

Texting Distance

Many cities and states have banned texting while driving because it is dangerous, but many people think that texting for a few seconds is not harmful. Suppose you are driving 45 miles per hour and you take your eyes off the road to answer a text.

- 1) Predict the number of feet your car will travel during the 4 seconds it takes to reply. Just give your best guess at this point.
- 2) To check your prediction, begin by setting up only the units (no numbers) that are needed to convert from miles per hour to feet per second.
- 3) One student set up the unit calculation as shown. Decide if the problem is set up correctly. If not, correct it.

$$\frac{\text{miles}}{\text{hour}} \cdot \frac{\text{minutes}}{\text{hour}} \cdot \frac{\text{minutes}}{\text{second}} \cdot \frac{\text{miles}}{\text{feet}} = \frac{\text{feet}}{\text{second}}$$

- 4) Now place the numbers into your set-up and simplify. What is your speed in feet per second? How many feet will you travel in 4 seconds if you are driving 45 miles per hour? How close was your prediction?
- 5) Suppose that most text responses take between 2 and 6 seconds. Incorporate this information into your original dimensional analysis strategy and adjust your answer.