

Death Penalty and Homicide Rates

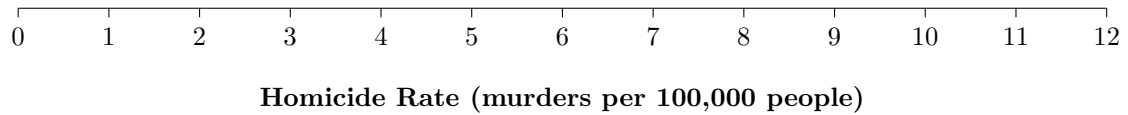
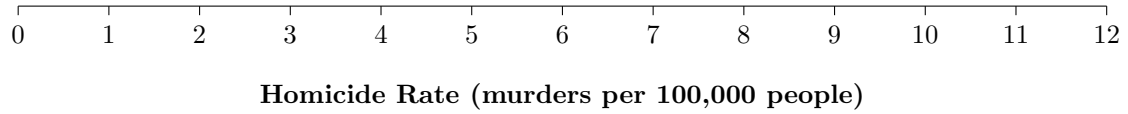
Workshop

Does the death penalty help reduce homicide rates? The table below contains the homicide rate (murders per 100,000 people) for each state in 2014.

States with death penalty		States without death penalty	
State	Homicide Rate	State	Homicide Rate
1. New Hampshire	0.9	1. Maine	1.6
2. Idaho	2	2. Minnesota	1.6
3. Oregon	2	3. Vermont	1.6
4. South Dakota	2.3	4. Hawaii	1.8
5. Utah	2.3	5. Iowa	1.9
6. Washington	2.5	6. Massachusetts	2
7. Wyoming	2.7	7. Connecticut	2.4
8. Colorado	2.8	8. Rhode Island	2.4
9. Nebraska	2.9	9. Wisconsin	2.9
10. Kansas	3.1	10. North Dakota	3
11. Kentucky	3.6	11. New York	3.1
12. Montana	3.6	12. New Jersey	3.9
13. Ohio	4	13. West Virginia	4
14. Virginia	4.1	14. New Mexico	4.8
15. California	4.4	15. Illinois	5.3
16. Texas	4.4	16. Michigan	5.4
17. Oklahoma	4.5	17. Alaska	5.6
18. Arizona	4.7	18. Maryland	6.1
19. Pennsylvania	4.8		
20. Indiana	5		
21. North Carolina	5.1		
22. Arkansas	5.6		
23. Alabama	5.7		
24. Georgia	5.7		
25. Tennessee	5.7		
26. Delaware	5.8		
27. Florida	5.8		
28. Nevada	6		
29. South Carolina	6.4		
30. Missouri	6.6		
31. Mississippi	8.6		
32. Louisiana	10.3		

- For the states with the death penalty, the median will be between which two states? (Hint: The median of N sorted numbers is always in the $\frac{N+1}{2}$ position).
- Find the 5-number summaries of homicide rates for the states with the death penalty and for the states without the death penalty.

3. Make side-by-side boxplots to compare these two sets of data.



4. Find the IQR for each boxplot above.
5. Using the $1.5 \times \text{IQR}$ rule, are any of these states outliers? If so, which ones?
6. Which group of states will have the larger standard deviation in homicide rates?
7. Why are homicide rates called a rate. What does the word **rate** mean in this context?
8. Why bother with homicide rates? Why not compare the total number of murders in each state?