

# Illuminations Unit Plan

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## Student Learning Guide Automobile Mileage Year vs. Mileage

1. Go to the graphing utility at <http://www.illuminations.nctm.org/imath/912/LinearRelationships/student/index.html#first>
2. Set the scale for the applet at x min = 1990; x max = 2010; y min = 0; y max = 160.
3. Plot the data in the table below on the applet.

Year	Mileage (thousands of miles)
1991	92
1992	132
1992	151
1993	150
1995	91
1995	114
1995	68
1995	56
1996	65
1996	76
1997	88
1998	79
1999	31
1999	21
2000	31
2000	45
2000	34
2001	8
2001	14
2001	3

4. Click on Show Line to see the least squares regression line for the data. What is the equation for this line?
5. What is the value of the correlation coefficient?



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11. Based on your equation, in what year would you expect a car was manufactured if it has 101,000 miles on the odometer? Does this make sense? Why or why not?
12. Based on your equation, how many miles would you expect to be on the odometer of an automobile that was produced in 1997? How does this compare to the actual data in the table? Why aren't these values the same?