convention north is towards the top of the page (thus some maps do not have north arrows), but the orientation must still be given for a 'proper' map. North does not have to be at the top of the page and a north arrow is essential in maps where it is not.
3. **TITLE:** the title should be in a large font, easily identifiable as the title of the map and should include *descriptive* text as to the location and purpose of the map. If the map is thematic, the theme should be included in the title. For example: *Corn Production in Washington, 1990*. The title is usually the largest font size of all lettering on the layout, however, it should not dominate the map graphic itself. The title may or may not be in a box and does not need to be at the top of the page (though it often is). For published materials (e.g., books or articles) the title may be included in a figure caption instead.
4. **BORDER (or Neatline):** a border identifies exactly where the mapped area stops. The border is often the thickest line on the map and should be close to the edges of the mapped area. The distance between the map and the border should be the same on all sides (balanced).
There can also be a border around the entire map layout (enclosing and grouping the title, legend, text boxes, etc.). Both of these borders are sometimes referred to as a '*neatline*.' In addition, there is sometimes a thin additional line just outside of a border (accentuating it and ideally making it more visually appealing) that may also be referred to as a neatline.
5. **LEGEND:** a legend defines the symbols or colors (including shades of gray and patterns) used on the map. Maps do not need legends if the symbology is so common or simple as to be easily understood by the reader. However, it must be clear what each marker or line type, weight and pattern represents. The legend does not need to be labeled "Legend." The more complicated the symbology on a map the more important the legend becomes.
6. **MAP CREDITS:**
 - **SOURCE OF DATA** (especially on thematic maps)
 - **NAME** of the cartographer
 - **DATE** of the map creation/publication
 - **DATE** of the map data
 - **PROJECTION** of the map (especially small-scale maps)
7. **LOCATOR MAP (INSET):** a locator map is needed if the area of the map is not easily recognizable or is of large scale. For example, if you map Whatcom County, there should be an inset map of Washington, showing the location of Whatcom County. Inset **DETAIL** map(s) may also be used to show an area of the map in greater detail (larger scale).
8. **EFFECTIVE GRAPHICAL DESIGN:** the layout design is as important as effective sentence structure is to written text. Layout design refers to the planning and decision making processes involved in the visual display of the spatial data. You can achieve balance by rearranging the map elements (north arrow, legend, scale, title, etc.) and changing size of the text, border, etc. The map and map elements should be:
 - Neatly drawn
 - Appropriately and consistently generalized
 - Symmetrically balanced (avoid crowding or large blank areas)
 - Without unnecessary clutter (keep it simple, be wary of 'artistic' details)
9. **VISUAL HIERARCHY:** a hierarchy of symbology should be used for the lettering, line weights and shading. More important features are typically larger and/or darker, less important/background information should be smaller and/or lighter. At the same time, do not "over weight" or "under weight" features.
10. **PURPOSE:** All maps have a purpose which should influence every element of the map and the map layout. A cartographer should be able to clearly articulate the purpose of their map and should keep the audience (who the map is going to be used by) and the client (who the maps is being produced for) in mind.

NOTE: Any, or all, of the above 'rules' can be violated at the discretion of the cartographer IF doing so produces a better map (better serving its purpose and audience).
In general, with cartography, less is more (avoid excessive clutter).