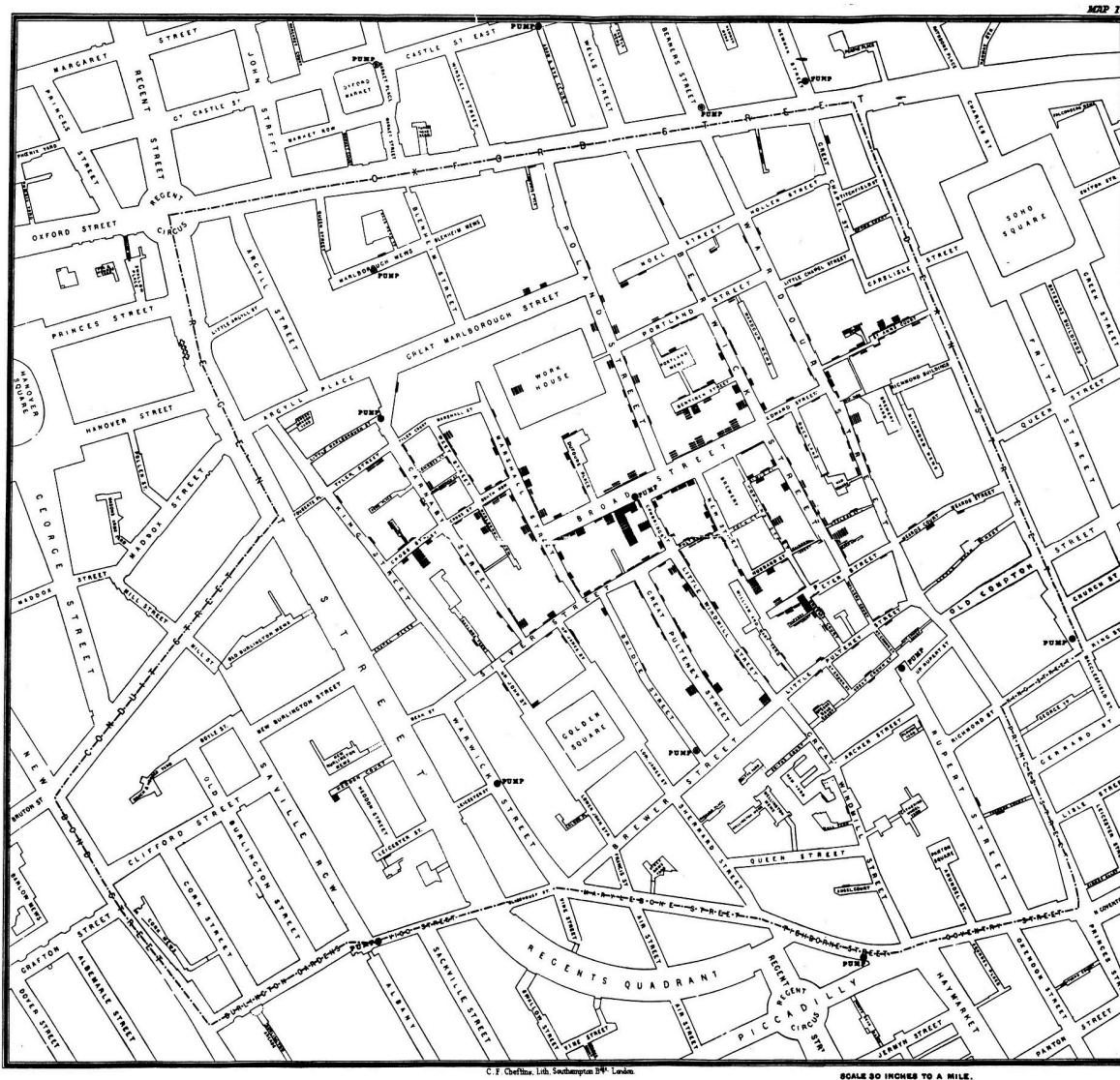


What is geographic information?

- Geographic Information is data that can be given a location in space.
 - Almost anything is geographic information, however some data have a more obvious spatial component than others.
 - Some questions can be answered more obviously by mapping them than others, however we may not realize this until the data is mapped.

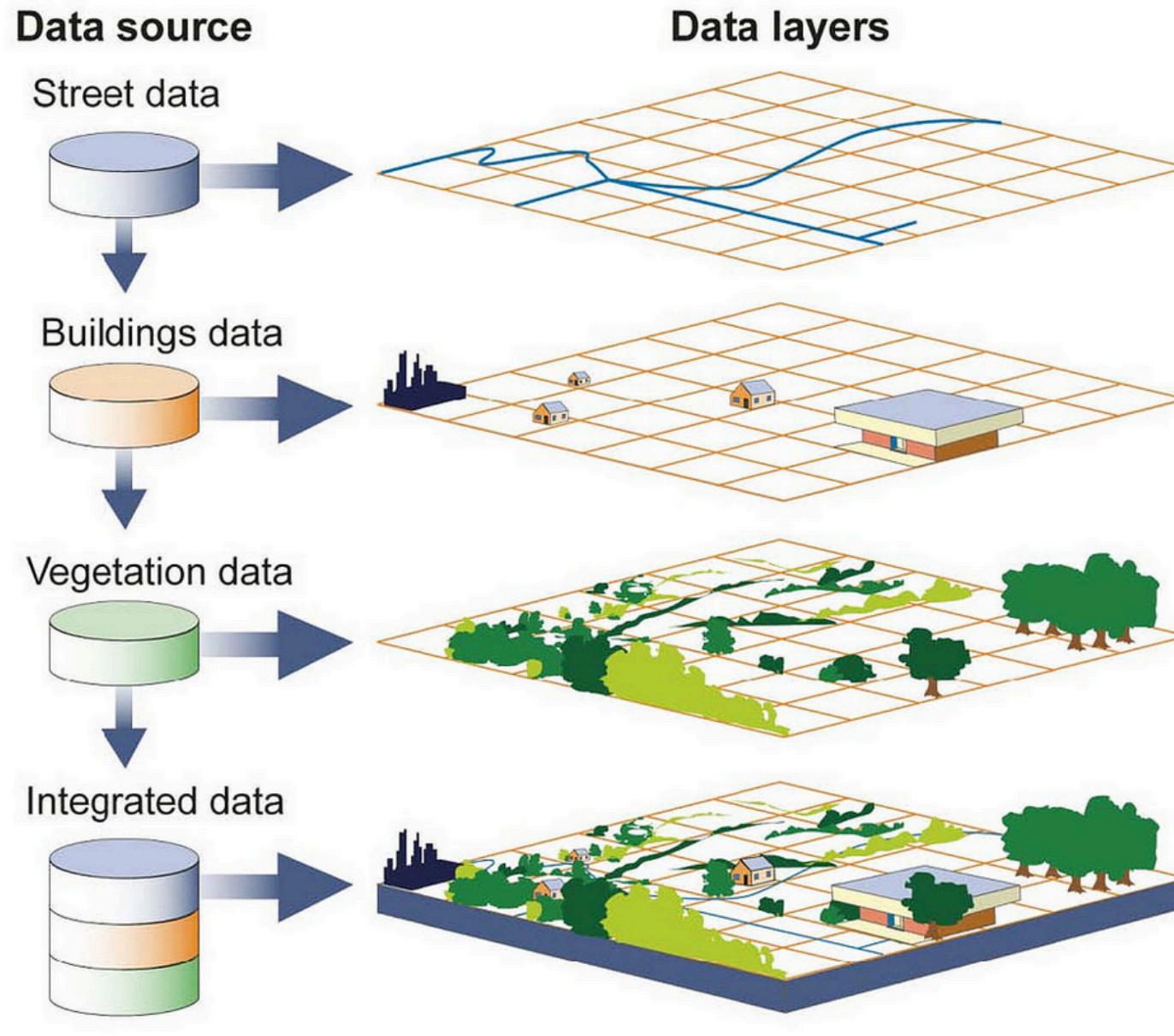
John Snow's 1854 Cholera outbreak map



What is GIS?

- Geographic Information System:
 - A system to organize, analyze and visualize spatial data
 - *Spatial data* is information with a location attribute
- Geographic Information Science:
 - The academic discipline that develops and evaluates the techniques and concepts used for managing and representing geographic information.

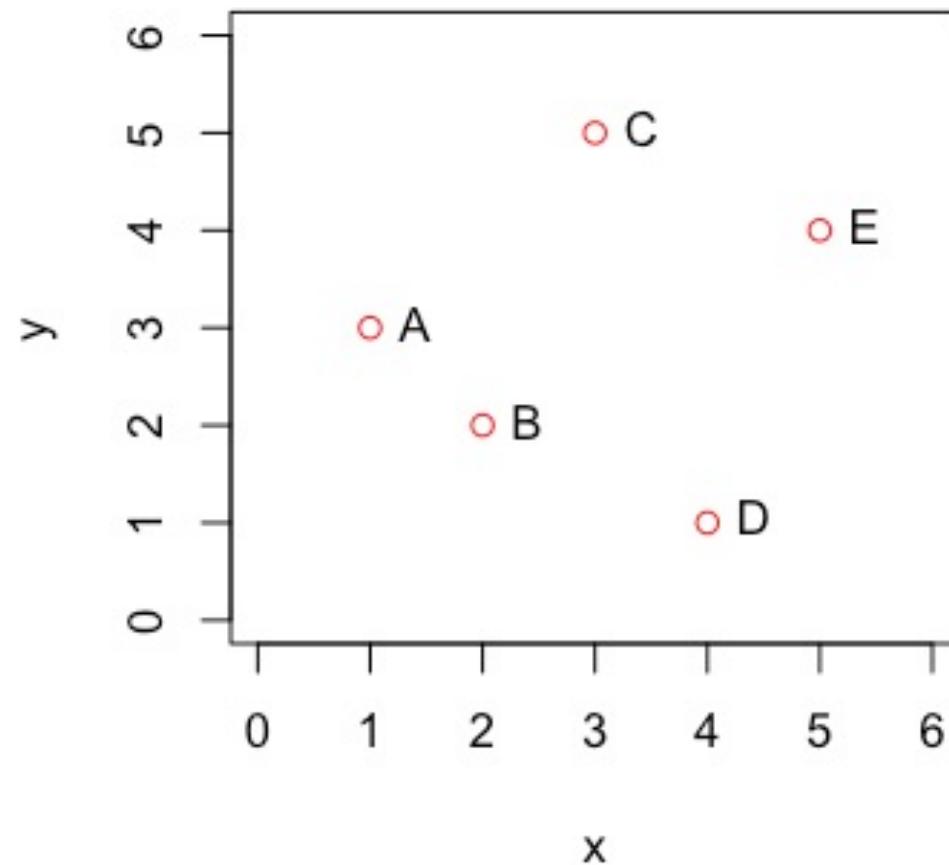
The world as overlapping layers



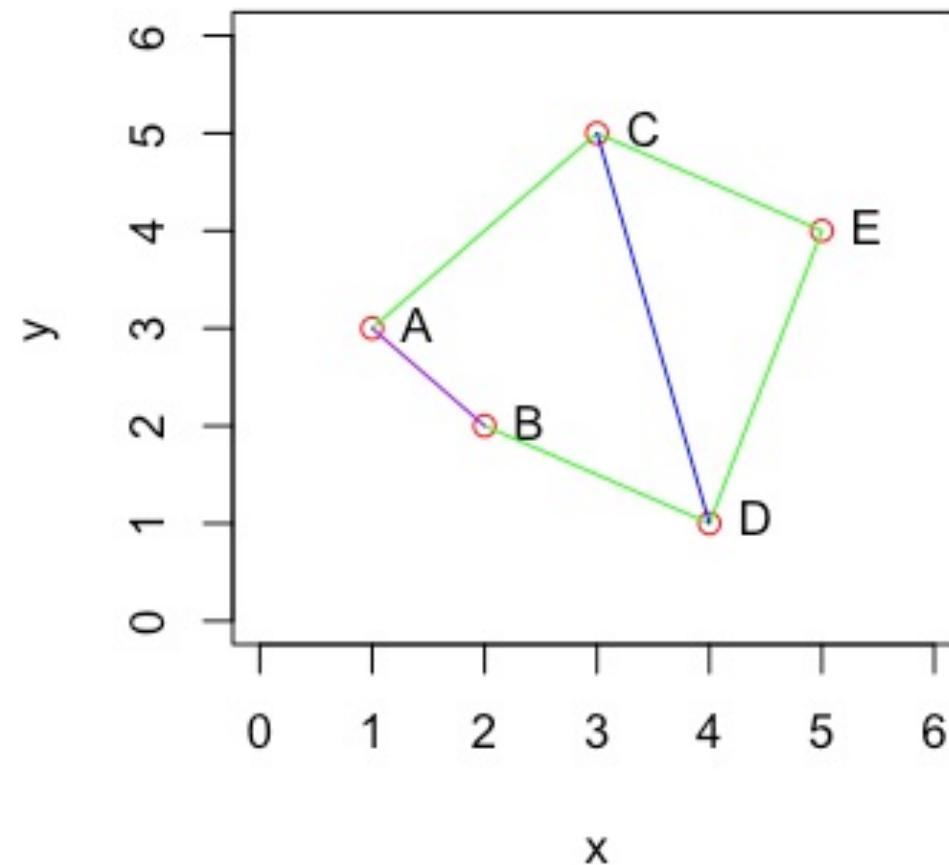
How we represent layers

- Vector Spatial Data Type
 - Points
 - Lines
 - Polygons
- Raster Spatial Data Type
 - Discrete or Thematic
 - Continuous

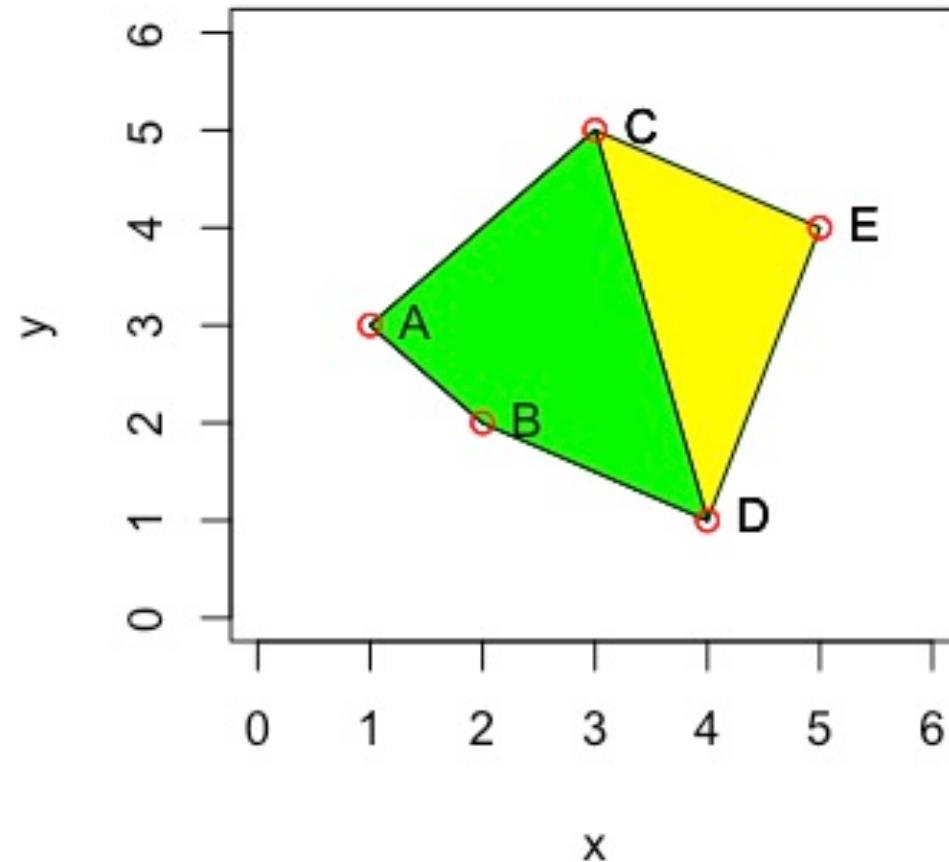
What can we represent with points?



What can we represent with lines?



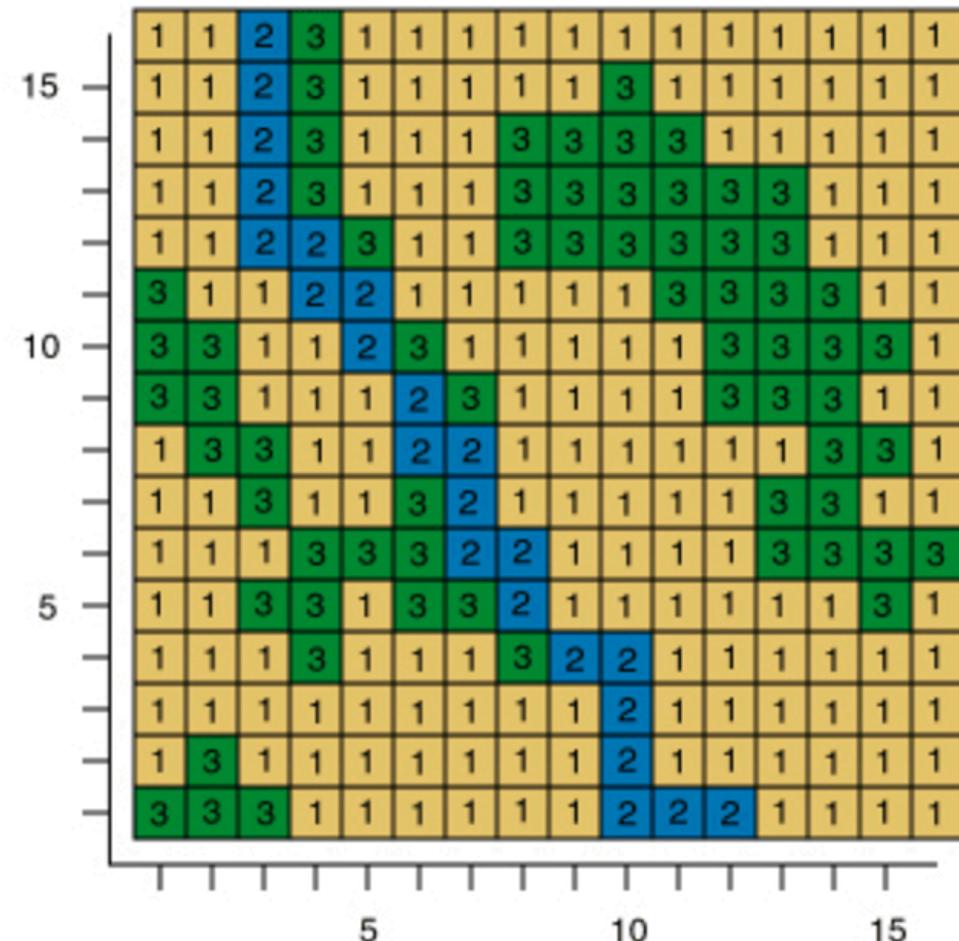
What can we represent with polygons?



Raster Spatial Data Model

Raster

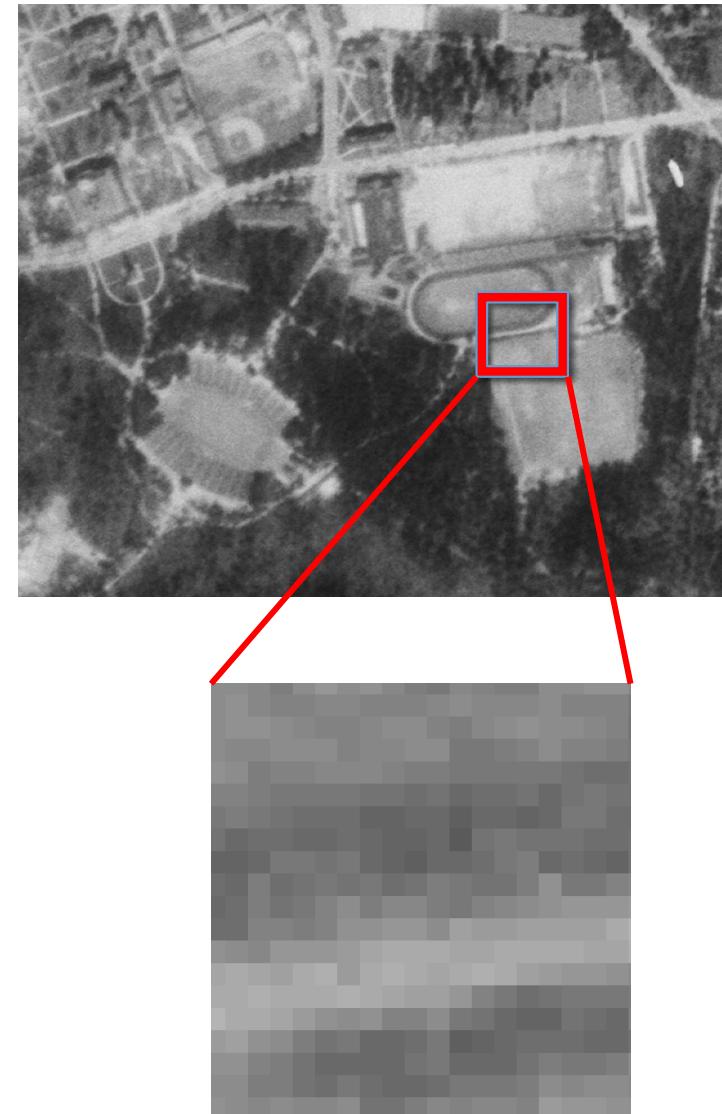
- Representation of the world as a set of grid cells or pixels
 - **Discrete** raster (thematic)
 - A raster often resulting from the classification of features in a landscape and not from a quantitative measurement



Raster Spatial Data Model

Raster

- Representation of the world as a set of grid cells or pixels
 - **Continuous** raster (gradient)
 - A raster often resulting from the measurement of an environmental variable such as temperature, elevation or the reflection of light on a surface (aerial photography).



Saving data in your computer?

- Use a hierarchical folder/file system
- Top level folder (project) containing subfolders specific to the project
- Example
 - Summer2020
 - GEOG370
 - Lectures
 - Readings
 - Project
 - Class_Exercises
 - Video_Exercises
 - Tech1
 - Project
 - Vectors
 - Images
 - Maps
 - Other
 - Tech2