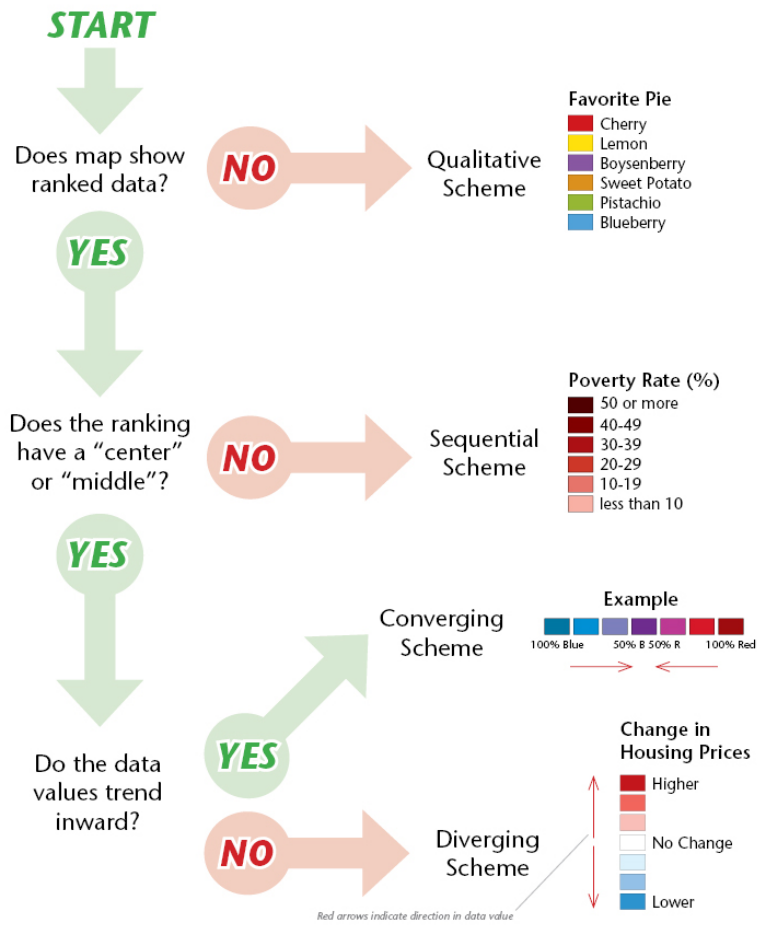
# Using Color in Maps

## 1 Plan on Purpose

Before you select colors for your map, it is important to understand who will be reading it, and how it will be used. In the following steps, you will choose an appropriate color scheme and then a color palette to best communicate the information you are trying to convey to the reader from the data included in your map. Particular color dimensions suggest particular characteristics of your data. Color hue suggests qualitative differences, color value ordered, quantitative differences. These guidelines apply to point, line, and area map symbols (Krygier 2011). Special consideration for color blindness should be noted when choosing to use color. The following examples are primarily for color on choropleth maps.

## 2 Choose A Color Scheme




## 3 Pick Your Color Palette

### Viewing Color Through A Cultural Lens

Culture has an influence over how colors are perceived. Different hues have conventional meanings based on nature, politics, religion, etc. Some examples are:

| | |
|---|---|
| blue: | water, cool, positive numerical values, serenity, depression, melancholy, truth, purity, formality, depth, restraint, loneliness, Democrat |
| green: | vegetation, lowlands, forests, youth, spring, nature, envy, greed, jealousy, cheap, ignorance, peace |
| red: | warm, important items (roads, cities...), action, life, blood, fire, heat, passion, danger, power, loyalty, bravery, anger, excitement, warning, Republican |
| orange: | harvest, fall, abundance, fire, attention, action, warning |
| yellow/tan: | dryness, lack of vegetation, intermediate elev., "hot", cheerful, dishonest, youth, light, hate, cowardice, joy, optimism, spring, strong, warning |
| brown: | landforms (mountains, hills...), contours, cozy, dull, reassuring, depressing |
| purple: | dignity, royalty, sorrow, despair, richness, elegant |
| black: | mystery, strength, heaviness |
| grays: | quiet, reserved, sophisticated, controlled |
| white: | purity, clean, faith, illness |

### Color Dimensions

Our eyes are sensitive to blue, green, and red wavelengths of energy with overlap so we can sense the entire spectrum (red, orange, yellow, green, blue, indigo, violet). One way to think about how people perceive colors is in terms of three dimensions of color perception: hue, value (lightness), and intensity (saturation, chroma).

**HUE:** names for psychological experiences of particular electromagnetic wavelengths. Humans can perceive millions of different hues.

*Visual variables: Hues are qualitatively different, thus good for showing **qualitative data**.*

**VALUE (LIGHTNESS):** perceived lightness and darkness; easy to understand in a chromatic (color) or chromatic (greys) series. Humans can perceive thousands of variations in value or lightness.

*Visual variables: Values are quantitatively different, thus good for showing **quantitative data**.*

**INTENSITY:** amount of pure hue in a color relative to neutral grey. Example: radishes and tomatoes.

*Visual variables: Intensity is subtle and good for showing binary (yes, no), **qualitative**, **and quantitative data**.*

### For More Information:

http://colorbrewer2.org/
*(dynamic tool with info on appropriate colors for maps)*

http://www.freac.fsu.edu/download/MM-color.pdf
*(complete chapter on color from Making Maps 2nd Ed., be sure to review the examples of visual variables and color on pages 232-233)**

http://www.shadedrelief.com
*(great articles on map colors and use of tints)*

http://colororacle.org/
*(application that simulates how color is seen by someone with color blindness)*

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