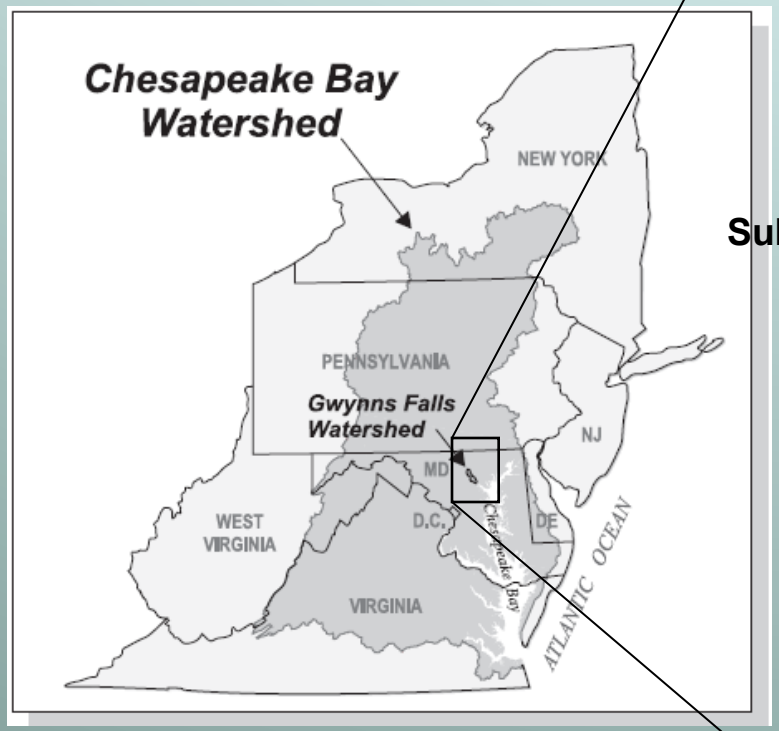
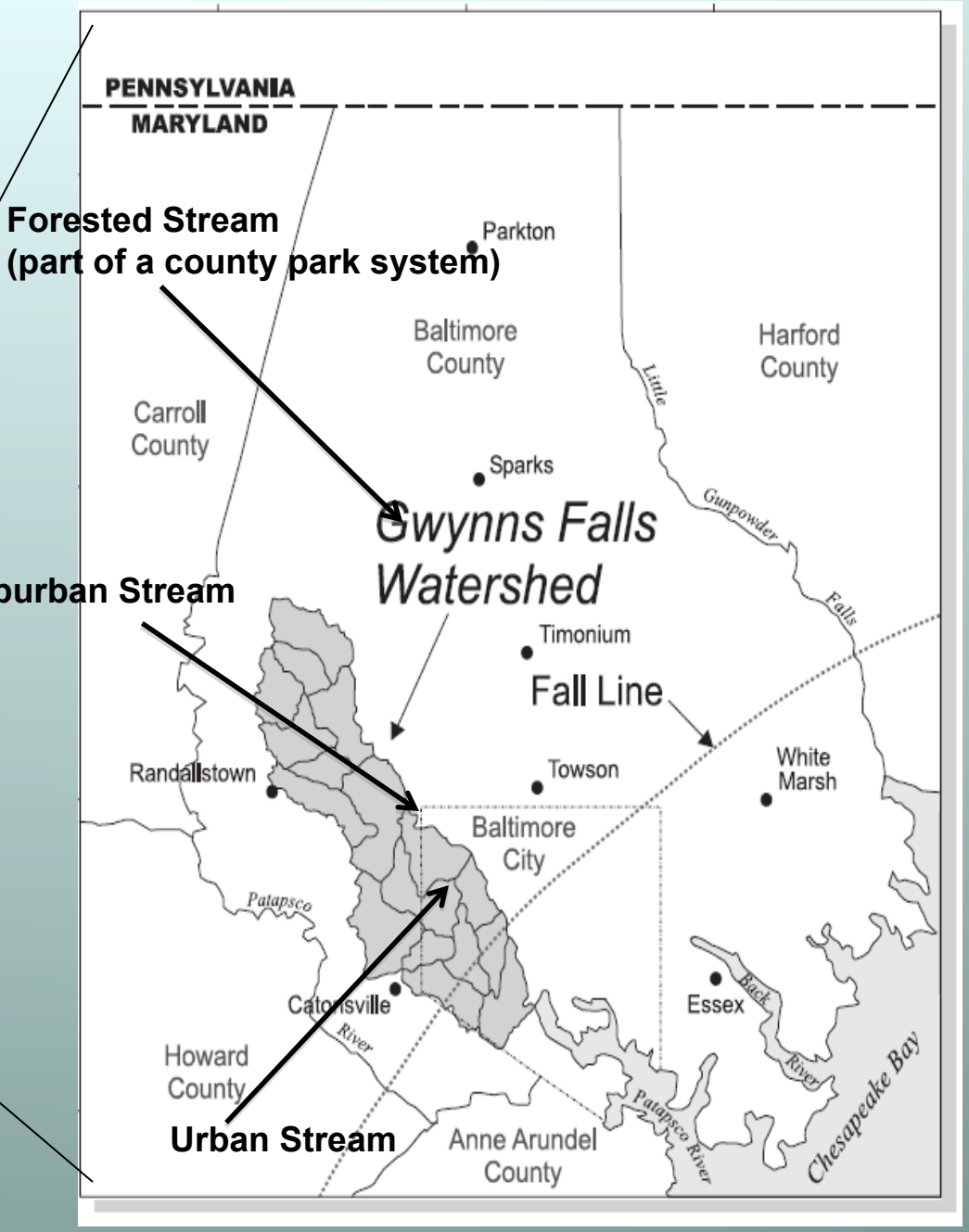
Baltimore
Data Collection Sites





Data from three sites…

Forested

Suburban

Urban

Where would you expect to find the saltiest water?

Forested

population density:
8050 people
per square mile

Suburban

population density:
3000 people
per square mile

Urban

population density:
0 people
per square mile

Where would you expect to find the *least* salty water?

Forested

population density:
8050 people
per square mile

Suburban

population density:
3000 people
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Urban

population density:
0 people
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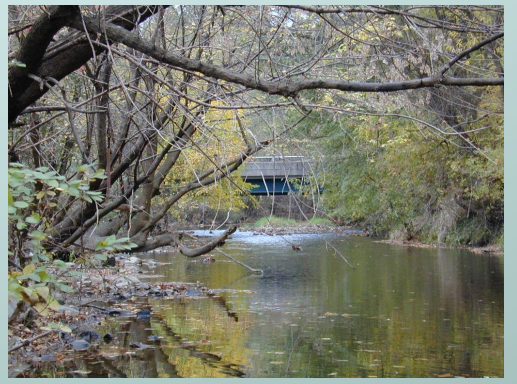
How would you test these predictions?

Look at your dataset for guidance.

Dr. Sujay Kaushal's Research

- Dr. Kaushal analyzed data from streams near Baltimore considered to be urban, suburban, and forested.
- He analyzed samples during each season to determine how salt levels changed.
- He was lucky. The dataset was enormous, going back over 30 years. You are only looking at a subset of the data he and colleagues analyzed.



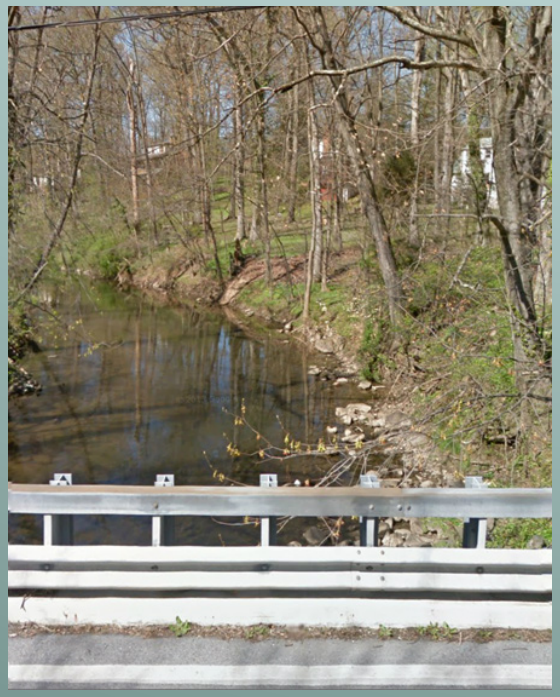
Baltimore area stream

Salt near storm drain

Seasonal Salt Levels in a Forested Baltimore Area Stream

Year	Season	Average Salt Content mg/Liter
2005	winter	2.71
	spring	2.64
	summer	2.79
	fall	2.50
2006	winter	2.43
	spring	2.62
	summer	2.77
	fall	2.65
2007	winter	2.69
	spring	2.72
	summer	3.18
	fall	2.93
2008	winter	2.83
	spring	2.69
	summer	3.10
	fall	2.82
2009	winter	3.10
	spring	2.92
	summer	3.11
	fall	2.92
2010	winter	2.82
	spring	2.81

Seasonal Salt Levels in a Suburban Baltimore Area Stream



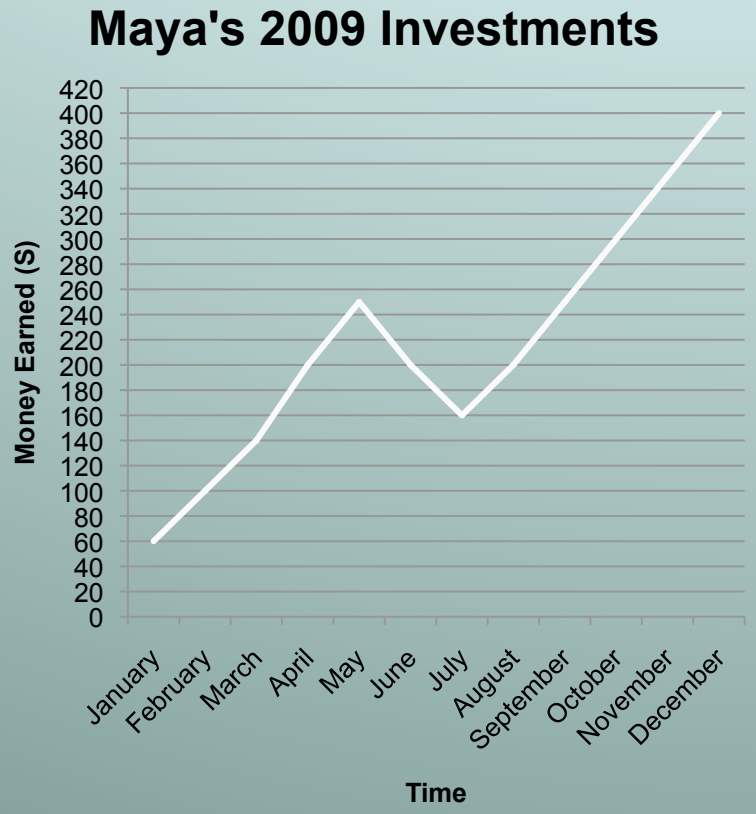
Year	Season	Average Salt Content mg/Liter
2005	winter	419.62
	spring	78.85
	summer	61.42
	fall	156.00
2006	winter	199.49
	spring	78.58
	summer	65.72
	fall	65.12
2007	winter	256.04
	spring	120.95
	summer	71.72
	fall	65.12
2008	winter	221.42
	spring	81.03
	summer	72.80
	fall	75.88
2009	winter	470.16
	spring	100.78
	summer	80.55
	fall	76.62
2010	winter	470.13
	spring	100.26

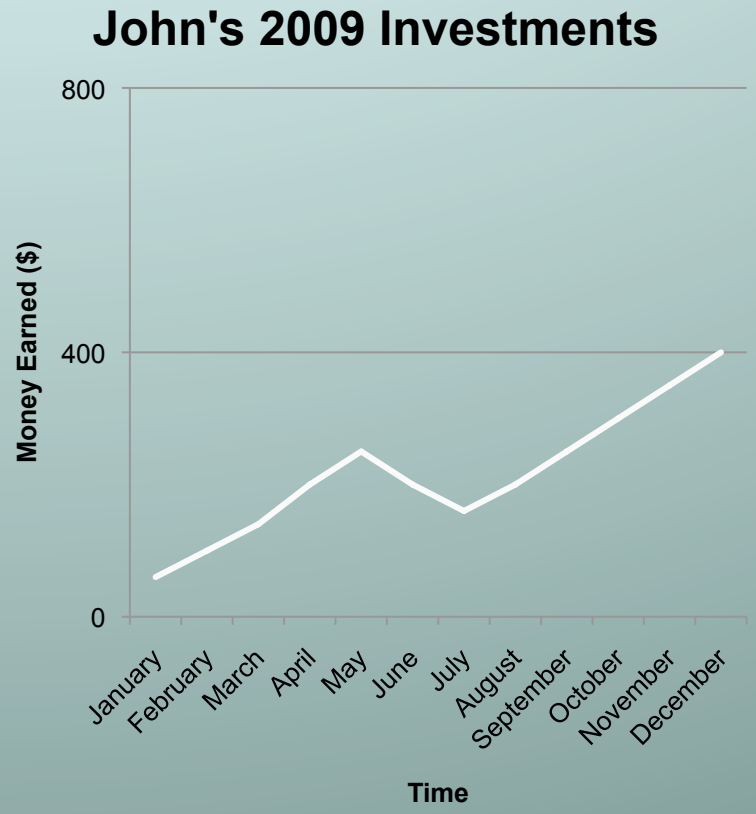
Seasonal Salt Levels in an Urban Baltimore Area Stream

Year	Season	Average Salt Content mg/Liter
2005	winter	1774.62
	spring	523.39
	summer	174.14
	fall	615.38
2006	winter	565.31
	spring	913.23
	summer	530.22
	fall	141.43
2007	winter	1039.32
	spring	378.62
	summer	530.22
	fall	141.43
2008	winter	681.67
	spring	216.52
	summer	168.36
	fall	183.44
2009	winter	1907.54
	spring	273.54
	summer	530.22
	fall	141.43
2010	winter	1170.27
	spring	244.50

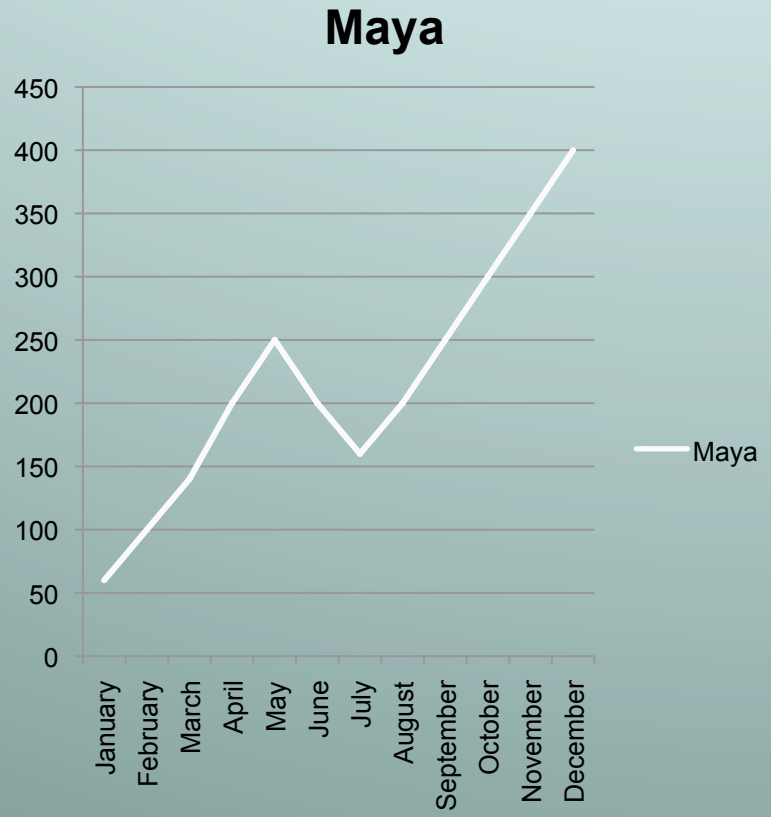
What is the best way to represent the data in order to compare the different data sets?

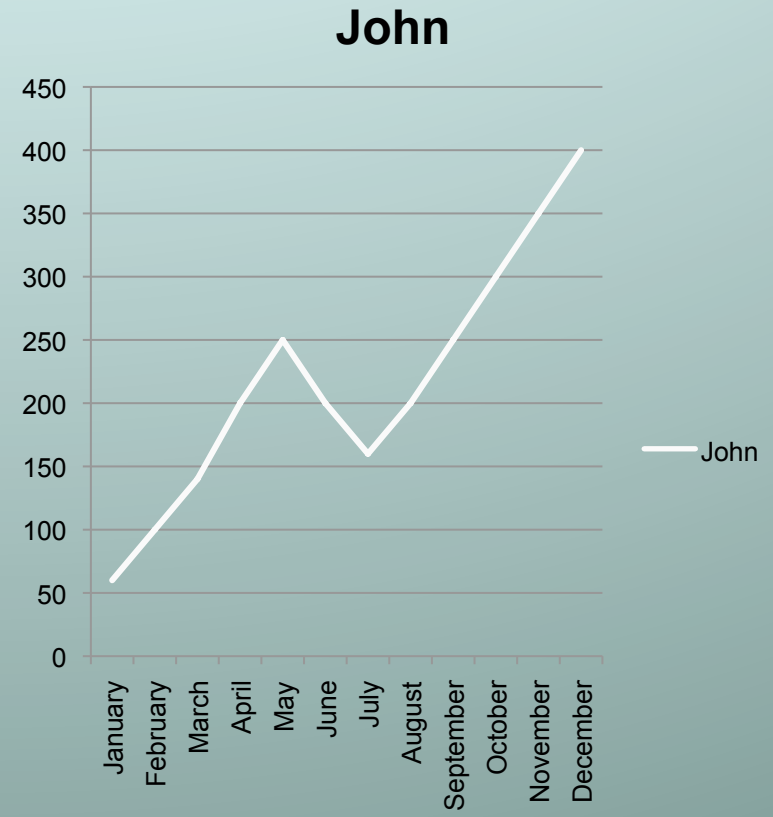
Who made more money?





Who Really Made More Money?





Why is it important to choose an appropriate scale for your data?