

<p>FIGURING A RATE:</p>	<p>Step 1: Choose your base. This is often difficult. In reporting on fatalities by make of car, should you use the number of cars on the road, the number sold, or the total miles driven each year? You'll have to decide.</p> <p>Step 2: Divide the number you care about by the base. Choosing the numerator can also be tricky. Going back to the automobile fatality example, would you use the total number of deaths or the number of driver deaths? Take a hint using other reports you see on the topic. Experts have often come to an informal agreement about what the most telling number is.</p> <p>Step 3: Multiply by a nice round number, such as 1,000, 100,000 or 1 million.</p> <p>Step 4: Round the answer and simplify.</p>
<p>FORMULA:</p>	<p>Step 1: Choose the base, or "total"</p> <p>Step 2: $(\text{Category} / \text{Total}) = \text{Proportion or Rate}$</p> <p>Step 3: $\text{Proportion} \times 1,000 = \text{Rate per thousand}$</p> <p>Step 4: Round to zero decimal places</p>

EXAMPLE:

According to the FBI Crime in the United States for 2012, there were 13,000 violent and property crimes in Pittsburgh out of a population of 312,000. There were 8,870 crimes in tucson out of a population of 531,000. Figuring a rate per thousand residents lets you compare the two cities:

PITTSBURGH

Step 1: base = 312,000 people

Step 2: 13,000 crimes / 312,000 people = .041

Step 3: $0.041 \times 1,000 = 41$ crimes per 1,000 people

TUCSON

Step 1: base = 531,000 people

Step 2: $8,870 / 531,000$ people = 0.017

Step 3: $.017 \times 1,000 = 17$ crimes per 1,000 people

So the crime rate for Pittsburgh is nearly than $2 \frac{1}{2}$ times that of tucson – $41 / 17 = 2.4$