

Chapter 7

Inference for numerical data¹

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¹These notes use content from OpenIntro Statistics Slides by Mine Cetinkaya-Rundel.

Comparing mean with ANOVA



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- ▶ The standard methods to test whether these substances are present in a river is to take samples at six-tenth depth.
- ▶ But since these compounds are denser than water and their molecules tend to stick to particles of sediment, they are more likely to be found in higher concentrations near the bottom than near mid depth.

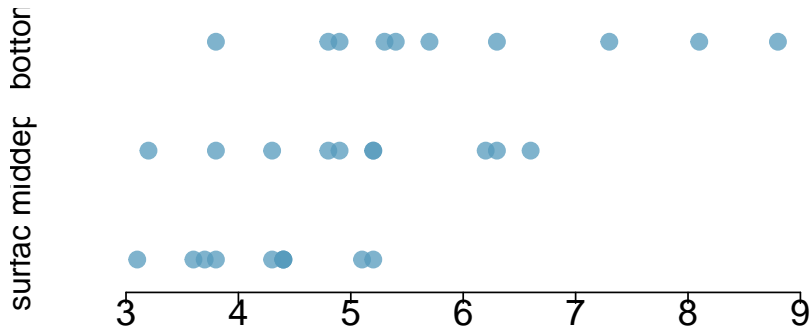
Data

Aldrin concentration (nanograms per liter) at three levels of depth.

	aldrin	depth
1	3.80	bottom
2	4.80	bottom
...		
10	8.80	bottom
11	3.20	middepth
12	3.80	middepth
...		
20	6.60	middepth
21	3.10	surface
22	3.60	surface
...		
30	5.20	surface

Exploratory analysis

Aldrin concentration (nanograms per liter) at three levels of depth.



	n	mean	sd
bottom	10	6.04	1.58
middepth	10	5.05	1.10
surface	10	4.20	0.66
overall	30	5.10	1.37

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- ▶ To compare means of 2 groups we use a Z or a T statistic.
- ▶ To compare means of 3+ groups we use a new test called **ANOVA** and a new statistic called **F**.