

Dollars for Students

In 2000 the Department of Education published the *Digest for Education Statistics*, a collection of information about education in the United States. They reported the average amount (dollars per student) spent by public schools in each state during the school year 1997-8. The following table divides the states according to whether they lie east or west of the Mississippi River. Write a report comparing the amounts eastern and western states spend to educate their children.

Eastern State	\$ per Student	Western State	\$ per Student
Alabama	5,166	Alaska	9,074
Connecticut	9,221	Arizona	5,122
Delaware	7,963	Arkansas	4,999
D.C.	9,225	California	5,795
Florida	6,183	Colorado	6,099
Georgia	5,947	Hawaii	6,409
Illinois	6,858	Idaho	5,012
Indiana	6,786	Iowa	6,295
Kentucky	6,125	Kansas	6,406
Maine	7,238	Louisiana	5,645
Maryland	7,812	Minnesota	6,795
Massachusetts	8,299	Missouri	6,096
Michigan	7,717	Montana	6,448
Mississippi	4,575	Nebraska	6,584
New Hampshire	6,487	Nevada	5,758
New Jersey	10,233	New Mexico	4,984
New York	9,970	North Dakota	5,353
North Carolina	5,667	Oklahoma	5,398
Ohio	6,808	Oregon	7,348
Pennsylvania	7,777	South Dakota	5,281
Rhode Island	8,627	Texas	5,910
South Carolina	5,643	Utah	4,256
Tennessee	5,274	Washington	6,534
Vermont	7,500	Wyoming	6,718
Virginia	5,938		
West Virginia	6,779		
Wisconsin	7,680		

A complete report will include a visual display (stem-and-leaf plot) and a well-written comparison of the distributions of expenditures (in context, of course).

	Components	Comments
Think	Demonstrates clear understanding of how to make a complete statistical comparison of the two distributions	
Show	Visual: <ul style="list-style-type: none"> ○ stem-and-leaf plots ○ comparative (same scale) ○ well-labeled ○ correctly constructed 	
Tell	Verbal : States conclusions about differences in expenditures, including... <ul style="list-style-type: none"> ○ shapes (E skewed, W symmetric) ○ center (higher in E) ○ spread (greater variability in E) ○ unusual features (outlier in W) The written analysis... <ul style="list-style-type: none"> ○ is clear and concise ○ identifies the W's ○ uses the proper context ○ uses vocabulary correctly ○ avoids speculation 	

Components are scored as **Essentially correct**, **Partially correct**, or **Incorrect**

1: The Graph

E – Has all 4 features

P – Is comparative (perhaps histograms) but constructed or labeled poorly

I – Graph is not comparative (different scales, perhaps), is incorrect, or is missing

2: Shape and Center – Conclusion observes generally higher spending in the East, compares centers, and describes shapes.

E – States general conclusion, estimates centers, and correctly describes shapes.

P – General conclusion not clear, or centers or shapes missing or incorrect

I – Comparison of shapes and centers missing or incorrect

3: Spread and Outliers

E – Observes greater variability in the East and identifies the outlier in the West.

P – Comparison of spread is not clear, or fails to mention the outlier.

I – Comparison of spread is missing or incorrect.

4: Writing

E – Written comparison has all 5 listed properties.

P – Written comparison has 3 or 4 of the listed properties.

I – Written comparison has fewer than 3 of the properties.

Scoring

- E's count 1 point, P's are 1/2
- AP Score = sum of 4 components; rounding based on overall communication quality
- Grade: A = 4, B = 3, etc., with +/- based on rounding (ex: 3.5 rounded to 3 is a B+)

Name _____ AP Score _____ Grade _____