Shape, Size, Color (hue, saturation-richness, value-lightness), Pattern, Orientation

**REVIEW THE TABLE ON PHONE**

Feature Model:

Location in GIS data can take different types of shape and geometric representation. This is a feature model approach to phenomena in the world

Equal Interval

Pros:

Easy to compute, easy to interpret classes, (though sometimes not the map)

Can be used to make a series of maps comparable

Cons:

Does not consider data distribution (e.g., can break up clusters)

Some classes may be empty

Quantiles

Equal numbers of **observations** (polygons) in each class

Pros:

Easy to compute class limits

If enumeration limits similar in size, each class will cover about the same area (gives a sense of balance)

Works for ordinal data because it only uses the relative ordering of data

Cons:

Does not consider data distribution (e.g., can break up clusters)

Categories may have odd ranges

Mean Standard Deviation

Classes determined by standard deviation

Pros:

Constant class intervals

Yet does not consider the distribution of data, in some senses (e.g., mean can be a useful dividing point in some datasets)

Cons:

Most appropriate for data that follow a normal distribution (thus, data whose histogram have a single, symmetric peak)

Readers must also understand basic statistics

[Manual] Natural Breaks

Use histogram to find natural groupings of data

You often are choosing the breaks to minimize differences between data values placed in same class

Preserves clusters and natural groups

Classification will fit data distribution

Decisions about breaks can be subjective and may vary from person to person

[Algorithmic] Optimized Natural Breaks

Considers variances in data

Selects breaks that maximize total variance within classes and maximizes distance between classes

A certain kind of “optimal”

But can be complicated to meaningfully interpret

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Property Preserved

Area: “Equal Area”, “Equivalent”

Angle/ (small) Shapes: “Conformal”

Distance from a line or point or two: “Equidistant”

Direction from the center: “Azimuthal”

Planar topology requires that all lines start and end in nodes and no two lines cross, as with polygonal objects. However, polygon information is not maintained. With the exception of polygon filling, planar and polygonal objects appear the same. Planar topology may be appropriate for hydrology if no lakes are present. Planar topology may also be appropriate for road systems that lack underpasses and over passes or other features that require network topology for correct representation. Note the presence of nodes (red) at every position where lines would otherwise cross, as well as at the dangling ends, in the roads at the left

**Sliver** Polygons is a technical term of the field of **Geographic Information System** and describes unwanted small polygons resulting from layer intersection. **Sliver** Polygons are small areas which result from spatial overlays of different **GIS** layers.