Effects of Outliers

6th Grade Mathematics

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An **<u>Outlier</u>** is a value that lies outside most of the other values in a set of data.

Example 1

The data shows Sara's scores for the last 5 math tests: 88, 90, 55, 94, and 89. Identify the outlier in the data set. Then determine how the outlier affects the mean, median, and mode of the data.

What is the outlier and why?

outlier ➡ 55

Explain what might have caused this outlier.

With the Outlier

55, 88, 89, 90, 94

outlier ➡ 55

mean:	**median:**	**mode:**
55+88+89+90+94 = 416 416 ÷ 5 = 83.2 The mean is 83.2.	55, 88, 89, 90, 94 The median is 89.	 There is no mode.

Without the Outlier

~~55~~, 88, 89, 90, 94

mean:	**median:**	**mode:**
88+89+90+94 = 361	88, $\dfrac{89+90}{2}$, 94	
361 ÷ 4 = 90.25	= 89.5	
The mean is 90.25.	The median is 89.5.	There is no mode.

	Without the Outlier	With the Outlier
mean	90.25	83.2
median	89.5	89
mode	no mode	no mode

Write a couple of sentences describing how the outlier affects the data.