

1. Fundamentals of Graphics
 - (a) Exercise: visualizing two numbers
 - (b) Maps: c. 1000 BCE
 - Space as space**
 - Time as space**
 - quantity as space**
 - (c) Time as Space.
2. The standard charts
 - Invented the Line Chart and Bar Chart: 1786**
 - (a)
 - i. A. Line Chart
 - (b) William Playfair
 - Invented the Line Chart and Bar Chart: 1786**
 - i. Line Chart, 1786
 - ii. look closely here.
 - iii. Invented the Pie Chart: 1801
 - iv. Circle Chart
 - v. What Playfair doesn't do.
 - (c) Multivariate division:
 - (d) Scatter Plot
3. 19th Century: A golden age.
 - (a) Ecosystem for Plotting:
 - (b) Minard
 - i. The Pictogram, 1884
4. The Dark Ages
5. The New Golden Age
6. Why R